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**Department of Defense  
Fiscal Year (FY) 2024 Budget Estimates**

March 2023



**Navy**

*Justification Book Volume 3 of 5*

***Research, Development, Test & Evaluation, Navy***

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Navy • Budget Estimates FY 2024 • RDT&E Program

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## **Department of Defense Appropriations Act, 2024**

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### **Research, Development, Test and Evaluation, Navy**

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, \$26,922,225 to remain available for obligation until September 30, 2025.

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**Fiscal Year (FY) 2024 Overseas Operations Costs funding accounted for in the Base budget total \$15.**

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Department of the Navy  
FY 2024 President's Budget  
Exhibit R-1 FY 2024 President's Budget  
Total Obligational Authority  
(Dollars in Thousands)

	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
<b><u>Summary Recap of Budget Activities</u></b>					
Basic Research	681,475	688,889		688,889	637,263
Applied Research	1,243,015	1,487,017		1,487,017	1,026,339
Advanced Technology Development	960,390	1,309,342		1,309,342	1,016,552
Advanced Component Development & Prototypes	6,663,911	8,548,769		8,548,769	9,734,483
System Development & Demonstration	5,308,050	6,472,604		6,472,604	6,962,234
Management Support	1,602,667	1,251,196		1,251,196	1,163,613
Operational Systems Development	5,544,231	6,221,872	40,577	6,262,449	6,359,438
Software And Digital Technology Pilot Programs	29,128	24,008		24,008	22,303
<b>Total Research, Development, Test, &amp; Evaluation</b>	<b>22,032,867</b>	<b>26,003,697</b>	<b>40,577</b>	<b>26,044,274</b>	<b>26,922,225</b>
<b><u>Summary Recap of FYDP Programs</u></b>					
Strategic Forces	328,259	493,924		493,924	529,130
General Purpose Forces	1,548,495	1,790,107		1,790,107	2,079,369
Intelligence and Communications	619,446	677,588		677,588	801,122
Research and Development	17,356,083	20,650,575		20,650,575	21,462,528
Central Supply and Maintenance	39,965	28,381		28,381	26,532
Administration and Associated Activities	3,203	1,811		1,811	2,168
Space	596				
Classified Programs	2,136,820	2,361,311	40,577	2,401,888	2,021,376
<b>Total Research, Development, Test, &amp; Evaluation</b>	<b>22,032,867</b>	<b>26,003,697</b>	<b>40,577</b>	<b>26,044,274</b>	<b>26,922,225</b>

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of the Navy  
FY 2024 President's Budget  
Exhibit R-1 FY 2024 President's Budget  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
1	0601103N	University Research Initiatives	01	U	169,965	147,376		147,376	96,355
2	0601153N	Defense Research Sciences	01	U	511,510	541,513		541,513	540,908
	<b>Basic Research</b>				<b>681,475</b>	<b>688,889</b>		<b>688,889</b>	<b>637,263</b>
3	0602114N	Power Projection Applied Research	02	U	41,760	27,953		27,953	23,982
4	0602123N	Force Protection Applied Research	02	U	215,913	345,576		345,576	142,148
5	0602131M	Marine Corps Landing Force Technology	02	U	62,130	79,467		79,467	59,208
6	0602235N	Common Picture Applied Research	02	U	50,371	51,911		51,911	52,090
7	0602236N	Warfighter Sustainment Applied Research	02	U	114,681	121,707		121,707	74,722
8	0602271N	Electromagnetic Systems Applied Research	02	U	89,120	131,288		131,288	92,473
9	0602435N	Ocean Warfighting Environment Applied Research	02	U	100,774	165,622		165,622	80,806
10	0602651M	Joint Non-Lethal Weapons Applied Research	02	U	6,213	6,659		6,659	7,419
11	0602747N	Undersea Warfare Applied Research	02	U	104,687	104,111		104,111	61,503
12	0602750N	Future Naval Capabilities Applied Research	02	U	193,392	177,141		177,141	182,662
13	0602782N	Mine and Expeditionary Warfare Applied Research	02	U	40,983	48,649		48,649	30,435
14	0602792N	Innovative Naval Prototypes (INP) Applied Research	02	U	143,842	145,637		145,637	133,828
15	0602861N	Science and Technology Management - ONR Field Acitivities	02	U	79,149	81,296		81,296	85,063
	<b>Applied Research</b>				<b>1,243,015</b>	<b>1,487,017</b>		<b>1,487,017</b>	<b>1,026,339</b>
16	0603123N	Force Protection Advanced Technology	03	U	35,010	59,933		59,933	29,512

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).



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Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
17	0603271N	Electromagnetic Systems Advanced Technology	03	U	11,762	16,253		16,253	8,418
18	0603273N	Science & Technology for Nuclear Re-entry Systems	03	U		65,735		65,735	112,329
19	0603640M	USMC Advanced Technology Demonstration (ATD)	03	U	283,332	412,747		412,747	308,217
20	0603651M	Joint Non-Lethal Weapons Technology Development	03	U	13,026	14,048		14,048	15,556
21	0603673N	Future Naval Capabilities Advanced Technology Development	03	U	275,441	268,993		268,993	264,700
22	0603680N	Manufacturing Technology Program	03	U	74,826	61,704		61,704	61,843
23	0603729N	Warfighter Protection Advanced Technology	03	U	39,057	46,999		46,999	5,100
24	0603758N	Navy Warfighting Experiments and Demonstrations	03	U	60,878	99,020		99,020	75,898
25	0603782N	Mine and Expeditionary Warfare Advanced Technology	03	U	1,922	2,007		2,007	2,048
26	0603801N	Innovative Naval Prototypes (INP) Advanced Technology Development	03	U	165,136	261,903		261,903	132,931
		<b>Advanced Technology Development</b>			<b>960,390</b>	<b>1,309,342</b>		<b>1,309,342</b>	<b>1,016,552</b>
27	0603128N	Unmanned Aerial System	04	U	15,545	98,883		98,883	108,225
28	0603178N	Large Unmanned Surface Vehicles (LUSV)	04	U	98,871	136,580		136,580	117,400
29	0603207N	Air/Ocean Tactical Applications	04	U	26,972	60,737		60,737	40,653
30	0603216N	Aviation Survivability	04	U	24,286	17,387		17,387	20,874
31	0603239N	Naval Construction Forces	04	U	5,271	1,706		1,706	7,821
32	0603254N	ASW Systems Development	04	U	20,079	15,977		15,977	17,090
33	0603261N	Tactical Airborne Reconnaissance	04	U	3,111	3,562		3,562	3,721

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
34	0603382N	Advanced Combat Systems Technology	04	U	40,937	73,128		73,128	6,216
35	0603502N	Surface and Shallow Water Mine Countermeasures	04	U	51,637	87,746		87,746	34,690
36	0603506N	Surface Ship Torpedo Defense	04	U	8,573	473		473	730
37	0603512N	Carrier Systems Development	04	U	7,109	11,567		11,567	6,095
38	0603525N	PILOT FISH	04	U	391,704	671,000		671,000	916,208
39	0603527N	RETRACT LARCH	04	U	60,941	7,483		7,483	7,545
40	0603536N	RETRACT JUNIPER	04	U	140,080	239,088		239,088	271,109
41	0603542N	Radiological Control	04	U	758	772		772	811
42	0603553N	Surface ASW	04	U	1,099	1,180		1,180	1,189
43	0603561N	Advanced Submarine System Development	04	U	96,405	110,146		110,146	88,415
44	0603562N	Submarine Tactical Warfare Systems	04	U	13,832	10,808		10,808	15,119
45	0603563N	Ship Concept Advanced Design	04	U	132,244	130,405		130,405	89,939
46	0603564N	Ship Preliminary Design & Feasibility Studies	04	U	39,472	75,305		75,305	121,402
47	0603570N	Advanced Nuclear Power Systems	04	U	203,572	227,400		227,400	319,656
48	0603573N	Advanced Surface Machinery Systems	04	U	74,439	207,000		207,000	133,911
49	0603576N	CHALK EAGLE	04	U	76,723	91,280		91,280	116,078
50	0603581N	Littoral Combat Ship (LCS)	04	U	80,254	76,364		76,364	32,615
51	0603582N	Combat System Integration	04	U	16,884	18,236		18,236	18,610
52	0603595N	Ohio Replacement	04	U	302,004	344,981		344,981	257,076
53	0603596N	LCS Mission Modules	04	U	75,189	31,707		31,707	31,464

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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54	0603597N	Automated Test and Re-Test (ATRT)	04	U	36,461	60,073		60,073	10,809
55	0603599N	Frigate Development	04	U	98,022	108,626		108,626	112,972
56	0603609N	Conventional Munitions	04	U	7,245	9,286		9,286	9,030
57	0603635M	Marine Corps Ground Combat/Support System	04	U	69,451	111,431		111,431	128,782
58	0603654N	Joint Service Explosive Ordnance Development	04	U	33,974	36,304		36,304	44,766
59	0603713N	Ocean Engineering Technology Development	04	U	8,547	6,193		6,193	10,751
60	0603721N	Environmental Protection	04	U	28,150	21,647		21,647	24,457
61	0603724N	Navy Energy Program	04	U	64,991	75,320		75,320	72,214
62	0603725N	Facilities Improvement	04	U	6,306	5,664		5,664	10,149
63	0603734N	CHALK CORAL	04	U	558,549	753,303		753,303	687,841
64	0603739N	Navy Logistic Productivity	04	U	643	899		899	4,712
65	0603746N	RETRACT MAPLE	04	U	275,379	363,874		363,874	420,455
66	0603748N	LINK PLUMERIA	04	U	643,600	1,038,239		1,038,239	2,100,474
67	0603751N	RETRACT ELM	04	U	79,593	82,684		82,684	88,036
68	0603764M	LINK EVERGREEN	04	U	254,492	313,409		313,409	547,005
69	0603790N	NATO Research and Development	04	U	5,805	8,041		8,041	6,265
70	0603795N	Land Attack Technology	04	U	3,922	358		358	1,624
71	0603851M	Joint Non-Lethal Weapons Testing	04	U	27,556	30,533		30,533	31,058
72	0603860N	Joint Precision Approach and Landing Systems - Dem/Val	04	U	20,223	18,628		18,628	22,590
73	0603925N	Directed Energy and Electric Weapon Systems	04	U	80,055	65,080		65,080	52,129

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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74	0604014N	F/A -18 Infrared Search and Track (IRST)	04	U	47,637	55,069		55,069	32,127
75	0604027N	Digital Warfare Office	04	U	44,969	165,753		165,753	181,001
76	0604028N	Small and Medium Unmanned Undersea Vehicles	04	U	77,806	88,839		88,839	110,506
77	0604029N	Unmanned Undersea Vehicle Core Technologies	04	U	63,262	59,652		59,652	71,156
78	0604030N	Rapid Prototyping, Experimentation and Demonstration.	04	U		50,580		50,580	214,100
79	0604031N	Large Unmanned Undersea Vehicles	04	U	27,510				6,900
80	0604112N	Gerald R. Ford Class Nuclear Aircraft Carrier (CVN 78 - 80)	04	U	117,878	116,498		116,498	118,182
81	0604126N	Littoral Airborne MCM	04	U	18,067	30,240		30,240	
82	0604127N	Surface Mine Countermeasures	04	U	11,924	12,959		12,959	16,127
83	0604272N	Tactical Air Directional Infrared Countermeasures (TADIRCM)	04	U	32,530	39,028		39,028	34,684
84	0604289M	Next Generation Logistics	04	U	7,796	7,342		7,342	5,991
85	0604292N	Future Vertical Lift (Maritime Strike)	04	U	8,269	5,103		5,103	2,100
86	0604320M	Rapid Technology Capability Prototype	04	U	11,199	67,927		67,927	131,763
87	0604454N	LX (R)	04	U	3,332	18,830		18,830	21,319
88	0604536N	Advanced Undersea Prototyping	04	U	30,597	94,515		94,515	104,328
89	0604636N	Counter Unmanned Aircraft Systems (C-UAS)	04	U	5,462	7,438		7,438	11,567
90	0604659N	Precision Strike Weapons Development Program	04	U	80,661	34,824		34,824	5,976
91	0604707N	Space and Electronic Warfare (SEW) Architecture/Engineering Support	04	U	8,980	10,229		10,229	9,993

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
92	0604786N	Offensive Anti-Surface Warfare Weapon Development	04	U	75,093	223,826		223,826	237,655
93	0605512N	MEDIUM UNMANNED SURFACE VEHICLES (MUSVs))	04	U	57,872	85,966		85,966	85,800
94	0605513N	Unmanned Surface Vehicle Enabling Capabilities	04	U	115,436	181,534		181,534	176,261
95	0605514M	GROUND BASED ANTI-SHIP MISSILE	04	U	98,762	43,090		43,090	36,383
96	0605516M	LONG RANGE FIRES	04	U	85,073	36,693		36,693	36,763
97	0605518N	CONVENTIONAL PROMPT STRIKE (CPS)	04	U	1,282,595	1,230,041		1,230,041	901,064
98	0303354N	ASW Systems Development - MIP	04	U	8,536	9,769		9,769	10,167
99	0304240M	Advanced Tactical Unmanned Aircraft System	04	U	31,204	11,735		11,735	539
100	0304270N	Electronic Warfare Development - MIP	04	U	506	796		796	1,250
	<b>Advanced Component Development &amp; Prototypes</b>				<b>6,663,911</b>	<b>8,548,769</b>		<b>8,548,769</b>	<b>9,734,483</b>
101	0603208N	Training System Aircraft	05	U	5,758	15,128		15,128	44,120
102	0604038N	Maritime Targeting Cell	05	U		69,600		69,600	30,922
103	0604212M	Other Helo Development	05	U					101,209
104	0604212N	Other Helo Development	05	U	47,802	66,010		66,010	2,604
105	0604214M	AV-8B Aircraft - Eng Dev	05	U	10,037	9,205		9,205	8,263
106	0604215N	Standards Development	05	U	4,066	3,766		3,766	4,039
107	0604216N	Multi-Mission Helicopter Upgrade Development	05	U	52,962	54,684		54,684	62,350
108	0604221N	P-3 Modernization Program	05	U	564	343		343	771
109	0604230N	Warfare Support System	05	U	14,945	16,337		16,337	109,485
110	0604231N	Command and Control Systems	05	U	118,895	143,573		143,573	87,457

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Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
111	0604234N	Advanced Hawkeye	05	U	339,032	487,281		487,281	399,919
112	0604245M	H-1 Upgrades	05	U	49,316	43,759		43,759	29,766
113	0604261N	Acoustic Search Sensors	05	U	47,534	50,231		50,231	51,531
114	0604262N	V-22A	05	U	89,448	125,233		125,233	137,597
115	0604264N	Air Crew Systems Development	05	U	20,271	50,282		50,282	42,155
116	0604269N	EA-18	05	U	58,692	116,589		116,589	172,507
117	0604270N	Electronic Warfare Development	05	U	126,373	144,471		144,471	171,384
118	0604273M	Executive Helo Development	05	U	40,496	45,645		45,645	35,376
119	0604274N	Next Generation Jammer (NGJ)	05	U	230,396	54,679		54,679	40,477
120	0604280N	Joint Tactical Radio System - Navy (JTRS-Navy)	05	U	225,867	334,787		334,787	451,397
121	0604282N	Next Generation Jammer (NGJ) Increment II	05	U	72,937	135,467		135,467	250,577
122	0604307N	Surface Combatant Combat System Engineering	05	U	321,118	345,489		345,489	453,311
123	0604311N	LPD-17 Class Systems Integration	05	U	869				
124	0604329N	Small Diameter Bomb (SDB)	05	U	39,366	42,881		42,881	52,211
125	0604366N	Standard Missile Improvements	05	U	341,355	309,943		309,943	418,187
126	0604373N	Airborne MCM	05	U	10,838	10,882		10,882	11,368
127	0604378N	Naval Integrated Fire Control - Counter Air Systems Engineering	05	U	49,110	45,892		45,892	66,445
128	0604419N	Advanced Sensors Application Program (ASAP)	05	U	10,000	13,000		13,000	
129	0604501N	Advanced Above Water Sensors	05	U	60,394	72,772		72,772	115,396
130	0604503N	SSN-688 and Trident Modernization	05	U	92,168	93,501		93,501	93,435

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Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
131	0604504N	Air Control	05	U	32,614	39,138		39,138	42,656
132	0604512N	Shipboard Aviation Systems	05	U	8,889	11,759		11,759	10,442
133	0604518N	Combat Information Center Conversion	05	U	11,389	16,160		16,160	11,359
134	0604522N	Air and Missile Defense Radar (AMDR) System	05	U	84,526	87,341		87,341	90,307
135	0604530N	Advanced Arresting Gear (AAG)	05	U	146	151		151	10,658
136	0604558N	New Design SSN	05	U	468,358	316,085		316,085	234,356
137	0604562N	Submarine Tactical Warfare System	05	U	60,806	58,741		58,741	71,516
138	0604567N	Ship Contract Design/ Live Fire T&E	05	U	52,878	60,791		60,791	22,462
139	0604574N	Navy Tactical Computer Resources	05	U	4,267	4,177		4,177	4,279
140	0604601N	Mine Development	05	U	37,054	60,793		60,793	104,731
141	0604610N	Lightweight Torpedo Development	05	U	92,274	135,500		135,500	229,668
142	0604654N	Joint Service Explosive Ordnance Development	05	U	8,315	8,618		8,618	9,064
143	0604657M	USMC Ground Combat/Supporting Arms Systems - Eng Dev	05	U	40,885	45,025		45,025	62,329
144	0604703N	Personnel, Training, Simulation, and Human Factors	05	U	7,128	7,454		7,454	9,319
145	0604727N	Joint Standoff Weapon Systems	05	U		758		758	1,964
146	0604755N	Ship Self Defense (Detect & Control)	05	U	139,580	156,426		156,426	158,426
147	0604756N	Ship Self Defense (Engage: Hard Kill)	05	U	105,984	84,518		84,518	47,492
148	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	05	U	64,200	97,537		97,537	125,206
149	0604761N	Intelligence Engineering	05	U	20,684	23,742		23,742	19,969
150	0604771N	Medical Development	05	U	30,429	16,178		16,178	6,061

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
151	0604777N	Navigation/ID System	05	U	48,510	60,209		60,209	45,262
152	0604800M	Joint Strike Fighter (JSF) - EMD	05	U	555	611		611	
153	0604800N	Joint Strike Fighter (JSF) - EMD	05	U	252	234		234	
154	0604850N	SSN(X)	05	U	29,174	133,772		133,772	361,582
155	0605013M	Information Technology Development	05	U	10,854	11,361		11,361	22,663
156	0605013N	Information Technology Development	05	U	261,195	318,103		318,103	282,138
157	0605024N	Anti-Tamper Technology Support	05	U	8,393	7,271		7,271	8,340
158	0605180N	TACAMO Modernization	05	U	48,644	502,493		502,493	213,743
159	0605212M	CH-53K RDTE	05	U	212,181	220,240		220,240	222,288
160	0605215N	Mission Planning	05	U	86,255	76,107		76,107	86,448
161	0605217N	Common Avionics	05	U	52,789	77,960		77,960	81,076
162	0605220N	Ship to Shore Connector (SSC)	05	U	6,295	17,886		17,886	1,343
163	0605327N	T-AO 205 Class	05	U	4,287	220		220	71
164	0605414N	Unmanned Carrier Aviation (UCA)	05	U	257,887	254,446		254,446	220,404
165	0605450M	Joint Air-to-Ground Missile (JAGM)	05	U	345	371		371	384
166	0605500N	Multi-mission Maritime Aircraft (MMA)	05	U	28,842	37,939		37,939	36,027
167	0605504N	Multi-Mission Maritime (MMA) Increment III	05	U	157,793	161,697		161,697	132,449
168	0605611M	Marine Corps Assault Vehicles System Development & Demonstration	05	U	71,237	91,501		91,501	103,236
169	0605813M	Joint Light Tactical Vehicle (JLTV) System Development & Demonstration	05	U	1,921	2,856		2,856	2,609
170	0204202N	DDG-1000	05	U	110,789	180,374		180,374	231,778

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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171	0301377N	Countering Advanced Conventional Weapons (CACW)	05	U		12,341		12,341	17,531
172	0304785N	ISR & Info Operations	05	U	135,538	135,252		135,252	174,271
173	0306250M	Cyber Operations Technology Development	05	U	23,299	37,038		37,038	2,068
		<b>System Development &amp; Demonstration</b>			<b>5,308,050</b>	<b>6,472,604</b>		<b>6,472,604</b>	<b>6,962,234</b>
174	0604256N	Threat Simulator Development	06	U	56,311	29,430		29,430	22,918
175	0604258N	Target Systems Development	06	U	19,553	73,708		73,708	18,623
176	0604759N	Major T&E Investment	06	U	95,451	141,371		141,371	74,221
177	0605152N	Studies and Analysis Support - Navy	06	U	3,069	3,286		3,286	3,229
178	0605154N	Center for Naval Analyses	06	U	34,686	37,685		37,685	45,672
179	0605502N	Small Business Innovative Research	06	U	531,825				
180	0605804N	Technical Information Services	06	U	1,562	987		987	1,000
181	0605853N	Management, Technical & International Support	06	U	104,950	109,565		109,565	124,328
182	0605856N	Strategic Technical Support	06	U	3,402	3,787		3,787	4,053
183	0605863N	RDT&E Ship and Aircraft Support	06	U	135,097	173,352		173,352	203,447
184	0605864N	Test and Evaluation Support	06	U	444,883	479,281		479,281	481,975
185	0605865N	Operational Test and Evaluation Capability	06	U	25,326	27,808		27,808	29,399
186	0605866N	Navy Space and Electronic Warfare (SEW) Support	06	U	17,238	27,172		27,172	27,504
187	0605867N	SEW Surveillance/Reconnaissance Support	06	U	8,065	7,186		7,186	9,183
188	0605873M	Marine Corps Program Wide Support	06	U	42,480	39,744		39,744	34,976

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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189	0605898N	Management HQ - R&D	06	U	35,018	40,648		40,648	41,331
190	0606355N	Warfare Innovation Management	06	U	38,066	52,060		52,060	37,340
191	0305327N	Insider Threat	06	U	2,482	2,315		2,315	2,246
192	0902498N	Management Headquarters (Departmental Support Activities)	06	U	1,747	1,811		1,811	2,168
193	0909980N	Judgment Fund Reimbursement	06	U	579				
194	0909999N	Financing for Cancelled Account Adjustments	06	U	877				
	<b>Management Support</b>				<b>1,602,667</b>	<b>1,251,196</b>		<b>1,251,196</b>	<b>1,163,613</b>
196	0604840M	F-35 C2D2	07	U	501,609	531,032		531,032	544,625
197	0604840N	F-35 C2D2	07	U	473,749	503,365		503,365	543,834
198	0605520M	MARINE CORPS AIR DEFENSE WEAPONS SYSTEMS	07	U	59,018	69,663		69,663	99,860
199	0607658N	Cooperative Engagement Capability (CEC)	07	U	148,628	156,121		156,121	153,440
200	0101221N	Strategic Sub & Weapons System Support	07	U	190,928	312,502		312,502	321,648
201	0101224N	SSBN Security Technology Program	07	U	44,212	50,761		50,761	62,694
202	0101226N	Submarine Acoustic Warfare Development	07	U	58,645	81,237		81,237	92,869
203	0101402N	Navy Strategic Communications	07	U	34,474	49,424		49,424	51,919
204	0204136N	F/A-18 Squadrons	07	U	213,010	235,204		235,204	333,783
205	0204228N	Surface Support	07	U	13,195	12,197		12,197	8,619
206	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	U	129,919	122,719		122,719	122,834
207	0204311N	Integrated Surveillance System	07	U	83,349	98,370		98,370	76,279
208	0204313N	Ship-Towed Array Surveillance Systems	07	U	6,080	1,188		1,188	1,103

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
209	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	U	1,650	1,789		1,789	1,991
210	0204460M	Ground/Air Task Oriented Radar (G/ATOR)	07	U	43,761	61,104		61,104	92,674
211	0204571N	Consolidated Training Systems Development	07	U	53,099	100,339		100,339	115,894
212	0204575N	Electronic Warfare (EW) Readiness Support	07	U	53,412	45,936		45,936	61,677
213	0205601N	Anti-Radiation Missile Improvement	07	U	133,315	89,479		89,479	59,555
214	0205620N	Surface ASW Combat System Integration	07	U	27,781	28,999		28,999	29,973
215	0205632N	MK-48 ADCAP	07	U	98,707	155,868		155,868	213,165
216	0205633N	Aviation Improvements	07	U	140,478	149,450		149,450	143,277
217	0205675N	Operational Nuclear Power Systems	07	U	113,760	121,439		121,439	152,546
218	0206313M	Marine Corps Communications Systems	07	U	105,494	114,264		114,264	192,625
219	0206335M	Common Aviation Command and Control System (CAC2S)	07	U	12,503	14,865		14,865	12,565
220	0206623M	Marine Corps Ground Combat/Supporting Arms Systems	07	U	84,344	106,036		106,036	83,900
221	0206624M	Marine Corps Combat Services Support	07	U	20,254	26,522		26,522	27,794
222	0206625M	USMC Intelligence/Electronic Warfare Systems (MIP)	07	U	38,089	51,976		51,976	47,762
223	0206629M	Amphibious Assault Vehicle	07	U	7,475	8,246		8,246	373
224	0207161N	Tactical AIM Missiles	07	U	23,273	29,236		29,236	36,439
225	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	U	31,776	30,898		30,898	29,198
226	0208043N	Planning and Decision Aid System (PDAS)	07	U	2,982	3,609		3,609	3,565

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
230	0303138N	Afloat Networks	07	U	36,259	45,683		45,683	49,995
231	0303140N	Information Systems Security Program	07	U	32,592	33,752		33,752	33,390
232	0305192N	Military Intelligence Program (MIP) Activities	07	U	7,513	8,415		8,415	7,304
233	0305204N	Tactical Unmanned Aerial Vehicles	07	U	9,837	10,576		10,576	11,235
234	0305205N	UAS Integration and Interoperability	07	U	4,842	15,396		15,396	16,409
235	0305208M	Distributed Common Ground/Surface Systems	07	U	29,749	45,705		45,705	51,192
236	0305220N	MQ-4C Triton	07	U	13,029	13,893		13,893	12,094
237	0305231N	MQ-8 UAV	07	U	33,543	27,000		27,000	29,700
238	0305232M	RQ-11 UAV	07	U	533	1,234		1,234	2,107
239	0305234N	Small (Level 0) Tactical UAS (STUASL0)	07	U	1,772	3,761		3,761	2,999
240	0305241N	Multi-Intelligence Sensor Development	07	U	59,252	56,261		56,261	49,460
241	0305242M	Unmanned Aerial Systems (UAS) Payloads (MIP)	07	U	9,274	9,780		9,780	13,005
242	0305251N	Cyberspace Operations Forces and Force Support	07	U	34,977	36,505		36,505	2,000
243	0305421N	RQ-4 Modernization	07	U	134,323	150,093		150,093	300,378
244	0307577N	Intelligence Mission Data (IMD)	07	U	907	851		851	788
245	0308601N	Modeling and Simulation Support	07	U	9,479	9,437		9,437	10,994
246	0702207N	Depot Maintenance (Non-IF)	07	U	33,870	26,248		26,248	23,248
247	0708730N	Maritime Technology (MARITECH)	07	U	6,095	2,133		2,133	3,284
248	1203109N	Satellite Communications (SPACE)	07	U	596				
999	999999999	Classified Programs	07	U	2,136,820	2,361,311	40,577	2,401,888	2,021,376

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enacted	FY 2023 Supplementals Enacted*	FY 2023 Total Enacted	FY 2024 Request
		<b>Operational Systems Development</b>			5,544,231	6,221,872	40,577	6,262,449	6,359,438
249	0608013N	Risk management Information - Software Pilot Program	08	U	13,565	12,810		12,810	11,748
250	0608231N	Maritime Tactical Command and Control (MTC2) - Software Pilot Program	08	U	15,563	11,198		11,198	10,555
		<b>Software And Digital Technology Pilot Programs</b>			29,128	24,008		24,008	22,303
		<b>Total Research, Development, Test and Evaluation, Navy</b>			22,032,867	26,003,697	40,577	26,044,274	26,922,225

\*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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<u>Appropriation</u>	FY 2023	FY 2024
	Overseas	Overseas
	Operations	Operations
	Costs (OOC) *	Costs (OOC) *
Research, Development, Test and Evaluation, Navy		15
<b>Total Research, Development, Test, &amp; Evaluation</b>		<b>15</b>

\*FY 2023 and FY 2024 Overseas Operations Costs (OOC) numbers are a subset of the baseline submission.

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<b><u>Summary Recap of Budget Activities</u></b>		
Advanced Component Development & Prototypes		15
<b>Total Research, Development, Test, &amp; Evaluation</b>		<b>15</b>
<b><u>Summary Recap of FYDP Programs</u></b>		
Research and Development		15
<b>Total Research, Development, Test, &amp; Evaluation</b>		<b>15</b>

\*FY 2023 and FY 2024 Overseas Operations Costs (OOC) numbers are a subset of the baseline submission.

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	FY 2023 Overseas Operations Costs (OOC) *	FY 2024 Overseas Operations Costs (OOC) *
<hr/>		
<b><u>Summary Recap of Budget Activities</u></b>		
Advanced Component Development & Prototypes		15
<b>Total Research, Development, Test, &amp; Evaluation</b>		<b>15</b>
 <b><u>Summary Recap of FYDP Programs</u></b>		
Research and Development		15
<b>Total Research, Development, Test, &amp; Evaluation</b>		<b>15</b>

\*FY 2023 and FY 2024 Overseas Operations Costs (OOC) numbers are a subset of the baseline submission.



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Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Se c	FY 2023 Overseas Operations Costs (OOC) *	FY 2024 Overseas Operations Costs (OOC) *
70	0603795N	Land Attack Technology	04	U		15
		Other		U		15
		Advanced Component Development & Prototypes				15
Total Research, Development, Test and Evaluation, Navy						15

\*FY 2023 and FY 2024 Overseas Operations Costs (OOC) numbers are a subset of the baseline submission.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	95.918	5.758	15.128	44.120	-	44.120	26.306	35.286	35.977	36.717	Continuing	Continuing
3367: Training Aircraft Updates	94.106	4.992	14.572	43.110	-	43.110	25.328	34.399	35.074	35.796	Continuing	Continuing
9099: Physiological Episodes	1.812	0.766	0.556	1.010	-	1.010	0.978	0.887	0.903	0.921	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

This program element provides for design, development, integration and test of various pre and post production platform improvements for Naval Undergraduate Flight Training Systems which include T-45, T-6, T-44, TH-57, TH-73A, T-44 Follow-On: Multi-Engine Training System (METS), and T-45 Follow-On (Undergraduate Jet Training System (UJTS)/Tactical Surrogate). Continued development engineering for improvements in reliability, maintainability, and safety are required to ensure maximum benefit is achieved to provide effective cost of ownership and availability of aircraft to meet Chief of Naval Air Training (CNATRA) student training requirements. Specific efforts include: T-45, T-6, TH-57, T-44, and TH-73A Training System Improvements such as development and sustainment engineering change proposals (ECPs), avionics reliability and modernization, corrosion prevention ECPs, obsolescence ECPs, and new solutions required to meet evolving fleet training requirements; T-45 and T-6 Physiological Episode (PE) mitigation analysis; T-44 Follow-On: METS development; and T-45 Follow-On (UJTS/Tactical Surrogate) development.

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production decision.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	5.864	15.128	25.491	-	25.491
Current President's Budget	5.758	15.128	44.120	-	44.120
Total Adjustments	-0.106	0.000	18.629	-	18.629
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.106	0.000			
• Program Adjustments	0.000	0.000	22.301	-	22.301
• Rate/Misc Adjustments	0.000	0.000	-3.672	-	-3.672

**Change Summary Explanation**

Technical: N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft	
<p>Cost: FY 2024 funding request was increased by \$18.629M, which included a \$30.000M increase in support of the Tactical Surrogate portion of the T-45 Follow-On (UJTS/Tactical Surrogate) development program, and a \$7.680M decrease for the UJTS portion of the program, along with an overall reduction of \$3.700M for PU 3367 and overall increase of \$0.009M for PU 9099.</p> <p>Schedule: N/A</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft				Project (Number/Name) 3367 / Training Aircraft Updates			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3367: Training Aircraft Updates	94.106	4.992	14.572	43.110	-	43.110	25.328	34.399	35.074	35.796	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Training System Improvements:

Funding provides for design, development, integration and test of various pre and post production platform improvements for Naval Undergraduate Flight Training Systems which include T-45, T-6, T-44, TH-57, TH-73A, T-44 Follow-On: Multi-Engine Training System (METS), and T-45 Follow-On (UJTS/Tactical Surrogate).

T-45 and T-6 Physiological Episode (PE) Mitigation:

Efforts will provide for studies and development efforts to address mitigation of the T-45 and T-6 physiological episodes.

T-44 Follow-On: Multi-Engine Training System (METS):

The T-44 Training Systems consists of the (Qty 54) T-44C aircraft, and associated family of ground based training devices. The T-44 was fielded in 1978 as the only Navy/Marine Corps Multi-Engine trainer. T-44C is the only transitional platform from single engine to multi-engine Transport and Maritime fleet aircraft. The aging platform has become less cost effective to maintain annually as it has surpassed its fatigue life by greater than 50%. In addition, the aircraft is experiencing obsolescence, diminishing manufacturing resources and material shortages, and training capability gaps (as identified in the Capabilities Based Assessment Naval Undergraduate Flight Training). This effort supports development of alternatives/efforts for replacing the T-44 Multi-Engine replacement training system and development and validation of the acquisition strategy for future procurement of the capability to continue to provide the fleet replacement squadrons with qualified and capable Naval Aviators. This effort includes, but is not limited to, market research, requirements development, evaluation of acquisition strategies, evaluation of proposals, and testing of prototypes.

T-45 Follow-On (Undergraduate Jet Training System (UJTS)/Tactical Surrogate):

The T-45 Training System consists of the T-45C aircraft, ground based training devices, curricula, and associated equipment. The T-45 is facing significant aircraft, engine, and component obsolescence issues. These issues are projected to dramatically increase operating costs and aircraft availability by 2030. This research and development effort will investigate alternatives for replacing the T-45 training system and develop and validate the acquisition strategy for the procurement of a new T-XX platform capable of being utilized both as a T-45 Follow-On Undergraduate Jet Training System (UJTS) for CNATRA, and a Tactical Surrogate aircraft for the fleet, in order to achieve cost savings initiatives associated with reducing Fleet aircraft usage. The T-45 Follow-On (UJTS) will ensure training commands continue to provide the fleet replacement squadrons with qualified and capable naval aviators. The Tactical Surrogate will allow the fleet to reduce front line aircraft usage, maintenance requirements, and costs associated with squadron post deployment / work-up cycle and Fleet Replacement Squadron training while building and maintaining tactical proficiency through a familiar, modern, and relevant surrogate aircraft. This effort includes, but is not limited to, market research, requirements and training curricula development, evaluation of acquisition strategies, evaluation of proposals, development and testing of new training technologies, and testing of aircraft, Ground Based Training System, and equipment prototypes.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft		Project (Number/Name) 3367 / Training Aircraft Updates		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Training System Improvements		2.457	2.559	2.974	0.000	2.974
<b>Articles:</b>		-	-	-	-	-
<b>Description:</b> Funding provides for design, development, integration and test of various pre and post production platform improvements for Naval Undergraduate Flight Training Systems which include T-45, T-6, T-44, TH-57, TH-73A, T-44 Follow-on: Multi-Engine Training System (METS), and T-45 Follow-On (UJTS) / Tactical Surrogate.						
<b>FY 2023 Plans:</b> Continue studies & development efforts for platform improvements for Naval Undergraduate Flight Training Systems, to include T-45 and T-6 avionics and airframe improvement studies, T-45 Test Wing Maintenance, and T-45 Follow-On (UJTS) / Tactical Surrogate pre-acquisition studies.						
<b>FY 2024 Base Plans:</b> N/A						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY2023 to FY2024 increase of \$0.415M due to increased T-45 maintenance and Flight Ops support requirements.						
<b>Title:</b> T-44 Follow-On: Multi-Engine Training System (METS)		2.535	2.463	0.000	0.000	0.000
<b>Articles:</b>		-	-	-	-	-
<b>Description:</b> Funding supports research of alternatives for the T-44 Follow-On: Multi-Engine Training System (METS), to include development and validation of the acquisition strategy for future procurement of the capability, ensuring continuous support to fleet replacement squadrons with qualified and capable Naval Aviators. This effort includes, but is not limited to, market research, requirements development, evaluation of acquisition strategies, evaluation of proposals, and testing of prototypes.						
<b>FY 2023 Plans:</b> Develop Ground Based Training Systems (GBTS) and Contract Logistics Services (CLS) technical documentation, to include but not limited to Requirements Documents, Cybersecurity Strategy, Test and Evaluation Master Plan (TEMP), Acquisition Plan/Strategy, Funding Profile, Source Selection Plan, Risk						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft		Project (Number/Name) 3367 / Training Aircraft Updates		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Management Plan, Life Cycle Cost, Initial Capabilities Document (ICD), Market Survey, and relative documents required during the pre-solicitation process.						
OCO: N/A.						
FY 2024 Base Plans: No requirements in FY2024 as the program will be fully in production.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY2023 to FY2024 decrease to zero due to program transitioning from Development to Production in FY2023.						
Title: T-45 Follow-On Undergraduate Jet Training System / Tactical Surrogate		0.000	9.550	40.136	0.000	40.136
Articles:		-	-	-	-	-
Description: Funding supports research and development for the T-XX program (T-45 Follow-On Undergraduate Jet Training System / Tactical Surrogate), to include development and validation of the acquisition strategy for future procurement of the capability, ensuring continuous support to fleet replacement squadrons with qualified and capable Naval Aviators, and establishing the Tactical Surrogate capability for the Fleet. This effort includes, but is not limited to, market research, requirements and training curricula development, evaluation of acquisition strategies, evaluation of proposals, development and testing of new training technologies, and testing of aircraft, Ground Based Training System, and equipment prototypes. UJTS/ Tactical Surrogate funds were previously captured under the Training Systems Improvements Planned Program and have been broken out in a separate Planned Program in the BES24 cycle for visibility purposes.						
FY 2023 Plans: Develop Requirements Documents, Cybersecurity Strategy, Test and Evaluation Master Plan (TEMP), Acquisition Plan/Strategy, Funding Profile, Source Selection Plan, Risk Management Plan, Life Cycle Cost, Initial Capabilities Document (ICD), Market Survey, and relative documents required during the pre-solicitation process. Inform industry of the increased scope of the T-XX program effort to facilitate the program Request For Proposals and eventual program competition. Continue program studies to facilitate all program efforts.						
FY 2024 Base Plans:						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0603208N / <i>Training System Aircraft</i>		<b>Project (Number/Name)</b> 3367 / <i>Training Aircraft Updates</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Continuing efforts to develop Requirements Documents, Cybersecurity Strategy, Test and Evaluation Master Plan (TEMP), Acquisition Plan/Strategy, Funding Profile, Source Selection Plan, Risk Management Plan, Life Cycle Cost, Initial Capabilities Document (ICD), Market Survey, and relative documents required during the pre-solicitation process. Inform industry of the increased scope of the T-XX program effort to facilitate the program Request For Proposals and eventual program competition. Continue program studies to facilitate all program efforts.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY2023 to FY2024 increase of \$30.586M due to ramp up of the UJTS/Tactical Surrogate development program.					
<b>Accomplishments/Planned Programs Subtotals</b>	4.992	14.572	43.110	0.000	43.110

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APN/0569: <i>T45 Series</i>	155.366	199.356	170.357	-	170.357	169.978	182.577	186.029	192.593	165.995	2,997.115
• APN/0571: <i>JT Primary Acft Trnr Sys (JPATS)</i>	20.958	19.780	28.005	-	28.005	24.375	24.921	26.379	31.943	0.000	308.700
• APN/0549: <i>Trainer Acft Series</i>	7.849	9.568	16.376	-	16.376	12.509	12.673	13.125	13.597	9.894	363.646
• APN/0344: <i>Advanced Helicopter Trainer System</i>	163.490	119.816	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	648.726
• APN/0343: <i>Multi-Engine Training System (METS)</i>	0.000	107.801	289.141	-	289.141	301.908	0.000	0.000	0.000	0.000	698.850

**Remarks**

**D. Acquisition Strategy**

Training System Improvements:

Efforts under this category are expected to be limited to those efforts meeting thresholds under the abbreviated acquisition category.

Naval Aviation Physiological Episode:

Efforts under this category are expected to be limited to those efforts meeting thresholds under the abbreviated acquisition category.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft	Project (Number/Name) 3367 / Training Aircraft Updates
<p>T-44 Follow-On: Multi-Engine Training System (METS): A multi-engine training capability is required to provide advanced training for United States Navy (USN) and United States Marine Corps (USMC). The T-44 currently supports of Chief of Naval Air Training (CNATRA's) T-44 Multi-Engine Flight Instructor and Transition Curriculum, T-44C Advanced Multi-Engine MPTS, T-44C Multi-Engine Flight Instructor, and T-44C Intermediate E-2/C-2 MPTS syllabi. The T-44 Multi-Engine Follow-On Training System effort will be established to determine and implement the most cost efficient and effective path forward for providing Naval Aviators to the Fleet Replacement Squadrons. The acquisition program consists of a new multi-engine aircraft, Ground Based Training System (GBTS), and interim contractor maintenance/support.</p> <p>T-45 Follow-On (UJTS/Tactical Surrogate): The T-XX program facilitates a Undergraduate Jet Training System (UJTS) that recapitalizes the Navy's intermediate and advanced jet training capabilities while also establishing a Tactical Surrogate program that will allow the fleet to build and maintain tactical proficiency while reducing front line tactical aircraft use and costs. The program will include aircraft, ground based training systems, curricula, and associated equipment. Introduction of UJTS will provide higher availability, reduce operating costs, meet future strike training requirements, and provide a platform that aligns closely with strike aircraft the graduates will operate in the Fleet. Introduction of Tactical Surrogate will provide Fleet cost savings while not sacrificing aircrew flight time or tactical training. The preliminary acquisition strategy includes two separate contract actions: 1. Procurement of T-XX (UJTS and Tactical Surrogate) and ground based training systems; and 2. Interim Contractor Support for maintenance and sustainment.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft				Project (Number/Name) 3367 / Training Aircraft Updates					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UJTS/Tactical Surrogate: UJTS Pre-Acquisition Studies	WR	NAWCTSD : Orlando, FL	0.000	0.000	Dec 2021	9.550	Dec 2022	37.189	Dec 2023	-		37.189	Continuing	Continuing	Continuing
Prior Year Product Development costs no longer in the FYDP	Various	Various : Various	36.271	0.000		0.000		0.000		-		0.000	0.000	36.271	-
Subtotal			36.271	0.000		9.550		37.189		-		37.189	Continuing	Continuing	N/A
Remarks															
UJTS/Tactical Surrogate: UJTS Pre-Acquisition Studies: Continues funding for product development support for the T-45 Follow-On (UJTS) / Tactical Surrogate at NAWCAD Pax River, MD. FY2024 funding increased by \$27.639M to support pre-acquisition efforts for the T-45 Follow-On (UJTS) / Tactical Surrogate.															
Following cost category items were archived to prior year Product Development: Training System Improvement: T-45 ADSB Out Engineering															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Training System Improvement: T-45 Integrated Logistics Support	C/FFP	Ausley Associates, Inc. : Lexington Park, MD	1.910	0.000	May 2022	0.007	May 2023	0.000		-		0.000	0.000	1.917	-
T-44 Follow-On: Training System	WR	NAWCAD : Patuxent River, MD	0.908	1.737	Nov 2021	2.063	Nov 2022	0.000		-		0.000	0.000	4.708	-
T-44 Follow-On: Training System	WR	NAWCTSD : Orlando, FL	0.000	0.769	Nov 2021	0.000		0.000		-		0.000	0.000	0.769	-
T-44 Follow-On: Training System	WR	FRCSE : Jacksonville, FL	0.000	0.029	Nov 2021	0.000		0.000		-		0.000	0.000	0.029	-
UJTS/Tactical Surrogate: UJTS Support	C/BA	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		2.947	Nov 2023	-		2.947	Continuing	Continuing	Continuing
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	33.452	0.000		0.000		0.000		-		0.000	0.000	33.452	-
Subtotal			36.270	2.535		2.070		2.947		-		2.947	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft				Project (Number/Name) 3367 / Training Aircraft Updates					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
UJTS/Tactical Surrogate: Fund government labor support for the UJTS/Tactical Surrogate program															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	2.287	0.000		0.000		0.000		-		0.000	0.000	2.287	-
Subtotal			2.287	0.000		0.000		0.000		-		0.000	0.000	2.287	N/A
Remarks															
Following cost category items were archived to prior year Product Development: Training System Improvements: T-45 Testing, Evaluation, & Certification Training System Improvements: T6 Test and Evaluation															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Training System Improvements:T-45 PBTH Flight Hours	C/FFP	Rolls Royce : Indianapolis, IN	1.014	0.083	May 2022	0.336	May 2023	0.343	May 2024	-		0.343	1.200	2.976	2.904
Training System Improvements:T-45 Test Wing Maintenance	MIPR	Vertex Aerospace LLC : Madison, MS	3.856	2.315	Nov 2021	2.094	Nov 2022	2.507	Nov 2023	-		2.507	17.394	28.166	-
Training System Improvements: Travel	WR	NAVAIR : Patuxent River, MD	0.071	0.059	Oct 2021	0.122	Oct 2022	0.124	Oct 2023	-		0.124	Continuing	Continuing	Continuing
T-44 Follow-On: Program Management Studies & Analysis	C/FFP	TBD : TBD	0.004	0.000	Dec 2021	0.400	Dec 2022	0.000		-		0.000	0.215	0.619	1.013
Prior Year Mgmt costs no longer funded in FYDP	Various	Various : Various	14.333	0.000		0.000		0.000		-		0.000	0.000	14.333	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft				Project (Number/Name) 3367 / Training Aircraft Updates					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			19.278	2.457		2.952		2.974		-		2.974	Continuing	Continuing	N/A
Remarks															
Training System Improvements, T-45 PBTH Flight Hours: Continues funding for Power-By-The-Hour (PBTH) flight hours and support services for Retrofit Integration Testing (RIT) of T-45 aircraft and F-405 engines at Pax River, MD.															
Training System Improvements, T-45 Test Wing Maintenance: Continues funding for T-45 aircraft maintenance and support for Retrofit Integration Testing (RIT) at Pax River, MD. FY2024 funding increased from FY2023 by \$0.413M for increased maintenance and Flight Ops support requirements.															
Training System Improvements, Travel: Continues funding for PMA's consolidated travel costs required to support management and service support for product development for all programs.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			94.106	4.992		14.572		43.110		-		43.110	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0603208N / Training System Aircraft

Project (Number/Name)

3367 / Training Aircraft Updates

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

**Training System Improvements**

Product Development: T-45 Follow-On (UJTS) / Tactical Surrogate: Pre-acquisition Studies

Study/Analysis/Support: T-45 Integrated Logistics Support: T-45 ILS

T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: METS Contract Award

T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: T-44 Follow-On: METS Training System Support

**Naval Aviation Physiological Episodes**

Product Development: PE Support: T-45, PE System Engineering

Product Development: PE Support: T-45, PE Engineering Support

Product Development: PE Test and Evaluation: T-45, PE Test &amp; Evaluation

Product Development: PE Test and Evaluation: T-6, PE Test &amp; Evaluation

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0603208N / Training System Aircraft

Project (Number/Name)

3367 / Training Aircraft Updates

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Training System Improvements</b>				
Product Development: T-45 Follow-On (UJTS) / Tactical Surrogate: Pre-acquisition Studies	1	2022	4	2028
Study/Analysis/Support: T-45 Integrated Logistics Support: T-45 ILS	1	2022	4	2023
T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: METS Contract Award	2	2023	2	2023
T-44 Follow-On: Multi-Engine Training System (METS): Systems Engineering: T-44 Follow-On: METS Training System Support	1	2022	4	2023
<b>Naval Aviation Physiological Episodes</b>				
Product Development: PE Support: T-45, PE System Engineering	1	2022	4	2028
Product Development: PE Support: T-45, PE Engineering Support	1	2022	4	2028
Product Development: PE Test and Evaluation: T-45, PE Test & Evaluation	1	2022	4	2028
Product Development: PE Test and Evaluation: T-6, PE Test & Evaluation	1	2022	4	2028



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0603208N / <i>Training System Aircraft</i>				Project (Number/Name) 9099 / <i>Physiological Episodes</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9099: <i>Physiological Episodes</i>	1.812	0.766	0.556	1.010	-	1.010	0.978	0.887	0.903	0.921	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

T-45 and T-6 Physiological Episode (PE) Mitigation:

Efforts will provide for studies and development efforts to address mitigation of the T-45 and T-6 physiological episodes.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> T-45 Physiological Episode Mitigation  <b>Articles:</b>  <b>Description:</b> Funding provides for design, development, integration and test of platform improvements for Naval Aviation Physiological Episode (PE) Mitigation in the T-45 Training Aircraft.  <b>FY 2023 Plans:</b> Continue Physiological Episode (PE) mitigation studies and development efforts for platform improvements to the T-45 Aircraft Training System. Conduct studies on acceptable breathing resistance limits under varying hypoxic, normoxic, and hyperoxic conditions in order to inform future platform improvements.  <b>FY 2024 Base Plans:</b> Continue Physiological Episode (PE) mitigation studies and development efforts for platform improvements to the T-45 Aircraft Training System. Conduct studies on acceptable breathing resistance limits under varying hypoxic, normoxic, and hyperoxic conditions in order to inform future platform improvements.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY2023 to FY2024 increase of \$0.451M due to increase in continuing efforts for ABOS and GGU-25.	0.566 -	0.421 -	0.872 -	0.000 -	0.872 -
<b>Title:</b> T-6 Physiological Episode Mitigation  <b>Articles:</b>  <b>Description:</b> Funding provides for design, development, integration and test of platform improvements for Naval Aviation Physiological Episode (PE) Mitigation in the T-6 training aircraft.  <b>FY 2023 Plans:</b>	0.200 -	0.135 -	0.138 -	0.000 -	0.138 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0603208N / <i>Training System Aircraft</i>				<b>Project (Number/Name)</b> 9099 / <i>Physiological Episodes</i>			
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
						<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	
Continue joint studies and development efforts with the US Air Force for platform improvements to the Joint Primary Aircraft Training System (JPATS/T-6). Continue operational field test and evaluation on newly installed OBOGS O2 concentrators. Research, develop and test installation of Automatic Backup Oxygen System (ABOS) in the T-6A. Conduct test and evaluation of prototype Integrated Sensors Phase II package.  <b>FY 2024 Base Plans:</b> Continue joint studies and development efforts with the US Air Force for platform improvements to the Joint Primary Aircraft Training System (JPATS/T-6). Continue operational field test and evaluation on newly installed OBOGS O2 concentrators. Research, develop and test installation of Automatic Backup Oxygen System (ABOS) in the T-6A. Conduct test and evaluation of prototype Integrated Sensors Phase II package.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY2023 to FY2024 increase of \$0.003M to account for inflation adjustments.											
<b>Accomplishments/Planned Programs Subtotals</b>						0.766	0.556	1.010	0.000	1.010	
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN/0569: <i>T-45 Physiological Episode Mitigation OSIP 012-19</i>	155.366	199.356	170.357	-	170.357	169.978	182.577	186.029	192.593	165.995	2,997.115
• APN/0571: <i>JPATS Physiological Episode Mitigation OSIP 007-20</i>	20.958	19.780	28.005	-	28.005	24.375	24.921	26.379	31.943	0.000	308.700
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
PE: Efforts under this category are expected to be limited to those efforts meeting thresholds under the abbreviated acquisition category.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft				Project (Number/Name) 9099 / Physiological Episodes					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T45 PE OBOGS	C/BA	JHU/APL : Baltimore, MD	0.400	0.350	Dec 2021	0.000		0.000		-		0.000	0.000	0.750	-
Subtotal			0.400	0.350		0.000		0.000		-		0.000	0.000	0.750	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T45 PE Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.305	0.216	Nov 2021	0.209	Nov 2022	0.716	Nov 2023	-		0.716	Continuing	Continuing	Continuing
T45 PE Engineering Support	WR	Naval Medical Reserach Center : Silver Spring, MD	0.280	0.000	Nov 2021	0.178	Nov 2022	0.000		-		0.000	0.000	0.458	-
Subtotal			0.585	0.216		0.387		0.716		-		0.716	Continuing	Continuing	N/A
Remarks															
T45 PE, Systems Engineering: Continues funding for engineering support T-45 Physiological Episode (PE) mitigation program at NAWCAD Pax River, MD. Funding is increased in FY 2024 for continuing engineering efforts for ABOS and GGU-25.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWCPCD : Panama City Beach, FL	0.070	0.000	Nov 2021	0.034	Nov 2022	0.156	Nov 2023	-		0.156	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NAWCAD : Patuxent River, MD	0.757	0.162	Nov 2021	0.135	Nov 2022	0.138	Nov 2023	-		0.138	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	AFLCM/WNWK : WR AFB	0.000	0.038	May 2022	0.000		0.000		-		0.000	0.000	0.038	-
Subtotal			0.827	0.200		0.169		0.294		-		0.294	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft				Project (Number/Name) 9099 / Physiological Episodes					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
T45 PE, Test & Evaluation: Continues funding for engineering support for the T-45 Physiological Episode (PE) mitigation program at NSWC, Panama City Division, Panama City, FL. Funding is increased in FY 2024 for continuing test efforts for ABOS and GGU-25.															
T6 PE, Test & Evaluation: Continues funding for engineering support for the T-6 Physiological Episode (PE) mitigation program at NAWCAD Pax River, MD.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.812	0.766		0.556		1.010		-		1.010	Continuing	Continuing	N/A
Remarks															
None.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
1319 / 5								PE 0603208N / Training System Aircraft								9099 / Physiological Episodes			

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Naval Aviation Physiological Episodes																												
Support: PE Support: T-45 PE System Engineering																												
Support: PE Support: T-6 PE Engineering Support																												
Support: PE Test & Evaluation: T-45 PE Test & Evaluation																												
Support: PE Test & Evaluation: T-6 PE Test & Evaluation																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0603208N / Training System Aircraft	Project (Number/Name) 9099 / Physiological Episodes

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Naval Aviation Physiological Episodes				
Support: PE Support: T-45 PE System Engineering	1	2022	4	2028
Support: PE Support: T-6 PE Engineering Support	1	2022	4	2028
Support: PE Test & Evaluation: T-45 PE Test & Evaluation	1	2022	4	2028
Support: PE Test & Evaluation: T-6 PE Test & Evaluation	1	2022	4	2028

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604038N I (U) <i>Maritime Targeting Cell</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	69.600	30.922	-	30.922	43.301	43.200	34.000	34.680	Continuing	Continuing
3468: <i>Maritime Targeting Cell</i>	0.000	0.000	39.600	30.922	-	30.922	43.301	43.200	34.000	34.680	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	0.000	30.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.000

**A. Mission Description and Budget Item Justification**

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

<b><u>B. Program Change Summary (\$ in Millions)</u></b>	<b><u>FY 2022</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024 Base</u></b>	<b><u>FY 2024 OCO</u></b>	<b><u>FY 2024 Total</u></b>
Previous President's Budget	0.000	39.600	30.900	-	30.900
Current President's Budget	0.000	69.600	30.922	-	30.922
Total Adjustments	0.000	30.000	0.022	-	0.022
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	30.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	0.022	-	0.022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604038N / (U)Maritime Targeting Cell				Project (Number/Name) 3468 / Maritime Targeting Cell			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3468: Maritime Targeting Cell	0.000	0.000	39.600	30.922	-	30.922	43.301	43.200	34.000	34.680	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604038N / (U)Maritime Targeting Cell				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	0.000	30.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0604212M / <i>Other Helicopter Development</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	0.000	0.000	0.000	101.209	-	101.209	136.218	136.224	135.244	137.041	Continuing	Continuing
3406: <i>Attack and Utility Replacement Aircraft</i>	0.000	0.000	0.000	101.209	-	101.209	136.218	136.224	135.244	137.041	Continuing	Continuing

**Note**  
This effort transitions from PE 0604212N to PE 0604212M in FY 2024 and is not a New Start.

**A. Mission Description and Budget Item Justification**  
This Program Element includes funding for the development of USMC Vertical Take-Off and Landing (VTOL) Family of Systems (FoS) capability. VTOL FoS is a USMC initiative to address vertical lift capability requirements and determine feasible and affordable solutions in support of the Warfighter. This PE will include development and prototype efforts developed to progress high-risk technology areas in support of future Marine capabilities. This effort is not a FY 2024 new start.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	0.000	0.000	5.536	-	5.536
Current President's Budget	0.000	0.000	101.209	-	101.209
Total Adjustments	0.000	0.000	95.673	-	95.673
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	95.140	-	95.140
• Rate/Misc Adjustments	0.000	0.000	0.533	-	0.533

**Change Summary Explanation**  
Funds increase from FY 2023 to FY 2024 due to transfer of effort from PE 0604212N to PE 0604212M beginning in FY 2024. This effort is not a new start.

FY22 and FY23 activities shown on the R4 & R4A were funded in 0604212N.

Technical: Not applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0604212M / Other Helicopter Development	
Schedule: Not applicable.		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development				Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3406: Attack and Utility Replacement Aircraft	0.000	0.000	0.000	101.209	-	101.209	136.218	136.224	135.244	137.041	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

USMC Vertical Take-Off and Landing (VTOL) Family of Systems (FoS) is a United States Marine Corps (USMC) Future Vertical Lift (FVL) initiative addressing vertical lift capability requirements that are feasible and affordable in support of the USMC Warfighter. This is a supporting element of the USMC's Force Design 2030 guidance. USMC VTOL FoS will facilitate developmental and operational prototyping and demonstration of capabilities in alignment with co-developed mission focused areas supporting Assault/Support, Attack/Strike, and Aviation Sustainment. USMC VTOL FoS will continue the transition of science and technology efforts into meaningful Warfighter capability, which includes OSD Joint Capability Technology Demonstration (JCTD) and Rapid Defense Experiment Reserve (RDER) projects such as Long Range Attack Missile (LRAM) and Penetrating Affordable Autonomous Collaborative Killer- Portfolio (PAACK-P). The USMC VTOL FoS is closely aligned with the OSD-sponsored FVL FoS initiative and will look to leverage any aspects of the Joint Service programs that may benefit the USMC through accelerated development and/or reduced life cycle costs. USMC VTOL FoS will be a force multiplier with superior performance, payload, survivability, agility, endurance, and reliability that enables warfighters to win in a future dynamic battlespace. USMC VTOL FoS will increase the Marine Air Ground Task Force's (MAGTF) capacity for long-range fires, Assault/Support, Attack/Strike, and Aviation Sustainment through the development of capabilities such as a logistics connector. This directly supports and enables Force Design 2030 by enabling the support of the Stand-in Force (SiF), Expeditionary Advanced Basing Operations (EABO), and Littoral Operations in a Contested Environment (LOCE).

USMC VTOL FoS will utilize Doctrine, Organization, Training, Material, Leadership and Education, Personnel, and Facilities and Policy (DOTmLPF-P) analyses that will include all facets of a program with particular focus on life-cycle cost reductions through common processes, support equipment, logistic support and component commonality utilizing non-materiel solutions, such as maintenance strategies, training solutions, and infrastructure requirements. Air vehicle capabilities will include primary mechanical, electrical, pneumatic, and structural components such as drivetrain, generators, landing gear, hydraulics, controls, seats, etc. The mission subsystems will include all on and off-board components with embedded control software for those components that provide all mission functionality, cockpit displays, cockpit hardware subsystem controllers and interfaces. The architecture will include the fundamental organization of the complete system, the processing method/component(s), the platform software, the operating environment, and the on-aircraft infrastructure to facilitate integration of all subsystems and platform.

This effort is not a FY 2024 new start.

**JUSTIFICATION FOR BUDGET ACTIVITY:** This program element is funded for Advanced Component Development & Prototype activities, including conducting prototyping and system demonstration tasks aimed at validating requirements.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development		Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Attack and Utility Replacement Aircraft		0.000	0.000	101.209	0.000	101.209
Articles:		-	-	-	-	-
FY 2023 Plans: N/A						
FY 2024 Base Plans: Tasks to be performed may include: Acquisition Program Management functions, Acquisition Documentation, Engineering modeling and analysis, Test and Evaluation planning and development, a Model Based System Specification, continued Concept Development and Technology Maturation (CDTM) efforts in critical high-risk technology areas, culminating in design trade studies and prototyping on associated systems. CDTM efforts will include studies, virtual simulation, conceptual design, prototyping of VTOL FoS Air Vehicles and all associated Avionics, Propulsion and Dynamics, Communications and Navigation, Weapons and Fire Control, Missile and Associated Payloads, Human Systems Integration, Survivability and Vulnerability, Missions and Missions Systems Management, Reliability and Maintainability, Training, Logistics, Sensor, Pilotage and Targeting Systems, Flight Control, Integrated Digital Environment Development, Digital Engineering, Autonomy, Crewed/ Uncrewed Systems, and Software/Hardware architecture.						
Continue advancing technologies in the area of Modular Open Systems Approach (MOSA) to systems architectures via MOSA OTA. Analytical rigor will be provided by planned VTOL FoS efforts to integrate within the USN's Navy Capabilities-Based Assessments Integration Process (NCIP) and the USMC's NCIP-Marine Corps processes, as well as continued cross-service collaboration efforts with the Army and Air Force. Joint All-Domain Operations (JADO) requirements, informed by multi-service efforts including the Joint Capability Technology Demonstration (JCTD) Long Range Attack Missile (LRAM), the Rapid Defense Experimentation Fund (RDER) Penetrating Affordable Autonomous Collaborative Killer- Portfolio (PAACK-P), and RDER Air Loitering Munitions (ALM) efforts, will be integrated with the Weapons OTA within VTOL FoS established laboratory infrastructure. Efforts will include working with transition partners across the Services to ensure effective investment strategies resulting in capability delivered to the Warfighter. The areas of concentration include: Survivability, Sensors, Weapons, Mission Systems, EW packages, and Air Vehicle high-risk technology areas.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604212M / <i>Other Helicopter Development</i>		<b>Project (Number/Name)</b> 3406 / <i>Attack and Utility Replacement Aircraft</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Funds increase from FY 2023 to FY 2024 reflects the VTOL FoS ramp prior to releasing major Engineering and Manufacturing Development (EMD) contract at Milestone B in FY 2026. Increase funding will enable risk reduction efforts to address VTOL FoS need for appropriately scaled engine power plans as well as survivability technology needs driven by Force Design 2030. This effort is not a FY 2024 new start as funds were budgeted in PE 0604212N in FY 2023 and prior.						
<b>Accomplishments/Planned Programs Subtotals</b>		0.000	0.000	101.209	0.000	101.209
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b> <p>The Analysis of Alternatives (AoA) was initiated in 3QFY2017 to begin the assessment of the technical feasibility, operational feasibility, technical risk, and affordability of potential solutions. The AoA was completed in FY2019 resulting in OSD Sufficiency. In FY 2021, acquisition and requirements documentation refinement continued. MBSE Broad Agency Announcements (BAAs) awarded and execution progressed, allowing the Program to gain insight alongside Industry in implementing Digital Engineering for systems design. In FY 2022, a Capabilities Based Assessment (CBA) was completed, requirements analysis and document generation continued and multiple MOSA OTAs were awarded. Reductions in the technical risk associated with the Program justifies a direct Milestone B entry. In FY 2023, MOSA OTA execution will continue, multiple Weapons OTA awards will occur, a VTOL FoS Capabilities Development Document (CDD) will be routed for Marine Corps Requirements Oversight Council (MROC) approval, and concept development and technology maturation efforts will continue. In FY2024, Concept Development and Tech Maturation (CDTM) will continue to support Logistics Connector development with Pre-MS B activities. This will include Milestone and Acquisition documentation, component risk reduction, and Science and Technology (S&amp;T) transition activities to the Program of Record. CDTM will continue the execution of the Weapons OTA and include the addition of critical technology risk areas including engines and survivability.</p>						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development				Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Industry Technology Collaboration	C/CPFF	Various : Various	0.000	0.000		0.000		25.525	Dec 2023	-		25.525	Continuing	Continuing	Continuing
Joint All Domain Operations (JADO)/TAC Demo	C/CPFF	Various : Various	0.000	0.000		0.000		17.462	Nov 2023	-		17.462	Continuing	Continuing	Continuing
Concept Development and Technology Maturation (CDTM)	C/CPFF	Various : Various	0.000	0.000		0.000		38.344	Dec 2023	-		38.344	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		81.331		-		81.331	Continuing	Continuing	N/A
Remarks															
Funds increase from FY 2023 to FY 2024 due to modeling and analysis efforts and industry collaboration that will provide validated capability solutions.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		10.545	Nov 2023	-		10.545	Continuing	Continuing	Continuing
Development Support	WR	Various : Various	0.000	0.000		0.000		5.054	Dec 2023	-		5.054	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		15.599		-		15.599	Continuing	Continuing	N/A
Remarks															
Funds increase from FY 2023 to FY 2024 due to increased support for generation of requirements documentation supporting MS B and execution of risk reduction efforts.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	Various : Various	0.000	0.000		0.000		0.871	Nov 2023	-		0.871	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.871		-		0.871	Continuing	Continuing	N/A



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development						Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	Various : Various	0.000	0.000		0.000		0.871	Nov 2023	-		0.871	Continuing	Continuing	Continuing
Program Management Support	WR	Various : Various	0.000	0.000		0.000		2.450	Nov 2023	-		2.450	Continuing	Continuing	Continuing
Travel	C/BA	NAVAIR : Patuxent River, MD	0.000	0.000		0.000		0.087	Oct 2023	-		0.087	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		3.408		-		3.408	Continuing	Continuing	N/A
Remarks															
Funds increase from FY 2023 to FY 2024 due to increased management requirements supporting acquisition documentation for MS B.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		0.000		101.209		-		101.209	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604212M / Other Helicopter Development

Project (Number/Name)

3406 / Attack and Utility Replacement Aircraft

	CY FY QTR	2021	2022				2023				2024				2025				2026				2027				2028						
		FY 22				FY 23				FY 24				FY 25				FY 26				FY 27				FY 28							
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
MBSE		MBSE BAA																															
Logistics Connector						MOSA OTA												MS-B ☆								EMD							
TACAIR										RDER PAACK-P																							
Attack / Strike						Weapons OTA																											
										JCTD LRAM																							
														RDER ALM																			
Survivability		Helo Survivability / Fleet Experiment								FNC Survivability																							
Requirements Development										Logistics Connector (Priority System)				Draft CDD																			
														Attack / Strike				Draft CDD															

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development	Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Vertical Take Off and Landing Family of Systems</b>				
Acquisition Milestones: Milestone B: Milestone B	2	2026	2	2026
Systems Development: Concept Development and Tech Maturation: Concept Development and Tech Maturation	1	2023	4	2028
Systems Development: Weapons OTA: Weapons OTA	4	2022	2	2025
Systems Development: MOSA OTA: MOSA OTA	2	2022	1	2024
Systems Development: EMD: EMD	3	2026	4	2028

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0604212N / <i>Other Helicopter Development</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	150.972	47.802	66.010	2.604	-	2.604	2.389	2.436	2.473	2.524	Continuing	Continuing
1109: <i>CH/MH-53</i>	110.495	2.838	3.657	2.604	-	2.604	2.389	2.436	2.473	2.524	Continuing	Continuing
3406: <i>Attack and Utility Replacement Aircraft</i>	40.477	44.964	62.353	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	147.794

**A. Mission Description and Budget Item Justification**

This Program Element includes funding for the development support for improvements to current systems for CH/MH-53 and development of USMC Vertical Take-Off and Landing (VTOL) Family of Systems (FoS) formerly Attack and Utility Replacement Aircraft (AURA) capability. The H-53 is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. H-53 RDT&E efforts focus on trade studies and risk reduction measures to identify candidate survivability, safety, avionics, cargo handling, cockpit and other airframe specific improvements to extend the service life. VTOL FoS is a USMC initiative to address vertical lift capability requirements and determine feasible and affordable solutions in support of the Warfighter.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	49.312	66.010	111.464	-	111.464
Current President's Budget	47.802	66.010	2.604	-	2.604
Total Adjustments	-1.510	0.000	-108.860	-	-108.860
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.510	0.000			
• Program Adjustments	0.000	0.000	-108.860	-	-108.860
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

**Change Summary Explanation**

Cost/Technical/Schedule:

1109:

FY 2024 funding increased since the previous President's Budget submission due to inflationary and working capital fund rate adjustments.

3406:

Cost: Funds decrease from FY 2023 to FY 2024 due to transfer of effort to new PE 0604212M beginning in FY 2024.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development	
Schedule: Concept Development and Tech Maturation start date moves from Q3 FY 2023 to Q1 FY 2023 to align with anticipated contract award.		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development				Project (Number/Name) 1109 / CH/MH-53			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1109: CH/MH-53	110.495	2.838	3.657	2.604	-	2.604	2.389	2.436	2.473	2.524	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The H-53 helicopter is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. H-53 efforts will continue to develop and qualify components, prior to production and approval decisions, in order to replace obsolete system components. Emphasis will be placed on supportability improvement modifications that will sustain the H-53 aircraft until the transition of the H-53K is complete. These efforts combined, will significantly improve the readiness of the H-53 fleet while reducing long term operational and supportability costs. Survivability efforts to address improved situational awareness to pilots will include improved Digital Interoperability and improve Degraded Visual Environment Awareness. Modeling and simulation will be used to the maximum practical extent throughout this effort. Manned Flight Simulator will be utilized to develop, install and test interim modifications to existing H-53 legacy avionics, while maintaining the original basic system footprint and functionality. As a part of this effort, a complete Electro Magnetic Vulnerability assessment will be required for the affected and/or modified systems.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: H-53 Avionics  Articles:  FY 2023 Plans: Continue to integrate software applications for cockpit and avionics improvements, to include the development of new sensors. Develop flight control computer and test set design modifications to address anticipated obsolescence issues. Conduct Business Case Analyses to determine impact of high Operation and Support cost drivers and address alternatives to mitigate identified issues. Investigate solutions for improved Degraded Visual Environmental to include coupled flight control capability.  FY 2024 Base Plans: Continue to integrate software applications for cockpit and avionics improvements, to include the development of new sensors. Develop flight control computer and test set design modifications to address anticipated obsolescence issues. Conduct Business Case Analyses to determine impact of high Operation and Support cost drivers and address alternatives to mitigate identified issues. Investigate solutions for improved Degraded Visual Environmental to include coupled flight control capability.  FY 2024 OCO Plans:								1.317	1.695	1.173	0.000	1.173
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development		Project (Number/Name) 1109 / CH/MH-53	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.522 million from FY 2023 to FY 2024 due to decreased H-53 avionics obsolescence upgrades.					
Title: H-53 Survivability		0.972	1.220	0.885	0.000
Articles:		-	-	-	-
FY 2023 Plans: Continue to perform trade studies, risk reduction, design, development, model, integration and test activities for H-53 safety and survivability to include increased situational awareness via digital interoperability.					
FY 2024 Base Plans: Continue to perform trade studies, risk reduction, design, development, model, integration and test activities for H-53 safety and survivability to include increased situational awareness via digital interoperability.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.335 million from FY 2023 to FY 2024 due to decreased survivability analysis requirements.					
Title: Project Management Support		0.549	0.742	0.546	0.000
Articles:		-	-	-	-
FY 2023 Plans: Continue to provide in-house, field activity, and contractor support of IPTs to allow for studies and analyses, preparation of acquisition documentation and examination of equipment and avionics for the H-53. Efforts include, but are not limited to, government development support, engineering support, product management support, system engineering and logistics support, and travel for the H-53 program.					
FY 2024 Base Plans: Continue to provide in-house, field activity, and contractor support of IPTs to allow for studies and analyses, preparation of acquisition documentation and examination of equipment and avionics for the H-53. Efforts include, but are not limited to, government development support, engineering support, product management support, system engineering and logistics support, and travel for the H-53 program.					
FY 2024 OCO Plans:					



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604212N / Other Helicopter Development		<b>Project (Number/Name)</b> 1109 / CH/MH-53		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease of \$0.196 million from FY 2023 to FY 2024 due to decreased avionics and survivability activities.						
<b>Accomplishments/Planned Programs Subtotals</b>		2.838	3.657	2.604	0.000	2.604
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>
• APN/0528: H-53 Series	108.415	40.151	41.414	-	41.414	44.637
						<b>FY 2026</b>
						44.903
						<b>FY 2027</b>
						163.170
						<b>FY 2028</b>
						169.676
						<b>Cost To Complete</b>
						Continuing
						<b>Total Cost</b>
						Continuing
<b>Remarks</b> APN-5 funding profile does not include funding designated for the CH-53K aircraft (OSIP 007-19).						
<b>D. Acquisition Strategy</b> This is a non-ACAT program. H-53 RDT&E efforts will focus on trade studies and risk reduction measures to identify candidate survivability, interoperability, safety, avionics, cargo handling, cockpit and other airframe specific improvements to extend the service life.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development				Project (Number/Name) 1109 / CH/MH-53					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC AD : Patuxent River, MD	10.118	0.383	Nov 2021	0.495	Nov 2022	0.490	Nov 2023	-		0.490	Continuing	Continuing	Continuing
Systems Engineering Contract	C/CPFF	Various : Various	4.161	0.310	Feb 2022	0.398	Feb 2023	0.387	Feb 2024	-		0.387	0.000	5.256	4.161
Systems Engineering	WR	Various : Various	5.641	0.141	Nov 2021	0.193	Nov 2022	0.188	Nov 2023	-		0.188	Continuing	Continuing	Continuing
Design and Development	WR	Various : Various	6.518	0.097	Mar 2022	0.121	Mar 2023	0.116	Mar 2024	-		0.116	0.000	6.852	-
Prior Year Prod Dev no longer funded in the FYDP	TBD	TBD : TBD	19.475	0.000		0.000		0.000		-		0.000	0.000	19.475	-
Subtotal			45.913	0.931		1.207		1.181		-		1.181	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Various : Various	19.866	0.100	Mar 2022	0.125	Mar 2023	0.092	Mar 2024	-		0.092	Continuing	Continuing	Continuing
GFE	Various	NAWC AD : Patuxent River, MD	4.421	0.100	Nov 2021	0.124	Nov 2022	0.086	Nov 2023	-		0.086	Continuing	Continuing	Continuing
Subtotal			24.287	0.200		0.249		0.178		-		0.178	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	18.604	1.307	Mar 2022	1.704	Mar 2023	0.885	Mar 2024	-		0.885	Continuing	Continuing	Continuing
Subtotal			18.604	1.307		1.704		0.885		-		0.885	Continuing	Continuing	N/A
Remarks T&E funding is in support of Obsolescence mitigation activities, as well as survivability analyses.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development						Project (Number/Name) 1109 / CH/MH-53			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	14.286	0.325	Nov 2021	0.407	Nov 2022	0.290	Nov 2023	-		0.290	Continuing	Continuing	Continuing
Travel	Various	Various : Various	2.731	0.075	Nov 2021	0.090	Nov 2022	0.070	Nov 2023	-		0.070	Continuing	Continuing	Continuing
Prior Year Mgmt no longer funded in the FYDP	Various	Various : Various	4.674	0.000		0.000		0.000		-		0.000	0.000	4.674	-
Subtotal			21.691	0.400		0.497		0.360		-		0.360	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			110.495	2.838		3.657		2.604		-		2.604	Continuing	Continuing	N/A
Remarks															

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PE 0604212N: *Other Helicopter Development*  
Navy

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development	Project (Number/Name) 1109 / CH/MH-53	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CH/MH-53				
Engineering Milestones: - Obsolescence Issues/Studies	1	2022	4	2028
Engineering Milestones: - Survivability Analysis	1	2022	4	2028
Engineering Milestones: - Legacy P3I Efforts	1	2022	4	2028
Engineering Milestones: - Safety Upgrades	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development				Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3406: Attack and Utility Replacement Aircraft	40.477	44.964	62.353	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	147.794
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

USMC Vertical Take-Off and Landing (VTOL) Family of Systems (FoS) formerly Attack and Utility Replacement Aircraft (AURA) is a United States Marine Corps (USMC) Future Vertical Lift (FVL) initiative addressing vertical lift capability requirements that are feasible and affordable in support of the USMC Warfighter. This is a supporting element of the USMC's Force Design 2030 guidance. USMC VTOL FoS, will provide unmatched strategic, operational, and tactical agility to perform a multitude of missions currently unachievable by any conventionally configured rotorcraft. The USMC VTOL FoS is closely aligned to the OSD-sponsored FVL FoS initiative and will look to leverage any aspects of the Joint Service programs that may benefit the USMC through accelerated development and/or reduced life cycle costs. USMC VTOL FoS will be a force multiplier with superior performance, payload, survivability, agility, endurance, and reliability that enables warfighters to win in a future dynamic battlespace. USMC VTOL FoS will increase the Marine Air Ground Task Force's (MAGTF) capacity of long-range fires and the ability to move cargo and support dispersed expeditionary advanced bases with efforts such as a logistics connector.

USMC VTOL FoS will utilize DOTmLPF-P that will include all facets of a program with particular focus on life-cycle cost reductions through common processes, support equipment, logistic support and component commonality utilizing non-materiel solutions, such as maintenance strategies, training solutions, and infrastructure requirements. The air vehicle will include primary mechanical, electrical, pneumatic, and structural components such as drivetrain, generators, landing gear, hydraulics, controls, seats, etc. The mission subsystems will include all on and off-board components with embedded control software for those components that provide all mission functionality, cockpit displays, cockpit hardware subsystem controllers and interfaces. The architecture will include the fundamental organization of the complete system, the processing method/component(s), the platform software, the operating environment, and the on-aircraft infrastructure to facilitate integration of all subsystems and platform.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded for Design and Prototype Development leading to System Demonstration and includes conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Attack and Utility Replacement Aircraft	44.964	62.353	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
Tasks to be performed may include but are not limited to: Acquisition Program Management functions, Acquisition Documentation, Engineering modeling and analysis, Test and Evaluation planning and development,					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604212N / <i>Other Helicopter Development</i>		<b>Project (Number/Name)</b> 3406 / <i>Attack and Utility Replacement Aircraft</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>a Model Based System Specification, continued concept development and technology maturation efforts in critical high-risk technology areas, culminating in design trade studies and prototyping on associated systems. Analytical approaches employed by USMC VTOL FoS will ensure a comprehensive look at USMC capability gaps, across aviation platforms, in order to quickly and efficiently address Fleet needs, agnostic to individual materiel solutions. Concept Development and Technology Maturation efforts will include but not be limited to studies, virtual simulation, conceptual design, prototyping of VTOL FoS Air Vehicles, Avionics, Propulsion and Dynamics, Communications and Navigation, Weapons and Fire Control, Human Systems Integration, Survivability and Vulnerability, Missions and Missions Systems Management, Reliability and Maintainability, Training, Logistics, Sensor, Pilotage and Targeting Systems, VMS/Flight Control, Integrated Digital Environment Development, Digital Engineering, Autonomy, Crewed/Uncrewed Systems, and Software/Hardware architecture. Support for these efforts will come from Government, Industry and academia such as Naval Research Labs, DARPA, Georgia Tech Research Institute, Johns Hopkins Applied Physics Lab, Pennsylvania State University Applied Research Lab, and various industry partners. Early collaboration with industry will advance technologies in the area of Modular Open Systems Approach (MOSA) to systems architectures, knowledge gains in the execution and adoption of Model Based Systems Engineering (MBSE) that can reduce timelines for engineering endeavors over traditional systems engineering approaches, and reduce risk in key technology areas, such as weapons carriage and employment that will be vital for the success of the USMC VTOL FoS.</p> <p><b><i>FY 2024 Base Plans:</i></b> N/A</p> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Funds decrease from FY 2023 to FY 2024 due to transfer of effort to new PE 0604212M beginning in FY 2024.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		44.964	62.353	0.000	0.000	0.000
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development	Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft

D. Acquisition Strategy

The Analysis of Alternatives (AoA) was initiated in 3QFY2017 to begin the assessment of the technical feasibility, operational feasibility, technical risk, and affordability of potential solutions. The AoA was completed in FY2019 resulting in OSD Sufficiency. In FY 2021, acquisition and requirements documentation refinement continued. MBSE BAAs awarded and execution progressed, allowing the Program to gain insight alongside Industry in implementing Digital Engineering for systems design. In FY 2022, requirements analysis and document generation continued and multiple MOSA OTAs were awarded. Reductions in the technical risk associated with the Program justifies a direct Milestone B entry. In FY 2023, MOSA OTA execution will continue, multiple Weapons OTA awards will occur, a VTOL FoS CDD will be routed for MROC approval, and concept development and technology maturation efforts will continue.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development					Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Industry Technology Collaboration	C/CPFF	Various : Various	0.000	19.246	Nov 2021	19.234	Dec 2022	0.000		-		0.000	0.000	38.480	38.480
Joint All Domain Operations (JADO)/TAC Demo	C/CPFF	Various : Various	0.000	7.345	Nov 2021	10.019	Nov 2022	0.000		-		0.000	0.000	17.364	17.364
Studies and Analysis	C/CPFF	Various : Various	4.677	4.866	Nov 2021	0.000		0.000		-		0.000	0.000	9.543	9.543
Concept Development and Technology Maturation (CDTM)	C/CPFF	Various : Various	0.000	0.000		22.000	Dec 2022	0.000		-		0.000	0.000	22.000	22.000
Subtotal			4.677	31.457		51.253		0.000		-		0.000	0.000	87.387	N/A
Remarks															
Funds decrease from FY 2023 to FY 2024 due to transfer of effort to new PE 0604212M beginning in FY 2024.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCAD : Patuxent River, MD	12.366	6.085	Nov 2021	6.050	Nov 2022	0.000		-		0.000	0.000	24.501	-
Development Support	WR	Various : Various	7.086	3.366	Dec 2021	2.900	Dec 2022	0.000		-		0.000	0.000	13.352	-
Subtotal			19.452	9.451		8.950		0.000		-		0.000	0.000	37.853	N/A
Remarks															
Funds decrease from FY 2023 to FY 2024 due to transfer of effort to new PE 0604212M beginning in FY 2024.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	Various : Various	0.251	0.350	Nov 2021	0.500	Nov 2022	0.000		-		0.000	0.000	1.101	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development				Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	Various : Various	4.551	0.000		0.000		0.000		-		0.000	0.000	4.551	4.551
Subtotal			4.802	0.350		0.500		0.000		-		0.000	0.000	5.652	N/A
Remarks Funds decrease from FY 2023 to FY 2024 due to transfer of effort to new PE 0604212M beginning in FY 2024.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	Various : Various	5.596	2.669	Nov 2021	0.500	Nov 2022	0.000		-		0.000	0.000	8.765	8.765
Program Management Support	WR	Various : Various	5.195	1.037	Nov 2021	1.100	Nov 2022	0.000		-		0.000	0.000	7.332	-
Travel	WR	NAVAIR : Patuxent River, MD	0.755	0.000		0.050	Oct 2022	0.000		-		0.000	0.000	0.805	-
Subtotal			11.546	3.706		1.650		0.000		-		0.000	0.000	16.902	N/A
Remarks Funds decrease from FY 2023 to FY 2024 due to transfer of effort to new PE 0604212M beginning in FY 2024.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			40.477	44.964		62.353		0.000		-		0.000	0.000	147.794	N/A
Remarks															

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PE 0604212N: *Other Helicopter Development*  
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212N / Other Helicopter Development	Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Vertical Take Off and Landing Family of Systems</b>				
Systems Development: Concept Development and Tech Maturation: Concept Development and Tech Maturation	1	2023	4	2023
Systems Development: MBSE BAA: MBSE BAA	1	2022	3	2022
Systems Development: Weapons OTA: Weapons OTA	1	2023	4	2023
Systems Development: MOSA OTA: MOSA OTA	2	2022	4	2023
Systems Development: UARC Studies and Analysis: UARC Studies and Analysis	1	2022	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0604214M / AV-8B Aircraft - Engine Dev							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	568.457	10.037	9.205	8.263	-	8.263	8.789	9.079	9.829	10.027	Continuing	Continuing
0652: AV-8B	568.457	10.037	9.205	8.263	-	8.263	8.789	9.079	9.829	10.027	Continuing	Continuing

## A. Mission Description and Budget Item Justification

The program provides for AV-8B Design, Development, Integration, and Test of various platform improvements such as: Engine Life Management Program (ELMP), Escape Systems, Joint Mission Planning System (JMPS), and Block upgrades to various mission systems and software Operational Flight Programs (OFPs) to include JMPS integration, avionics and communications systems, navigation equipment, weapons carriage and countermeasures, and studies and analyses of future capability expansion and unique flight testing. The program also provides for addressing obsolescence and readiness of avionics structural, hydraulic, electrical, environmental and mechanical systems to include engineering activities for development and design to support aircraft safety flight clearances, concept explorations, responses to evolving threats and developments to support Program Objective Memorandum.

The program's Evolutionary Acquisition Strategy includes Design, Development, Integration, and Test activities under the consolidated effort of Block Developments which includes H7.0, H7.2, H7.3, H7.4 and follow-on block upgrades. The H7.0 block upgrade implemented full Link 16 capability, provided weapon improvements and integrated AIM-9X and Joint Standoff Weapon (JSOW). Link 16 is a Top 10 item in the Operational Advisory and Systems Safety Groups. Continued AV-8B combat relevance and ability to respond to evolving and emergent threats through end of service is critical to the Marine Air-Ground Task Force's ability to generate aviation combat power throughout the transition to F-35B. J-series, K-series, Tactical Targeting Network Technology, and other emerging datalink technology messages, as well as compliance with crypto modernization requirements and ability to use GPS-modernized weapons, are required to support current and future mission threats. Linked performance on par with current tactical platforms as well as design to communicate with F-35 is required for the AV-8B to remain tactically relevant to transition. H7.0 also included integration and test of weapons and sensors such as, but not limited to, AIM-9X, JSOW and Litening OFP V4. H7.2, H7.3, and H7.4 will continue to build upon the evolutionary acquisition strategy for OFPs and will improve pilot situational awareness, make pilot interface and weapon selection, and Link16 functionality improvements via OFP and Mission Planning updates, and will integrate required Display Computer processing improvements to enable these functionalities. OFP and integration improvements, to include continued use of current weapons as they are upgraded to modernized GPS capability, is vital to the Harrier's continued combat relevance to the Marine Expeditionary Unit and Global Response Force Combatant Commanders.

Additionally, software integration and stores expansion testing will be required for systems to include) Unique Weapons, survivability and Countermeasures, Second Generation Anti-jam Tactical UHF Radio for NATO (SATURN) communication waveform and associated radio and communication systems upgrades, Advanced Precision Kill Weapons System (APKWS), JDAM, AIM-9X, AIM-120, ALE-43, survivability upgrades, standoff weapons such as JSOW and Joint Air-to-Ground Missile (JAGM) as well as test of emergent tactical requirements, and test of crypto modernization compliance. AV-8B funding also supports peculiar flight test requirements to include weapons integration/carriage and avionics, software/firmware upgrades, and avionics hardware component redesign activity. Studies and analyses will be conducted on systems such as survivability systems, SATURN Communications and associated radio and communication systems upgrades, and Beyond Line of Sight (BLOS) to assess feasibility of integrating on the AV-8B. The program also provides for the AV-8B air vehicle's sustained mission availability, and safe and reliable operational readiness until end of service. Sustainment of the aircraft structure, subsystems and software requires component and system analyses, technical planning, identification, prioritization and diagnosis of emergent problems and the allocation of resources for the development, testing, and flight clearance of engineering solutions

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604214M / <i>AV-8B Aircraft - Engine Dev</i>
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in the areas of flight, crew safety and escape systems and structural integrity, obsolescence, systems reliability and maintainability, inventory preservation, alternative mission development or other emergent material or equipment conditions affecting AV-8B systems readiness. Activities include research/analysis for system safety deficiency corrections, fuel system safety improvements, structural analyses, monitoring and integrity analysis, component compatibility, component and materials obsolescence analyses and mitigation development, explorations for aging equipment, reliability improvement analyses and design developments. The ELMP is a comprehensive plan to increase and maintain safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and accessories. The program will accomplish this mission by conducting Engineering Project Description investigations to develop engineering solutions that address emergent safety, obsolescence, foreign object debris detection and prevention, fatigue life and maintenance issues.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	10.146	9.205	8.358	-	8.358
Current President's Budget	10.037	9.205	8.263	-	8.263
Total Adjustments	-0.109	0.000	-0.095	-	-0.095
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.109	0.000			
• Program Adjustments	0.000	0.000	-0.167	-	-0.167
• Rate/Misc Adjustments	0.000	0.000	0.072	-	0.072

**Change Summary Explanation**

The decrease in FY24 funding is due to decreased requirement for Engine Component Improvement Program (CIP) efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604214M / AV-8B Aircraft - Engine Dev				Project (Number/Name) 0652 / AV-8B			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0652: AV-8B	568.457	10.037	9.205	8.263	-	8.263	8.789	9.079	9.829	10.027	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program provides for AV-8B Design, Development, Integration and Test of the following improvements: Engine Life Management Program (ELMP), Operational Flight Programs (OFPs) and Avionics/Weapons Integration, Escape System, readiness and obsolescence management. The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and Gas Turbine Starter (GTS), as well as other critical engine components. The Program Office will accomplish this mission through the Component Improvement Program (CIP), which entails Engineering Project Description investigations to derive safety and reliability improvements to the engine and engine components. H7.2, H7.3, and H7.4 will continue to build upon the evolutionary acquisition strategy for OFPs and will improve pilot situational awareness, make pilot interface and weapon selection, and Link16 functionality improvements via OFP and Mission Planning updates, and will integrate required Display Computer processing improvements to enable these functionalities. OFP and integration improvements, to include continued use of current weapons as they are upgraded to modernized GPS capability, is vital to the Harrier's continued combat relevance to the Marine Expeditionary Unit and Global Response Force Combatant Commanders. Other efforts include compliance with crypto modernization requirements, testing compatibility with GPS-modernized weapons, peculiar integration and flight test requirements such as weapons and countermeasures OFP updates, weapons integration and testing, sensors, and countermeasures integration and stores expansion to include APKWS, , Beyond-Line-of-Sight (BLOS) communications, SATURN Communication Waveform and any associated radio/communication systems upgrades, AIM-9X, ALE-43, standoff weapons such as JSOW, and unique flight test, study and component redesign efforts of other avionics, sensors, structural components, aircraft subsystems, weapons systems, or emergent tactical requirements as they arise. Efforts also include engineering activities for development, design and test to support aircraft safety, flight clearance and concept exploration for resolution of emergent safety, service life, escape systems, compatibility, obsolescence, and readiness issues as well as response to fleet urgent operational requirements.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Operational Flight Program (OFP) and Aircraft/Avionics/Subsystem/Weapons Systems Development and Integration	9.219	7.542	7.463	0.000	7.463
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Develop, integrate, and test aircraft OFP updates, weapons and countermeasures systems OFP updates, mission planning updates, Litening Pod software updates/capability expansions, support aircraft avionics development efforts, integrate and test unique weapons systems, sensors, and countermeasures such as AIM-120C, AIM-9X variants, APKWS, BLOS Communications, Crypto Modernization activities, SATURN communication waveform capabilities and associated radio/communication systems upgrades, avionics component obsolescence redesign efforts, survivability upgrades, ALE-43, standoff weapons such as JSOW and other weapons/avionics and sensor systems, avionics component redesign efforts and emergent tactical requirements as they arise, perform stores expansion testing, crypto modernization compatibility testing/					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604214M / AV-8B Aircraft - Engine Dev		Project (Number/Name) 0652 / AV-8B		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
integration, GPS-modernization compatibility testing/integration and conduct Digital Interoperability (to include Link 16) integration, and test efforts. Develop solutions to obsolescence concerns to improve safety, readiness, structural integrity and systems reliability of the AV-8B aircraft.						
<b>FY 2023 Plans:</b> Extension of AV-8B end of service date to 2028 requires continued testing and integration efforts, as well as research and innovation studies for airframe, avionics, and subsystem engineering efforts to improve safety and reliability, and mitigate obsolescence issues. Funds will provide for efforts on the follow-on OFP software upgrade (H7.2/H7.3 and beyond), future capability studies and analysis efforts, efforts required to respond to evolving and emerging threats, peculiar flight test requirements to include various required weapons/ sensors/ countermeasures/crypto modernization/GPS modernization compatibility testing/stores expansion integration and testing such weapons/stores updates, ALE-43, SATURN, associated radio and communication system upgrades and other weapons/avionics systems as they arise. Additionally, funds will provide for continued research and innovation studies for airframe and subsystem safety and reliability improvements and engineering change proposals (ECPs). The program will continue to address known, predicted, and emergent obsolescence issues, and will continue fatigue life tracking analyses and algorithm update development. Fuselage fatigue life assessment will continue to ensure safe operation of the aircraft through the end of service. Systems engineering efforts will support ongoing and emergent analysis and design/development/test efforts required to address systems safety, structural integrity, obsolescence, performance and readiness issues, including efforts required to respond to evolving and emergent threats, mission systems, communication systems, navigation equipment, weapons carriage and countermeasures, structural, hydraulic, electrical, environmental, and mechanical systems.						
<b>FY 2024 Base Plans:</b> Extension of AV-8B end of service date to 2028 requires continued testing and integration efforts, as well as research and innovation studies for airframe, avionics, and subsystem engineering efforts to improve safety and reliability, and mitigate obsolescence issues. Funds will provide for efforts on the follow-on OFP software upgrade (H7.2/H7.3), future capability studies and analysis efforts, efforts required to respond to evolving and emerging threats, peculiar flight test requirements to include various required weapons/ sensors/ countermeasures/crypto modernization/GPS modernization compatibility testing/stores expansion integration and testing such weapons/stores updates, associated radio and communication system upgrades and other weapons/avionics systems as they arise. The program will continue to address known, predicted, and emergent obsolescence issues, and will continue fatigue life tracking analyses and algorithm update development. Fuselage fatigue life assessment will continue to ensure safe operation of the aircraft through the end of						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604214M / AV-8B Aircraft - Engine Dev	Project (Number/Name) 0652 / AV-8B			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
service. Systems engineering efforts will support ongoing and emergent analysis and design/development/test efforts required to address systems safety, structural integrity, obsolescence, performance and readiness issues, including efforts required to respond to evolving and emergent threats, mission systems, communication systems, navigation equipment, weapons carriage and countermeasures, structural, hydraulic, electrical, environmental, and mechanical systems.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to decreased requirement for Government engineering support.						
<b>Title:</b> F402-RR-408 Engine Safety and Reliability Enhancements  <b>Articles:</b>  <b>Description:</b> Improve Safety and Reliability of the F402-RR-408 Engine and accessories for the AV-8B Harrier.  <b>FY 2023 Plans:</b> The engineering CIP will conduct engineering investigations to develop ECPs for improvements and design solutions to correct deficiencies resulting from safety, obsolescence and structural fatigue for the engine and engine accessories, to maintain readiness and to meet mission requirements. Conduct research and innovation studies for FOD mitigation and other operational environment changes to improve engine safety and reliability.  <b>FY 2024 Base Plans:</b> The engineering CIP will conduct engineering investigations to develop ECPs for improvements and design solutions to correct deficiencies resulting from safety, obsolescence and structural fatigue for the engine and engine accessories, to maintain readiness and to meet mission requirements. Conduct research and innovation studies for FOD mitigation and other operational environment changes to improve engine safety and reliability.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to fewer Component Improvement Program (CIP) upgrades required.		0.818 -	1.663 -	0.800 -	0.000 -	0.800 -
Accomplishments/Planned Programs Subtotals		10.037	9.205	8.263	0.000	8.263

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy								<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604214M / AV-8B Aircraft - Engine Dev				<b>Project (Number/Name)</b> 0652 / AV-8B		

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN/0514: AV-8 Series	14.626	26.657	22.829	-	22.829	23.580	11.096	12.027	12.552	0.000	1,636.169

**Remarks**

**D. Acquisition Strategy**

Engineering efforts focused on obsolescence mitigation and readiness improvements ensure the maximum reliability and readiness levels for the AV-8B Type/ Model/Series by maintaining post production engineering and logistic support with the Original Equipment Manufacturers (OEMs). The program tracks readiness degraders, identifies and addresses obsolescence for all aircraft and avionics systems and subsystems, and identifies and addresses emerging in-service material developments related to ease of maintenance, safety, airframe life management and improved performance. The multi-disciplined team of program management, engineering, logistics, and financial personnel develop Engineering Change Proposals (ECPs), Rapid Action Minor Engineering Changes, Interim Rapid Action Changes to publications, trainer and support equipment modifications necessary to maintain aircraft reliability, readiness, and safety. The program also supports the constant improvement and analysis of fleet Fatigue Life Expended data to maximize aircraft structural life and to support the NAVAIR annual Structural Appraisal of Fatigue Effects report required by the Office of the Chief of Naval Operations (OPNAV), and structural fatigue life assessments to assure continued safe operation of the aircraft through the end of service date. Funding for the ELMP will be placed on a cost-type contract to Rolls-Royce to address safety of flight issues, top readiness degraders, engine removal and mission failure drivers in order to improve Fleet readiness and reduce cost of ownership of the F402-RR-408 and accessories. It is also developed to assess life management program issues and design fixes for any service revealed deficiencies. The program's Evolutionary Acquisition Strategy includes Design, Development, Integration, and Test activity under the consolidated effort of Block Developments: H2.0, H4.0, H5.0, H6.0, H6.1., H6.2, H7.0, and following OFPs (H7.3/ H7.4 and beyond). H7.0 OFP will provide the AV-8B integration of additional required Link 16 J-series messages, integration of AIM-9X and JSOW weapons, and APKWS integration updates. H7.0 will also be accomplished in conjunction with the Common Avionics Program and will integrate ADS-B (out), Mode 5, and Mode S capabilities. Follow on OFPs will address software improvements to enhance performance and usability of the aircraft software, and improvements to the display computer processing. Peculiar flight test efforts to include weapons, subsystem, avionics, survivability, and sensor integration such as AIM-120, AIM-9X, APKWS, ALE-43, ALR-67, standoff weapons such as JSOW, crypto modernization compliance integration/testing, GPS modernization compatibility, SATURN communication waveform and associated radio/communication systems upgrades, and other avionics/weapons and sensor systems and emergent tactical requirements and avionics component redesign actions as they arise. Studies and analyses will be accomplished to assess future capability expansion feasibility and integration concepts to include weapons expansion, BLOS communications, SATURN communication waveform and associated radio/ communication systems upgrades, survivability upgrades, and other potential avionics, subsystem, weapons, or software capabilities as they arise.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604214M / AV-8B Aircraft - Engine Dev	<b>Project (Number/Name)</b> 0652 / AV-8B
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - ELMP	C/CPFF	Rolls-Royce PLC : Bristol, GB	40.805	0.747	Dec 2021	1.113	Dec 2022	0.800	Dec 2023	-		0.800	Continuing	Continuing	Continuing
Primary Hardware Development - ELMP	WR	FRC E : Cherry Point, NC	0.116	0.071	Dec 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Primary Hardware Development - OFP	WR	NAWCWD : China Lake, CA	100.751	2.767	Dec 2021	0.000		0.000		-		0.000	0.000	103.518	103.518
Systems Engineering - OFP	C/CPFF	Boeing : St. Louis, MO	39.108	0.135	Apr 2022	0.000		0.000		-		0.000	0.000	39.243	39.243
Systems Engineering - OFP	WR	NAWCWD : China Lake, CA	4.189	0.091	Nov 2021	0.750	Nov 2022	0.789	Nov 2023	-		0.789	Continuing	Continuing	Continuing
Systems Engineering - OFP	WR	NAWCAD : Patuxent River, MD	13.305	0.400	Nov 2021	0.135	Nov 2022	0.000		-		0.000	0.000	13.840	13.840
Systems Engineering - OFP	WR	NAWCWD : Point Mugu	0.952	0.000		0.053	Nov 2022	0.054	Nov 2023	-		0.054	Continuing	Continuing	Continuing
Systems Engineering - OFP	C/CPFF	Wyle Labs : Patuxent River, MD	0.384	0.101	May 2022	0.000		0.000		-		0.000	0.000	0.485	0.485
Systems Engineering - OFP	C/CPFF	TBD : TBD	0.000	0.000		0.100	Apr 2023	0.100	Apr 2024	-		0.100	Continuing	Continuing	Continuing
Prior year cost no longer funded in the FYDP	Various	Various : Various	72.931	0.000		0.000		0.000		-		0.000	0.000	72.931	72.931
<b>Subtotal</b>			272.541	4.312		2.151		1.743		-		1.743	Continuing	Continuing	N/A

**Remarks**

Line 1: Decrease from FY23 to FY24 due to fewer Component Improvement Program (CIP) upgrades required.

Line 5: Increase from FY23 to FY24 due to increased development of software updates.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analysis - OFP	C/CPFF	Boeing : St Louis, MO	8.857	0.000		0.102	Mar 2023	0.104	Mar 2024	-		0.104	0.000	9.063	9.063

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604214M / AV-8B Aircraft - Engine Dev				Project (Number/Name) 0652 / AV-8B					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year cost no longer funded in the FYDP	Various	Various : Various	76.050	0.000		0.000		0.000		-		0.000	0.000	76.050	76.050
Subtotal			84.907	0.000		0.102		0.104		-		0.104	0.000	85.113	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake, CA	40.267	3.515	Jan 2022	4.626	Dec 2022	4.668	Dec 2023	-		4.668	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	COMOPTEVFOR : Norfolk, VA	26.021	0.358	Jan 2022	0.287	Jan 2023	0.293	Jan 2024	-		0.293	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	Eglin AFB : Eglin AFB, FL	0.080	0.008	Jan 2022	0.000		0.000		-		0.000	0.000	0.088	0.088
Operational Test & Evaluation (OT&E)	C/CPFF	Delex Systems : Herndon, VA	0.000	0.000		0.113	Jan 2023	0.052	Jan 2024	-		0.052	0.000	0.165	0.165
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	69.708	0.000		0.000		0.000		-		0.000	0.000	69.708	69.708
Subtotal			136.076	3.881		5.026		5.013		-		5.013	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support - OFP	WR	NAWCWD : China Lake	0.136	0.200	Nov 2021	0.000		0.000		-		0.000	0.000	0.336	0.336
Government Engineering Support - OFP	WR	NAWCAD : Patuxent River, MD	9.780	1.614	Nov 2021	1.876	Nov 2022	1.353	Nov 2023	-		1.353	Continuing	Continuing	Continuing
Travel	WR	Various : Various	2.279	0.030	Oct 2021	0.050	Oct 2022	0.050	Oct 2023	-		0.050	Continuing	Continuing	Continuing
Prior year cost no longer funded in the FYDP	Various	Various : Various	62.738	0.000		0.000		0.000		-		0.000	0.000	62.738	62.738

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604214M / AV-8B Aircraft - Engine Dev				Project (Number/Name) 0652 / AV-8B					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			74.933	1.844		1.926		1.403		-		1.403	Continuing	Continuing	N/A
Remarks															
Line 21: Decrease from FY23 to FY24 due to decreased requirement for Government engineering support.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			568.457	10.037		9.205		8.263		-		8.263	Continuing	Continuing	N/A
Remarks															



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604214M / AV-8B Aircraft - Engine Dev	<b>Project (Number/Name)</b> 0652 / AV-8B	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AV-8B AIRCRAFT - ENGINE DEV</b>				
Acquisition Milestones: H7.0 IOC	1	2023	1	2023
Acquisition Milestones: H7.2 IOC	4	2023	4	2023
Acquisition Milestones: H7.3 IOC	4	2024	4	2024
Acquisition Milestones: H7.4 IOC	4	2025	4	2025
Systems Development: Hardware Development: Obsolescence Mitigation Development	1	2022	4	2028
Systems Development: Software Development: H7.2 Development	1	2022	4	2022
Systems Development: Software Development: H7.3 Development	4	2022	1	2024
Systems Development: Software Development: H7.4 Development	4	2023	4	2025
Systems Development: Software Development: Fatigue Life Expended Development	1	2022	4	2028
Test & Evaluation: Technical Evaluation: H7.0 DT/OT (IT)	1	2022	4	2022
Test & Evaluation: Technical Evaluation: H7.2 DT/OT (IT)	1	2022	3	2023
Test & Evaluation: Technical Evaluation: H7.3 DT/OT (IT)	2	2023	4	2024
Test & Evaluation: Technical Evaluation: H7.4 DT/OT (IT)	4	2023	1	2025
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY22	1	2022	1	2022
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY23	1	2023	1	2023
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY24	1	2024	1	2024
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY25	1	2025	1	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604214M / AV-8B Aircraft - Engine Dev	Project (Number/Name) 0652 / AV-8B		
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY26	1	2026	1	2026
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY27	1	2027	1	2027
Deliveries: H7.0 S/W Delivery	1	2023	1	2023
Deliveries: H7.2 S/W Delivery	4	2023	4	2023
Deliveries: H7.3 S/W Delivery	4	2024	4	2024
Deliveries: H7.4 S/W Delivery	4	2025	4	2025



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0604215N / <i>Standards Development</i>							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	30.504	4.066	3.766	4.039	-	4.039	4.765	4.611	4.703	4.797	Continuing	Continuing
1857: <i>Calibration Standards</i>	30.504	4.066	3.766	4.039	-	4.039	4.765	4.611	4.703	4.797	Continuing	Continuing

**Note**

Starting in FY17 the Common Helicopters (PU 2312) and Stores Planning and Weaponengineering Module (PU 2311) moved to Mission Planning PE (0605215N).  
Starting in FY17 the JT Service/NV Std Avionics CP/SB (PU 0572) PE (0604215N) moved to a new Common Avionics PE (0605217N).

**A. Mission Description and Budget Item Justification**

Navy-wide program which addresses Metrology related RDT&E issues for navy weapon systems, shipboard platforms, Naval Air, and Fleet Ground Marines. It supports development of calibration standards (equipment, procedures and technical data) required to resolve METCAL related safety, obsolescence, new and emerging technology support and cost reduction issues. It funds Navy unique and lead service responsibilities in DoD and Joint Services Metrology Research Programs to develop calibration solutions. The line supports development of measurement requirements to verify performance of all test systems used to validate the operation of Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology to calibrate, sustain and ensure performance accuracy. This program also provides benefits and efficiencies in a joint collaborative environment within the Tri-Services. Projects are identified and defined so that they will meet the universal requirement. Development efforts are integrated in order to achieve the common capabilities required at minimum cost. This is also a regular and common business practice within the Navy Metrology Community where R&D efforts are communicated and integrated into the multiple testing and Monitoring Systems. This is done in support of Program Managers, Sponsors, and Principle Executive officers. As a result, common requirements are established, duplication of efforts are eliminated, and best value, high quality METCAL products are produced for the Navy.

**JUSTIFICATION FOR BUDGET ACTIVITY:****FY2023 base plans**

(\$1.019) Continue development of Fiber Optic Return Loss Standards Phase II of (1) Multi-mode calibration hardware standards in electro optical (Multi-mode) measurement technology to support shipboard readiness of weapon system communication to missile launch systems, combat Flight operations and ground combat operations. Continue development of (1) calibration standard for LiDAR 3D Scanners to support shipboard operational readiness while reducing cost and turnaround time for critical ship building areas; such as installation, design, planning, maintenance and damage assessments. Continue development on (1) for National Low Level Laser Radiometer Calibration Facility, in support of Operational Readiness for Laser rangefinders and designators. Continue development on (2) the RPPM Transfer Training and the High Energy Laser (HEL) Beam Profiler in support HEL testing and operational evaluations assessment.

(\$0.870) Continue development of (1) calibration hardware standard in electrical/electronic measurement technology to support combat/operational readiness for submarine periscopes magnetic locks and aircraft tail hook non-destructive testing. Continue development of (1) Coaxial Microcalorimeter Power calibration standards in support of Navy's ability to detect adversarial threats and to counteract adversarial electronic countermeasures.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		PE 0604215N I Standards Development				
(\$1.063) Continue development of (3) calibration hardware standards in Chemical/Biological technology for measuring Residual Solvent Vapors in support of Divers Life Support Systems (DLSS). Begin development of (1) Chemical/Biological Biodetector (bio-aerosol detector) Calibration Standard in support of Navy shipboard and shore activities Joint Biological Technical Detection System (JBTDS) for real-time bioaerosols monitoring to defend against biological agent threats.						
(\$0.502) Continue development of (1) Measurement Uncertainty Automation (Phase III) measurement in support of component equipment operational readiness. Continue development of (1) calibration standards in analytical and benchtop metrology focusing in support of metrology benchtop automated physical mechanical calibration methods support equipment operational readiness for both for shore, air and sea-based operations.						
(\$0.312) Continue development of NIST Traceable PNA E-Cal Calibrations for NPSL of (1) calibration hardware standard in Microwave/millimeter-wave technology in support of Vector Network Analyzers to test and repair Weapon Replaceable Assemblies (WRAs) for F-18/P-3/EP-3-E2C/D, EA-6B and P8 aircraft.						
FY 2024 Base Plans:						
(\$0.771) Continue the development of (1) calibration hardware standard in electrical/electronic measurement technology to support combat/operational readiness for submarine periscopes magnetic locks and aircraft tail hook non-destructive testing.						
(\$0.958) Continue development (1) calibration hardware standard in Chemical/Biological technology for measuring Residual Solvent Vapors in support of Divers Life Support Systems (DLSS). Continue development of (1) Chemical/Biological Biodetector (bio-aerosol detector) Calibration Standard in support of Navy shipboard and shore activities Joint Biological Technical Detection System (JBTDS) for real-time bioaerosols monitoring to defend against biological agent threats.						
(\$1.449) Continue development and transition of (1) calibration standards in analytical and benchtop metrology focusing in support of metrology benchtop automated physical mechanical calibration methods support equipment operational readiness for both for shore, air, and sea-based operations. Begin development of (1) RACE Phase V (Extend Calibration Spectrum and Optical Character and Scale Recognition Capabilities) in support of Shipboard operational Readiness.						
(\$0.478) Continue the development and transition of NIST Traceable PNA E-Cal Calibrations for NPSL of (1) Microwave/millimeter-wave calibration hardware standard in support of Vector Network Analyzers to test and repair Weapon Replaceable Assemblies (WRAs) for F-18/P-3/EP-3-E2C/D, EA-6B and P8 aircraft.						
(\$0.383) Begin Development of (1) Electro/Optical calibration standard focusing on Night Vision Telescope Auto Focus Capability in support of aircraft Safety of Flight night operations.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		4.082	3.766	4.860	-	4.860
Current President's Budget		4.066	3.766	4.039	-	4.039
Total Adjustments		-0.016	0.000	-0.821	-	-0.821
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.016	0.000			
• Program Adjustments		0.000	0.000	-0.834	-	-0.834
• Rate/Misc Adjustments		0.000	0.000	0.013	-	0.013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604215N / Standards Development
<p><b><u>Change Summary Explanation</u></b></p> <p>1857: This affects manpower resources and the ability to move the work effort forward to meet Fleet capability expectations. New capability from projects will be pushed beyond FY24 making it difficult to support urgent emerging operational initiatives that are significantly changing in the Fleet Support environment. The Quantum Based Measurement Standards project in support of Temperature Metrology systems will be delayed and pushed into another year of development and transition. The Analytical Metrology Analytical Metrology standard Analytical Metrology Capabilities for Interval Analysis using Multivariable Calibration Intervals project will be delayed and start in FY25 vice FY24. In addition, both the Electro Optics for Advanced Military Technology Measurement Standards Requirements and the Analytical standard for Joint Interval Analysis will be affected in the out year planning. This will cause a backlog of standards requirements development capabilities essential to meet critical Navy service requirements and sustainment, which can no longer be commercially supported. Reduction in Project capability transition will affect Fleet operational and combat readiness capability, safety of flight operations, shipboard operational readiness, and Treaty Compliance. All of which impacts initiatives to maintain technical superiority.</p> <p>0572: Tactical Communications: Title corrected from Joint Precision Approach Landing System Software (S/W) Integration to Operation Flight Plan S/W Integration.</p> <p>Ground Proximity Warning Systems/Terrain Awareness Warning System (GPWS/TAWS II): H-60 TAWS II Software Development extended duration from 4Q/15 through 4Q/16 based on projected platform integration schedule.</p> <p>Military Flight Quality Assurance: Test and Evaluation, MH-53R/S, M/CH-53E, AH-1Z, UH-1Y, Phase 2 Test extended from 3Q/15 to 4Q/15 due to longer testing required for a number of defects found. Phase 2 Test Readiness Review moved from 1Q/15 to 3Q/15 due to integration test took longer than planned due to number of defects found. Deliveries for H-60R/S, CH-53E, AH-1Z and UH-1Y reflect new date of 2Q/15 to align with F/A-18 procurement order.</p> <p>Mid Air Collision Avoidance Capability: Re-planned FY16-FY21 program as a result of the Business Case Analysis to properly aligned program. Material Development Decision/Acquisition Strategy Review (MDD/ASR) moved from 2Q/16 to 1Q/17. Added Capability Development Document (CDD) Draft added in 4Q16. Added Requirements Development from 1Q/16 to 4Q/16.</p> <p>Starting in FY17 the JT Service/NV Std Avionics CP/SB (PU 0572) PE (0604215N) moved to a new Common Avionics PE (0605217N).</p> <p>2311: WASP V4.0 Systems Development start was delayed from 4Q16 to 2017 and will be displayed under PE 0605215N.</p> <p>WASP V3.2 IOC was delayed from 1Q16 to 3Q16 due to the asynchronous release process and requirement for a new build prior to IOC.</p> <p>FY17 and out schedule is included in the Mission Planning PE 0605215N.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604215N / Standards Development	
<div>2312: Common Helicopters schedule FY17 and out is included in Mission Planning PE 0605215N.</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604215N / Standards Development				Project (Number/Name) 1857 / Calibration Standards			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1857: Calibration Standards	30.504	4.066	3.766	4.039	-	4.039	4.765	4.611	4.703	4.797	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Navy-wide program which addresses Metrology related RDT&E issues for navy weapon systems, shipboard platforms, Naval Air, and Fleet Ground Marines. It supports development of calibration standards (equipment, procedures and technical data) required to resolve METCAL related safety, obsolescence, new and emerging technology support and cost reduction issues. It funds Navy unique and lead service responsibilities in DoD and Joint Services Metrology Research Programs to develop calibration solutions. The line supports development of measurement requirements to verify performance of all test systems used to validate the operation of Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology to calibrate, sustain and ensure performance accuracy. This program also provides benefits and efficiencies in a joint collaborative environment within the Tri-Services. Projects are identified and defined so that they will meet the universal requirement. Development efforts are integrated in order to achieve the common capabilities required at minimum cost. This is also a regular and common business practice within the Navy Metrology Community where R&D efforts are communicated and integrated into the multiple testing and Monitoring Systems. This is done in support of Program Managers, Sponsors, and Principle Executive officers. As a result, common requirements are established, duplication of efforts are eliminated, and best value, high quality METCAL products are produced for the Navy.

**JUSTIFICATION FOR BUDGET ACTIVITY:****FY2023 base plans**

(\$.585) Continue development of Fiber Optic Return Loss Standards Phase II of (1) Multi-mode calibration hardware standards in electro optical (Multi-mode) measurement technology to support shipboard readiness of weapon system communication to missile launch systems, combat Flight operations and ground combat operations. Continue development of (1) calibration standard for LiDAR 3D Scanners to support shipboard operational readiness while reducing cost and turnaround time for critical ship building areas; such as installation, design, planning, maintenance and damage assessments.

(\$1.366) Continue development of (1) calibration hardware standard in electrical/electronic measurement technology to support combat/operational readiness for submarine periscopes magnetic locks and aircraft tail hook non-destructive testing. Continue development of (1) Coaxial Microcalorimeter Power calibration standards in support of Navy's ability to detect adversarial threats and to counteract adversarial electronic countermeasures.

(\$.635) Continue development of (2) calibration hardware standard in Chemical/Biological technology for measuring Residual Solvent Vapors in support of Divers Life Support Systems (DLSS).

(\$.770) Continue development of (1) Measurement Uncertainty Automation (Phase III) measurement in support of component equipment operational readiness. Continue development of (1) calibration standards in analytical and benchtop metrology focusing in support of metrology benchtop automated physical mechanical calibration methods support equipment operational readiness for both for shore, air and sea-based operations.

(\$.410) Continue development of VNA Verification Kit Uncertainty Reduction of (1) calibration hardware standard in Microwave/millimeter-wave technology in support of Vector Network Analyzers to test and repair Weapon Replaceable Assemblies (WRAs) for F-18/P-3/EP-3-E2C/D, EA-6B and P8 aircraft.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604215N / Standards Development	Project (Number/Name) 1857 / Calibration Standards		
The funding decrease from FY22 to FY23 will push out the start of two project capabilities from FY 2023 into FY 2024 as well as affect out-year planning. Night Vision Telescope Auto Focus Capability in electro optical measurement technology in support Night Vision Telescope Auto Focus Capability to maintain Safety of Flight and combat operations (\$.257); and Biodetection (bio-aerosol detector) Calibration standard in support of Combat and shipboard operational readiness for bio threat detection (\$.357).					
FY 2024 Base Plans: (\$.831) Continue and transition the development of (1) calibration hardware standard in electrical/electronic measurement technology to support combat/operational readiness for submarine periscopes magnetic locks and aircraft tail hook non-destructive testing. Begin development of (1) Quantum Based measurement standard in support of DC Voltage TMDE Inventory systems. (\$.719) Continue development and transition (1) calibration hardware standard in Chemical/Biological technology for measuring Residual Solvent Vapors in support of Divers Life Support Systems (DLSS). Begin development of (1) Chemical/Biological Biodetector (bio-aerosol detector) Calibration Standard in support of Navy shipboard and shore activities Joint Biological Technical Detection System (JBTDS) for real-time bioaerosols monitoring to defend against biological agent threats. (\$1.310) Continue development and transition of (1) calibration standards in analytical and benchtop metrology focusing in support of metrology benchtop automated physical mechanical calibration methods support equipment operational readiness for both for shore, air, and sea-based operations. Begin development of (1) Analytical Metrology METBENCH - RACE Phase V Calibration standard in support of Optical Character and Scale Recognition Capabilities. (\$.409) Continue the development and transition of VNA Verification Kit Uncertainty Reduction of (1) Microwave/millimeter-wave calibration hardware standard in support of Vector Network Analyzers to test and repair Weapon Replaceable Assemblies (WRAs) for F-18/P-3/EP-3-E2C/D, EA-6B and P8 aircraft. (\$.313) Begin Development of (1) Electro/Optical calibration standard focusing on Night Vision Telescope Auto Focus Capability in support of aircraft Safety of Flight night operations (\$.268) Begin development of (1) Physical/Mechanical Quantum Based Measurement Standards in support of Temperature Metrology systems referenced thermometer based on dual TCVCO architecture					
FY2024 Budget Line Decrease: Budget line reduction of \$0.827 reduces funding to all nine projects in FY24. This affects manpower resources and the ability to move the work effort forward to meet Fleet capability expectations. New capability from projects will be pushed beyond FY24 making it difficult to support urgent emerging operational initiatives that are significantly changing in the Fleet Support environment. The Quantum Based Measurement Standards project in support of Temperature Metrology systems will be delayed and pushed into another year of development and transition. The Analytical Metrology Analytical Metrology standard Analytical Metrology Capabilities for Interval Analysis using Multivariable Calibration Intervals project will be delayed and start in FY25 vice FY24. In addition, both the Electro Optics for Advanced Military Technology Measurement Standards Requirements and the Analytical standard for Joint Interval Analysis will be affected in the out year planning. This will cause a backlog of standards requirements development capabilities essential to meet critical Navy service requirements and sustainment, which can no longer be commercially supported. Reduction in Project capability transition will affect Fleet operational and combat readiness capability, safety of flight operations, shipboard operational readiness, and Treaty Compliance. All of which impacts initiatives to maintain technical superiority.					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base
Title: Calibration Standards			4.066	3.766	FY 2024 OCO
					0.000
					FY 2024 Total
					4.039

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604215N / Standards Development		Project (Number/Name) 1857 / Calibration Standards		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:		-	-	-	-	-
FY 2023 Plans:						
(\$1.019) Continue development of Fiber Optic Return Loss Standards Phase II of (1) Multi-mode calibration hardware standards in electro optical (Multi-mode) measurement technology to support shipboard readiness of weapon system communication to missile launch systems, combat Flight operations and ground combat operations. Continue development of (1) calibration standard for LiDAR 3D Scanners to support shipboard operational readiness while reducing cost and turnaround time for critical ship building areas; such as installation, design, planning, maintenance and damage assessments. Continue development on (1) for National Low Level Laser Radiometer Calibration Facility, in support of Operational Readiness for Laser rangefinders and designators. Continue development on (2) the RPPM Transfer Training and the High Energy Laser (HEL) Beam Profiler in support HEL testing and operational evaluations assessment.						
(\$0.870) Continue development of (1) calibration hardware standard in electrical/electronic measurement technology to support combat/operational readiness for submarine periscopes magnetic locks and aircraft tail hook non-destructive testing. Continue development of (1) Coaxial Microcalorimeter Power calibration standards in support of Navy's ability to detect adversarial threats and to counteract adversarial electronic countermeasures.						
(\$1.063) Continue development of (3) calibration hardware standards in Chemical/Biological technology for measuring Residual Solvent Vapors in support of Divers Life Support Systems (DLSS). Begin development of (1) Chemical/Biological Biodetector (bio-aerosol detector) Calibration Standard in support of Navy shipboard and shore activities Joint Biological Technical Detection System (JBTDS) for real-time bioaerosols monitoring to defend against biological agent threats.						
(\$0.502) Continue development of (1) Measurement Uncertainty Automation (Phase III) measurement in support of component equipment operational readiness. Continue development of (1) calibration standards in analytical and benchtop metrology focusing in support of metrology benchtop automated physical mechanical calibration methods support equipment operational readiness for both for shore, air and sea-based operations.						
(\$0.312) Continue development of NIST Traceable PNA E-Cal Calibrations for NPSL of (1) calibration hardware standard in Microwave/millimeter-wave technology in support of Vector Network Analyzers to test and repair Weapon Replaceable Assemblies (WRAs) for F-18/P-3/EP-3-E2C/D, EA-6B and P8 aircraft.						
FY 2024 Base Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604215N / Standards Development		Project (Number/Name) 1857 / Calibration Standards		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
(\$0.766) Continue the development of (1) calibration hardware standard in electrical/electronic measurement technology to support combat/operational readiness for submarine periscopes magnetic locks and aircraft tail hook non-destructive testing.						
(\$0.958) Continue development (1) calibration hardware standard in Chemical/Biological technology for measuring Residual Solvent Vapors in support of Divers Life Support Systems (DLSS). Continue development of (1) Chemical/Biological Biodetector (bio-aerosol detector) Calibration Standard in support of Navy shipboard and shore activities Joint Biological Technical Detection System (JBTDS) for real-time bioaerosols monitoring to defend against biological agent threats.						
(\$1.448) Continue development and transition of (1) calibration standards in analytical and benchtop metrology focusing in support of metrology benchtop automated physical mechanical calibration methods support equipment operational readiness for both for shore, air, and sea-based operations. Begin development of (1) RACE Phase V (Extend Calibration Spectrum and Optical Character and Scale Recognition Capabilities) in support of Shipboard operational Readiness.						
(\$0.478) Continue the development and transition of NIST Traceable PNA E-Cal Calibrations for NPSL of (1) Microwave/millimeter-wave calibration hardware standard in support of Vector Network Analyzers to test and repair Weapon Replaceable Assemblies (WRAs) for F-18/P-3/EP-3-E2C/D, EA-6B and P8 aircraft.						
(\$0.383) Begin Development of (1) Electro/Optical calibration standard focusing on Night Vision Telescope Auto Focus Capability in support of aircraft Safety of Flight night operations.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase from FY2023-FY2024 will be used for in house engineering labor.						
Accomplishments/Planned Programs Subtotals		4.066	3.766	4.039	0.000	4.039
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604215N / Standards Development	Project (Number/Name) 1857 / Calibration Standards
<p><b>D. Acquisition Strategy</b></p> <p>Funds provide for in-service engineering initiation of metrology research and developmental efforts of unique non-commercial hardware standards in the development of six key thrust technological areas which correspond to Physical Mechanical, Electro-Optical, Analytical Metrology, Electrical/Electronic systems, Chembio Defense, Microwave/Millimeter wave. These standards will ensure measurement accuracy in advanced and emerging combat weapon systems and associated test equipment. These hardware test standards will also provide for cost effective and efficient system maintenance and calibration measurements that reduce wrong test decisions and will result in lower maintenance cost and higher system performance reliability.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604215N / Standards Development				Project (Number/Name) 1857 / Calibration Standards					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC Corona : Corona, CA	6.491	0.184	Sep 2022	0.325	Jul 2023	0.140	Jun 2024	-		0.140	Continuing	Continuing	Continuing
Subtotal			6.491	0.184		0.325		0.140		-		0.140	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	WR	NSWC Corona : Corona, CA	6.295	1.248	Sep 2022	1.302	Apr 2023	0.560	Mar 2024	-		0.560	0.000	9.405	-
Government Engineering Support	WR	NSWC Corona : Corona, CA	16.557	2.619	Mar 2022	2.124	Mar 2023	3.324	Mar 2024	-		3.324	0.000	24.624	-
Travel	WR	NSWC Corona : Corona, CA	1.161	0.015	Mar 2022	0.015	Mar 2023	0.015	Mar 2024	-		0.015	0.000	1.206	-
Subtotal			24.013	3.882		3.441		3.899		-		3.899	0.000	35.235	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			30.504	4.066		3.766		4.039		-		4.039	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604215N / Standards Development

Project (Number/Name)

1857 / Calibration Standards

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Proj 1857</b>																												
Management and Coordination	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	>
Cybersecurity	<								<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	>
Chemical/Biological standard (hardware) Two Solvent Method for Oxygen Systems	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) Fiber Optic Return Loss Standards Phase II (Multimode)	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electrical/Electronic standard (hardware) Nuclear Magnetic Resonance Replacement Standard	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Analytical Metrology standard Arc Fault Detection System	<																											
Electro-Optical standard (hardware) Beam Box/Next Generation RPPM	<																											
Analytical Metrology standard Measurement Uncertainty Automation (Phase II)	<																											
Analytical Metrology standard TAR/Reliability Exemption Analysis Based on Risk	<																											
Chemical/Biological standard (hardware) Verification of Solvent Removal of Critical Applications Instruments	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) National Low Level Laser Radiometer Calibration Facility	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) RPPM Transfer Training	<		▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) High Energy Laser Beam Profiler	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electrical/Electronic standard (hardware) Coaxial Microcalorimeter Power Standards	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Physical/Mechanical standard (hardware) Cost Effective Calibration of Analox SUB MKIIP	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Analytical Metrology standard Measurement Uncertainty Automation (Phase III)	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Microwave/Millimeter-wave standard (hardware) NIST Traceable PNA E-Cal Calibrations for NPSL	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Analytical Metrology standard Metrology Bench Top (METBENCH) - RACE Phase IV	<	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Chemical/Biological standard (hardware) JCAD calibrator and install	<		▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) LIDAR 3D Scanner Calibration Support	<		▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Chemical/Biological standard (hardware) Biodetector (bio-aerosol detector) Calibration	<					▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) Night Vision Telescope Auto Focus Capability	<								▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Analytical Metrology standard METBENCH - RACE Phase V	<								▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electrical/Electronic standard (hardware) Quantum Based Measurement Standards: Voltage Metrology	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Physical/Mechanical standard (hardware) Quantum Based Measurement Standards: Temperature Metrology	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Microwave/Millimeter-wave standard (hardware) RF Power Transfer Standards	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Analytical Metrology standard Analytical Metrology Capabilities for Interval Analysis using Multivariable Calibration Intervals	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Analytical Metrology standard Analytical Metrology Capabilities for Interval Analysis Estimation using Bayesian Binomial Methods	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Microwave/Millimeter-wave standard (hardware) High Power Microwave/High Power RF (HPM/HPRF)	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Physical/Mechanical standard (hardware) Hypersonic System Measurement Standards	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) 3D Printer Measurement Standards and Processes for Automated Parts Qualification	<												▲	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Chemical/Biological standard (hardware) Environmental Safe and Cost Effective Cleaning of Oxygen Gauges	<																▲	—	—	—	—	—	—	—	—	—	—	
Electro-Optical standard (hardware) Advanced Military Technology Measurement Standards Requirements	<																▲	—	—	—	—	—	—	—	—	—	—	
Physical/Mechanical standard (hardware) Transfer Standards for High-Vacuum Metrology	<																			▲	—	—	—	—	—	—	—	
Analytical Metrology standard Identification of Relevant Error Distributions	<																				▲	—	—	—	—	—	—	
Analytical Metrology standard Joint Calibration Interval Analysis Methodology	<																					▲	—	—	—	—	—	
Physical/Mechanical standard (hardware) Quantum Based Measurement Standards: Pressure Metrology	<																							▲	—	—	—	
Physical/Mechanical standard (hardware) Resonant Silicon Gages as a Precision Pressure Standard	<																								▲	—	—	

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604215N / Standards Development

Project (Number/Name)

1857 / Calibration Standards

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1857</b>				
Management and Coordination	1	2022	4	2028
Cybersecurity	1	2024	1	2028
Chemical/Biological standard (hardware) Two Solvent Method for Oxygen Systems	1	2022	4	2023
Electro-Optical standard (hardware) Fiber Optic Return Loss Standards Phase II (Multimode)	1	2022	4	2023
Electrical/Electronic standard (hardware) Nuclear Magnetic Resonance Replacement Standard	1	2022	4	2024
Analytical Metrology standard Measurement Uncertainty Automation (Phase II)	1	2022	3	2023
Chemical/Biological standard (hardware) Measuring Residual Solvent Vapors in Naval Oxygen and Breathing-Air Systems	1	2022	3	2024
Electro-Optical standard (hardware) NIST Low Level Pulsed Upgrade	1	2022	4	2022
Electro-Optical standard (hardware) High Energy Laser Beam Profiler	1	2022	4	2022
Electrical/Electronic standard (hardware) RF Power Measurement Improvement	3	2022	4	2022
Physical/Mechanical standard (hardware) Cost Effective Calibration of Analox SUB MKIIP	1	2022	4	2022
Analytical Metrology standard Measurement Uncertainty Automation (Phase III)	1	2022	4	2023
Microwave/Millimeter-wave standard (hardware) VNA Verification Kit Uncertainty Reduction	1	2022	4	2023
Analytical Metrology standard Metrology Bench Top (METBENCH) - RACE Phase IV (Development of Physical Mechanical Automated Calibration Methods)	1	2022	4	2023
Electro-Optical standard (hardware) Night Vision Telescope Auto Focus Capability	1	2022	4	2023
Chemical/Biological standard (hardware) Biodetector (bio-aerosol detector) Calibration	1	2022	4	2024
Electrical/Electronic standard (hardware) Zero Chain Traceability	1	2022	4	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604215N / Standards Development		Project (Number/Name) 1857 / Calibration Standards	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Chemical/Biological standard (hardware) Plasma Cleaning for Oxygen Systems		1	2023	4	2026
Analytical Metrology standard METBENCH - RACE Phase V (Extend Calibration Spectrum and Optical Character and Scale Recognition Capabilities)		1	2024	4	2025
Electrical/Electronic standard (hardware) Navy NIST On A Chip (NOAC)		1	2024	4	2026
Analytical Metrology standard Multivariable Calibration Intervals		1	2024	4	2026
Analytical Metrology standard Bayesian Binomial Methods for Calibration Interval Estimation		1	2024	4	2024
Electrical/Electronic standard (hardware) FDM/TDM/WDM Interrogator/Demodulator Calibration Unit		1	2024	4	2026
Physical/Mechanical standard (hardware) Standards for Underwater Acoustic Vector Sensor Characterization		1	2025	4	2026
Analytical Metrology standard Joint Calibration Interval Analysis Methodology		1	2026	4	2027
Analytical Metrology standard Identification of Relevant Error Distributions		1	2026	4	2027
Physical/Mechanical standard (hardware) Transfer Standards for High-Vacuum Metrology		1	2026	4	2027
Physical/Mechanical standard (hardware) Acoustic Pressure Tank Facility (APTF) Upgrade		1	2027	4	2027
Physical/Mechanical standard (hardware) Accurate Speed-of-Sound Determination for Reference Fluids		1	2027	4	2027
Physical/Mechanical standard (hardware) Aluminum Sensitization Testing Improvement		1	2027	4	2027
Physical/Mechanical standard (hardware) Robotic Calibration of Gage Blocks		1	2027	4	2027
Physical/Mechanical standard (hardware) Laser Manometer		1	2027	4	2027
Physical/Mechanical standard (hardware) Resonant SI Gages (Alt. to Laser Manometer)		1	2027	4	2027

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0604216N / Multi-Mission Helicopter Upgrade Dev
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,653.664	52.962	54.684	62.350	-	62.350	63.851	64.302	44.098	34.800	Continuing	Continuing
1707: MH-60 Development	1,644.010	45.239	44.684	62.350	-	62.350	63.851	64.302	44.098	34.800	Continuing	Continuing
9999: Congressional Adds	9.654	7.723	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	27.377

**A. Mission Description and Budget Item Justification**

This Program Element funds the development and improvement of MH-60R/S systems. The MH-60R provides persistent distributed, integrated, and maneuverable capabilities in the support of the Navy's Fleet Design and Distributed Maritime Operations concepts through its primary missions: Intelligence, Surveillance, Reconnaissance & Targeting (ISR&T), Antisubmarine Warfare, Surface Warfare (SUW), Electronic Warfare, Command and Control, and Non-Combat Operations. Secondary missions include: Amphibious Warfare, Air Warfare, Health Services, Fleet Support - Operations, Logistics, and Naval Special Warfare (NSW). Primary missions of the MH-60S include Combat Logistics, SUW, NSW, Combat Search and Rescue, and Airborne Mine Countermeasures. Additional missions include ISR&T, Search and Rescue, Humanitarian Assistance and Defense Support for Civil Authorities.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	54.418	44.684	36.025	-	36.025
Current President's Budget	52.962	54.684	62.350	-	62.350
Total Adjustments	-1.456	10.000	26.325	-	26.325
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.456	0.000			
• Program Adjustments	0.000	0.000	26.134	-	26.134
• Rate/Misc Adjustments	0.000	0.000	0.191	-	0.191

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 9999: Congressional Adds

Congressional Add: MH-60 Capability Upgrades

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

FY 2022	FY 2023
7.723	10.000
7.723	10.000
7.723	10.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604216N I Multi-Mission Helicopter Upgrade Dev	
<p><b><u>Change Summary Explanation</u></b></p> <p>The FY 2024 funding request increased by a total of \$26.325M since the previous President's Budget submission for the following adjustments:</p> <ul style="list-style-type: none"><li>- Increase of \$26.134M for emerging critical Avionics, Mission Systems and Air Vehicle obsolescence (DMSMS) issues as well as Next Generation Joint Mission Planning System (NGNMPS).</li><li>- Increase of \$0.191 for miscellaneous rate adjustments.</li></ul> <p>Schedule: Network Enabled Weapons/TTNT Systems Development updated to reflect an end date from 4QFY2024 to 4QFY2023 due to Project plans/efforts redefined to other priorities and MIDS JTRS from 1QFY2025 to 4QFY2024 due to program acceleration. Display Obsolescence updated to reflect an end date from 2QFY2027 to 2QFY2028 due to emerging Display Glass Obsolescence (FY22-FY23) and need for redesigned display (FY23-FY28). Common ASE Test and Evaluation updated to reflect an end date from 4QFY2023 to 2QFY2024 due to additional test requirements and Radar DT from 4QFY2023 to 4QFY2024 due to software integration alignment, ALFS/Avionics Test and Evaluation updated from 4QFY2022 to 4QFY2024 due to extensive test program, Network Enabled Weapons/TTNT Test and Evaluation from 3QFY2024 to 3QFY2023 due to Project plans/efforts redefined for other priorities and MIDS JTRS from 4QFY2026 to 4QFY2024 due to program acceleration. Radar Tech Refresh in support of Minotaur updated to reflect a start date from 1QFY2025 to 3QFY2024 to align with current integration schedules and Avionics Obsolescence Solutions start date from 3QFY2022 to 1QFY2022 due to emerging obsolescence issues. Added NGNMPS schedule, Avionics DMSMS solutions, and Test and Evaluation for AFCC Obsolescence.</p> <p>Technical: Not Applicable</p>		



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev				Project (Number/Name) 1707 / MH-60 Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1707: MH-60 Development	1,644.010	45.239	44.684	62.350	-	62.350	63.851	64.302	44.098	34.800	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The MH-60R/S program pursues upgrades and enhancements that pace the rapidly evolving threat and improve safety-of-flight for its pilots and aircrew. These efforts include improvements to existing sensors, network capabilities, weapon systems, avionics, communications, and navigation systems as well as integration of modern precision guided air-to-ground missiles, fixed-forward and crew-served weapons, the Sensor Operator Console, and data-fusion capability. The program is also evaluating Diminishing Manufacturing Sources and Material Shortages (DMSMS) and making incremental improvements to various airframe, flight safety, and mission-planning systems. The program will continue development of architecture to support integration of secure, over-the-horizon communications in addition to modern en route navigation and terminal approach systems. MH-60R/S research and development initiatives include the evaluation and validation of the platform's cybersecurity posture. The MH-60R/S program is pursuing capability studies on open hardware and software architectures, avionics, mission systems, and air-vehicle performance.

FY 2024 budget request funds the following:

1. System Configuration (SC) capability increases, including fuel management and safety, Advanced Offboard Electronic Warfare (AOEW), Modernized Tactical Networks (to include Network Enabled Weapons, Concurrent Multi-netting, and Tactical Targeting Network Technology messages), Common Aircraft Survivability Equipment (ASE), Radar Hardware and Software enhancements in support of Minotaur Family of Systems (MFoS), and Air Vehicle, Mission Systems and Avionics DMSMS solutions, to include MH-60 Displays, Embedded Global Positioning System(GPS)/Inertial Navigation System (INS), Radar technical refresh, and Advanced Flight Control Computer obsolescence redesign. Obsolescence issues are expected to impact MH-60R readiness/availability beginning in FY27. FY24 also commences development of Next Generation Naval Mission Planning System (NGNMPS) Mission Planning tool development and integration for enhanced MH-60 Mission Planning.
2. Development of critical aircraft survivability equipment upgrades, including the platform design for the integration of Common ASE/Distributed Aperture Infrared Counter Measures (DAIRCM) and initial investigation of a Passive Detection modern Radar Warning Receiver (RWR). Common ASE substantially improves the survivability of MH-60 aircraft, significantly enhancing the defense of high value units and enabling operations in high threat scenarios. Passive Detection/modern RWR will provide increased survivability and enable the MH-60 aircraft to be an Electronic Warfare Support Measures (ESM) node to provide threat awareness and targeting data to the Fleet.
3. Integration of Tactical Networking to enable over-the-horizon targeting, enhance target sorting, and serve as a force multiplier in network enabled weapon engagements.
4. DMSMS engineering, replacement part development, and qualification testing for known and forecasted Avionics, Mission Systems, Air Vehicle systems and other obsolete parts. These DMSMS solutions will provide considerations for cost reduction and improvement in reliability and performance. The obsolescence solutions will align with the Future Capabilities Roadmap to minimize duplication and align the mid-life upgrade configuration changes with the needed solutions. Major DMSMS/Obsolescence items include Pilot, Co-pilot, and Aircrew Displays and Automatic Flight Control Computer.
5. Radar Hardware and Software refreshment will enable the MH-60R to input into MFoS capabilities and integrated third-party applications will provide enhanced Battlespace Awareness and enriched over-the-horizon targeting support through improved national and tactical sensor integration via common data exchanges via enhanced Tactical Data Networks in support of Distributed Maritime Operations concepts.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev		Project (Number/Name) 1707 / MH-60 Development				
6. Developmental activities including capability studies, interoperability studies, and open hardware and software architectures definition in support of MH-60 mid life upgrades.								
7. Development and integration of the MH-60 Next Generation Mission Planning System.								
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Avionics H/W and S/W Development				34.627	34.884	52.234	0.000	52.234
Articles:				-	-	-	-	-
Description: Development efforts support aircraft integration, problem investigation, lab management and upgrades, and repairs in support of the test program. Individual Avionics and Mission Systems hardware and software upgrades are integrated, tested and fielded as part of an overall MH-60 System Configuration (e.g. SC24, SC26, etc.). System Configuration fleet releases are planned for every two years to meet fleet requirements, add new capabilities, pace the threat, address obsolescence, and incorporate technology insertion. Avionics hardware and software development and integration efforts include: Pre-planned Product Improvements, new System Configurations, Radar enhancements, development of Network Enabled Weapons capability which includes the integration of Tactical Data Network modernization efforts, to include J11 and J12.6 series messages into the MH-60R/S Link-16 architecture and enhancements of the network architecture to include MIDS JTRS CMN-4 and TTNT, development of critical ASE upgrades, cyber evaluations/validations, Diminishing Manufacturing Sources and Material Shortages (DMSMS) solutions (to include Air Vehicle Systems, ALFS, Automatic Flight Control Computer (AFCC), Mission Systems and Avionics with emphasis on displays, Radar upgrades in support of Minotaur Family of Systems (MFoS)/Enhanced Data Correlation integration.								
FY 2023 Plans: Continue MIDS JTRS CMN-4 and Tactical Targeting Network Technology integration in support of Net Enabled Weapons efforts. Continue System Configuration development and integration efforts. Continue activities for System Configuration development including integration of the Common ASE/DAIRCM and initial investigation of a Passive Detection modern RWR system to improve the battlespace awareness of the Fleet, survivability and Radar upgrades in support of MFoS capabilities, integration and third-party applications. Continue development efforts for MH-60 Air Vehicle, Avionics with emphasis on displays and Mission Systems DMSMS solutions.								
FY 2024 Base Plans: Continue activities for System Configuration development including integration of the Common ASE/DAIRCM and initial investigation of a Passive Detection modern Radar Warning Receiver system to improve the battlespace awareness of the Fleet, survivability and MFoS capabilities and third-party applications. Continue development efforts for MH-60 Air Vehicle, Avionics and Mission Systems DMSMS solutions to include Radar,								

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev		Project (Number/Name) 1707 / MH-60 Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
AFCC and Display obsolescence efforts. Commence Next Generation Naval Mission Planning System (NGNMPS) development and integration.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: Increase of \$17.350M from FY 2023 to FY 2024 to commence development and integration of Next Generation Mission Planning System for MH-60 application, continue Radar upgrade in support of Minotaur Family of Systems, and continue emergent and critical obsolescence redesign efforts for Air Vehicle (AFCC), Mission Systems (Radar and ALFS) and Avionics (EGI and Displays).						
Title: Engineering and Logistics  Articles:  FY 2023 Plans: Continue to provide MH-60 engineering support, integrated logistics support, government furnished equipment, support equipment, program management, contract support services, and travel to support Radar corrections, System Configuration activities, Common ASE, and Tactical Data Links, to include data review, deficiency identification and correction, and capability fielding plans. Continue requirements definition and solution analysis for ALFS, Avionics Displays and Air Vehicle obsolescence mitigation efforts and Radar Upgrades in support of Minotaur FoS capabilities and third-party applications. Continue MH-60 Cyber Engineering and Mid-Life Upgrade Architectural analyses. Continue Systems Engineering and Logistics support of MIDS JTRS CMN-4 and future System Configuration efforts.  FY 2024 Base Plans: Continue to provide MH-60 engineering support, integrated logistics support, government furnished equipment, support equipment, program management, contract support services, and travel to support Radar corrections, System Configuration activities, Common ASE, and Tactical Data Links, to include data review, deficiency identification and correction, and capability fielding plans. Continue requirements definition and solution analysis for Mission Systems, Avionics and Air Vehicle obsolescence mitigation efforts and Radar upgrades in support of MFoS capabilities and third-party applications. Continue MH-60 Cyber Engineering and Mid-Life Upgrade Architectural analyses. Provide requirements decomposition and Systems Engineering and Logistics support in		4.236 -	3.550 -	3.689 -	0.000 -	3.689 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy								Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev			Project (Number/Name) 1707 / MH-60 Development				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
support of MIDS JTRS CMN-4 and future System Configuration efforts. Commence requirements development and integration activities for Next Generation Mission Planning System. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$0.139M from FY 2023 to FY 2024 due to Engineering and Logistics support for Radar Development activities.											
Title: Test and Evaluation  <div>Articles:</div>						6.376 -	6.250 -	6.427 -	0.000 -	6.427 -	
FY 2023 Plans: Continue System Configuration, ALFS/Avionics Obsolescence, and Radar test and evaluation activities. Continue Common ASE and Tactical Data Link modernization test and evaluation and Obsolescence Solution test and evaluation planning.  FY 2024 Base Plans: Continue System Configuration testing (SC24 and SC26), ALFS/ Avionics Obsolescence, MIDS JTRS, and Radar test and evaluation activities. Continue Common ASE and Tactical Data Link modernization test and evaluation, Obsolescence Solution test and evaluation planning. Commence Radar Tech Refresh in support of Minotaur.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: Increase of \$0.177M from FY 2023 to FY 2024 for Avionics Obsolescence Solutions.											
Accomplishments/Planned Programs Subtotals						45.239	44.684	62.350	0.000	62.350	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0530: SH60 Series	94.708	136.238	106.495	-	106.495	114.762	133.229	151.338	167.519	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev	Project (Number/Name) 1707 / MH-60 Development

**D. Acquisition Strategy**

MH-60 research and development efforts will be developed using cost plus incentive fee type and cost plus fixed fee contracts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter U pgrade Dev				Project (Number/Name) 1707 / MH-60 Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network Enabled Weapons/Data Link Enhancement	SS/CPIF	Lockheed Martin : Owego, NY	20.789	3.000	Nov 2021	2.694	Nov 2022	0.000		-		0.000	0.000	26.483	26.483
Cyber Evaluation/ Validation	C/CPFF	JHU/APL : Laurel, MD	3.861	0.250	Jan 2022	0.250	Jan 2023	0.200	Jan 2024	-		0.200	0.400	4.961	4.961
Common ASE Architecture	SS/CPFF	Lockheed Martin : Owego, NY	2.800	2.500	Jan 2022	0.500	Dec 2022	0.000		-		0.000	0.000	5.800	5.800
Radar Development	C/CPFF	Lockheed Martin : Owego, NY	3.033	1.450	Feb 2022	1.250	Jan 2023	0.000		-		0.000	0.000	5.733	5.733
MH-60 DMSMS Solutions/ Tech Insertion	SS/IDIQ	Various : Various	5.346	5.506	Dec 2021	14.000	Dec 2022	0.700	Mar 2024	-		0.700	0.000	25.552	24.852
Minotaur Development	SS/CPFF	Lockheed Martin : Owego, NY	2.100	4.971	Apr 2022	5.000	Dec 2022	13.125	Dec 2023	-		13.125	30.700	55.896	56.771
System Configuration Releases	SS/CPFF	Lockheed Martin : Owego, NY	7.464	5.000	Dec 2021	5.000	Dec 2022	6.000	Dec 2023	-		6.000	20.000	43.464	43.964
Mid-Life Upgrade	SS/CPFF	Lockheed Martin : Owego, NY	0.250	0.250	May 2022	0.250	May 2023	0.300	May 2024	-		0.300	0.400	1.450	1.450
MIDS JTRS CMN-4	SS/CPIF	Lockheed Martin : Owego, NY	0.000	11.700	Feb 2022	5.940	Dec 2022	1.500	Dec 2023	-		1.500	0.000	19.140	19.140
NextGen JMPS (NGNMPS)	SS/CPIF	Various : Various	0.000	0.000		0.000		9.784	Jan 2024	-		9.784	66.500	76.284	76.600
Avionics Obsolescence Efforts	TBD	Various : Various	0.000	0.000		0.000		0.800	Jan 2024	-		0.800	9.250	10.050	10.250
Air Vehicle AFCC Obsolesecnce	SS/CPIF	Lockheed Martin : Owego, NY	0.000	0.000		0.000		10.625	Jan 2024	-		10.625	34.300	44.925	46.300
Display Obsolescence	SS/CPIF	Lockheed Martin : Owego, NY	0.000	0.000		0.000		9.200	Jan 2024	-		9.200	6.739	15.939	15.939
Prior year Product Dev Cost no longer funded in the FYDP	Various	Various : Various	1,176.887	0.000		0.000		0.000		-		0.000	0.000	1,176.887	1,176.887
Subtotal			1,222.530	34.627		34.884		52.234		-		52.234	168.289	1,512.564	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604216N / Multi-Mission Helicopter U pgrade Dev						<b>Project (Number/Name)</b> 1707 / MH-60 Development			
<b>Product Development (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Remarks</b> 1. MH-60 DMSMS Solutions/Tech Insert has been further defined for FY24 as Avionics Obsolescence Efforts, Air Vehicle AFCC Obsolescence and Display Obsolescence. 2. Increase from FY23 to FY24 reflects the addition of NextGen NMPS and increase in Obsolescence requirements.															
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Government Eng Support, Mid-Life Upgrade	Various	Various : Various	1.394	0.050	Nov 2021	0.049	Nov 2022	0.200	Nov 2023	-		0.200	Continuing	Continuing	Continuing
Government Eng Support, Net Enabled Weapons/ Data Link Enhancement	Various	Various : Various	1.574	0.400	Nov 2021	0.287	Nov 2022	0.000		-		0.000	0.000	2.261	-
Government Eng Support, Common ASE Architecture	Various	Various : Various	1.050	0.300	Nov 2021	0.296	Nov 2022	0.100	Nov 2023	-		0.100	0.000	1.746	-
Government Eng Support, Radar Dev	Various	Various : Various	2.055	0.300	Nov 2021	0.296	Nov 2022	0.281	Nov 2023	-		0.281	0.000	2.932	-
Government Eng Support, DMSMS	WR	NAWC AD : Patuxent River, MD	0.318	0.636	Nov 2021	1.090	Nov 2022	0.200	Nov 2023	-		0.200	Continuing	Continuing	Continuing
Government Eng Support, System Configuration Releases	Various	Various : Various	0.870	0.300	Nov 2021	0.296	Nov 2022	0.350	Nov 2023	-		0.350	Continuing	Continuing	Continuing
Government Eng Support, Cyber Evaluation	Various	Various : Various	0.200	0.200	Nov 2021	0.198	Nov 2022	0.050	Nov 2023	-		0.050	Continuing	Continuing	Continuing
Government Eng Support, Minotaur	Various	Various : Various	0.000	0.250	Nov 2021	0.494	Nov 2022	1.000	Nov 2023	-		1.000	4.050	5.794	-
Government Eng Support, MIDS JTRS CMN-4	Various	Various : Various	0.000	0.500	Nov 2021	0.494	Nov 2022	0.200	Nov 2023	-		0.200	0.000	1.194	-
Government Eng Support, ALFS	Various	Various : Various	0.000	1.250	Nov 2021	0.000		0.000		-		0.000	0.000	1.250	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter U pgrade Dev						Project (Number/Name) 1707 / MH-60 Development			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Eng Support, NextGen JMPS (NGNMPS)	Various	Various : Various	0.000	0.000		0.000		0.500	Nov 2023	-		0.500	2.800	3.300	-
Government Eng Support, Air Vehicle AFCC Obsolescence	Various	Various : Various	0.000	0.000		0.000		0.379	Nov 2023	-		0.379	2.000	2.379	-
Government Eng Support, Display Obsolescence	Various	Various : Various	0.000	0.000		0.000		0.379	Nov 2023	-		0.379	2.000	2.379	-
Prior year support cost no longer funded in the FYDP	Various	Various : Various	167.296	0.000		0.000		0.000		-		0.000	0.000	167.296	-
Subtotal			174.757	4.186		3.500		3.639		-		3.639	Continuing	Continuing	N/A
Remarks															
Increase from FY23 to FY24 to provide increased Engineering and Logistics support for Radar Development activities.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC AD : Patuxent River, MD	8.139	6.376	Nov 2021	6.250	Nov 2022	6.427	Nov 2023	-		6.427	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	199.163	0.000		0.000		0.000		-		0.000	0.000	199.163	-
Subtotal			207.302	6.376		6.250		6.427		-		6.427	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	NAWC AD : Patuxent River, MD	5.165	0.050	Oct 2021	0.050	Oct 2022	0.050	Oct 2023	-		0.050	0.200	5.515	-

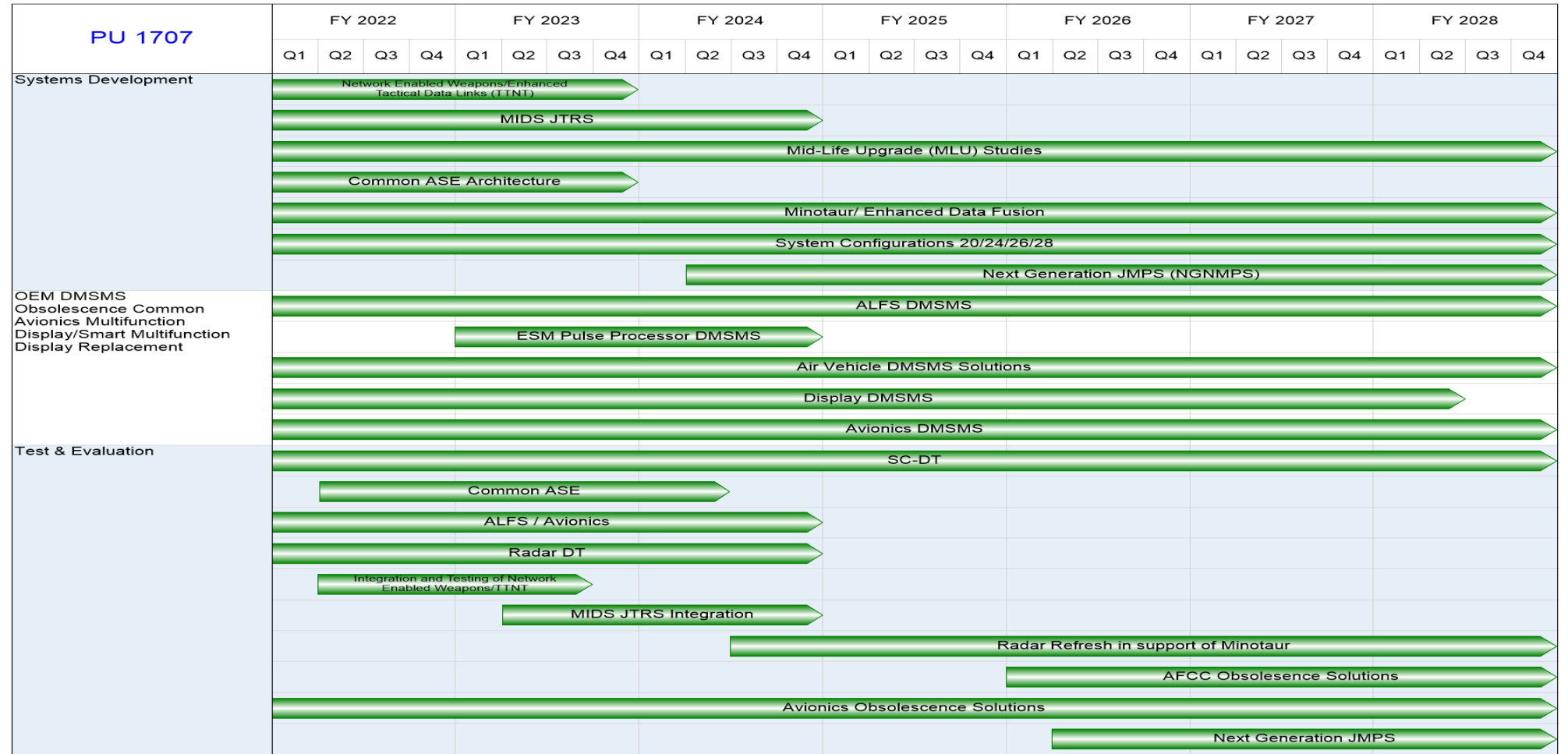


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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev						Project (Number/Name) 1707 / MH-60 Development			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Mgmt Serv cost no longer funded in the FYDP	Various	Various : Various	34.256	0.000		0.000		0.000		-		0.000	0.000	34.256	-
Subtotal			39.421	0.050		0.050		0.050		-		0.050	0.200	39.771	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,644.010	45.239		44.684		62.350		-		62.350	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																				Date: March 2023			
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter U pgrade Dev										Project (Number/Name) 1707 / MH-60 Development			



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604216N / Multi-Mission Helicopter Upgrade Dev

## Project (Number/Name)

1707 / MH-60 Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>PE 0604216N: Multi-Mission Helicopter Upgrade Development</b>				
Systems Development: Network Enabled Weapons/Enhanced Tactical Data Links (TTNT)	1	2022	4	2023
Systems Development: MIDS JTRS	1	2022	4	2024
Systems Development: MLU Studies	1	2022	4	2028
Systems Development: Common ASE Architecture	1	2022	4	2023
Systems Development: Minotaur/Enhanced Data Correlation	1	2022	4	2028
Systems Development: System Configurations 20 /24 / 26 / 28	1	2022	4	2028
Systems Development: Systems Development: Next Generation JMPS (NGNMPS)	2	2024	4	2028
OEM DMSMS Obsolescence: ALFS DMSMS	1	2022	4	2028
OEM DMSMS Obsolescence: ESM Pulse Processor DMSMS	1	2023	4	2024
OEM DMSMS Obsolescence: Air Vehicle DMSMS Solutions	1	2022	4	2028
OEM DMSMS Obsolescence: Display DMSMS	1	2022	2	2028
OEM DMSMS Obsolescence: Avionics obsolescence	1	2022	4	2028
Test and Evaluation: System Configurations DT	1	2022	4	2028
Test and Evaluation: Common ASE	2	2022	2	2024
Test and Evaluation: ALFS / Avionics	1	2022	4	2024
Test and Evaluation: Radar DT	1	2022	4	2024
Test and Evaluation: Integration and Testing of Network Enabled Weapons/TTNT	2	2022	3	2023
Test and Evaluation: MIDS JTRS Integration	2	2023	4	2024
Test and Evaluation: Radar Tech Refresh in support of Minotaur	3	2024	4	2028
Test and Evaluation: Avionics Obsolescence Solutions	1	2022	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev	Project (Number/Name) 1707 / MH-60 Development		
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Test and Evaluation: AFCC Obsolescence Solutions	1	2026	4	2028
Test and Evaluation: Next Generation JMPS (NGNMPS)	2	2026	4	2028

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>				<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: <i>Congressional Adds</i>	9.654	7.723	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	27.377
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
FY 2023 Congressional Capability Upgrade funding of \$10.0 million will fund initial analysis and development of enhanced Electronic Support Measures, Lab and Ground Test Vehicle upgrades, continued studies in support of Avionics and Mission Systems obsolescence upgrades, Integration and Test of the MH-60R Digital Magnetic Anomaly Detection System, and updates to MH-60 training certificates.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> MH-60 Capability Upgrades	7.723	10.000
<b><i>FY 2022 Accomplishments:</i></b> FY 2022 funding supports initial analysis and development of Improved Radar hardware and software, enhanced flight control software to improve Airborne Low Frequency Sonar operations, air vehicle subsystem enhancements, avionics improvements, MH-60 trainer improvements, and Anti-Submarine Warfare and Data Link demonstrations and certifications.		
<b><i>FY 2023 Plans:</i></b> FY 2023 funding supports initial analysis and development of enhanced Electronic Support Measures, Lab and Ground Test Vehicle upgrades, continued studies in support of Avionics and Mission Systems obsolescence upgrades, Integration and Test of the MH-60R Digital Magnetic Anomaly Detection System, and updates to MH-60 training certificates.		
<b>Congressional Adds Subtotals</b>	7.723	10.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter U pgrade Dev				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Avionics SC24 IFF Mode 5 SW	SS/CPAF	Lockheed Martin : Owego, NY	0.733	0.000		0.000		0.000		-		0.000	0.000	0.733	-
Common ASE	SS/CPFF	Lockheed Martin : Owego, NY	0.786	0.000		0.000		0.000		-		0.000	0.000	0.786	-
System Configuration Releases	SS/CPFF	Lockheed Martin : Owego, NY	0.583	0.000		0.000		0.000		-		0.000	0.000	0.583	-
Tactical Targeting Network Technology	C/CPFF	ViaSat, Inc. : Carlsbad, CA	0.902	0.000		0.000		0.000		-		0.000	0.000	0.902	-
Digital ESM	C/CPIF	Various : Various	0.700	0.000		0.000		0.000		-		0.000	0.000	0.700	-
AFCC Control Laws for ALFS	C/CPIF	Lockheed Martin : Owego, NY	0.780	0.000		0.000		0.000		-		0.000	0.000	0.780	-
AMCM Trade Study	C/CPIF	Lockheed Martin : Owego, NY	1.750	0.000		0.000		0.000		-		0.000	0.000	1.750	-
Display Trade Study	C/CPIF	Lockheed Martin : Owego, NY	2.500	0.000		0.000		0.000		-		0.000	0.000	2.500	-
AFCS Control Laws	SS/CPFF	Lockheed Martin : Owego, NY	0.000	1.000	Jul 2022	0.000		0.000		-		0.000	0.000	1.000	-
Radar Tech Refresh	SS/CPFF	Lockheed Martin : Owego, NY	0.000	1.000	Jun 2022	0.000		0.000		-		0.000	0.000	1.000	-
AV Improvements: Pitch Rate Gyro	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.500	Aug 2022	0.000		0.000		-		0.000	0.000	0.500	-
Radar Interim Level Maintenance Enhancements	C/CPFF	Various : Various	0.000	1.000	Jun 2022	0.000		0.000		-		0.000	0.000	1.000	-
Net Ready Certification	C/CPFF	Various : Various	0.000	0.500	Jun 2022	0.000		0.000		-		0.000	0.000	0.500	-
Enhanced Electronic Support Measures Demo	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.300	Aug 2022	0.000		0.000		-		0.000	0.000	0.300	-
Commercial Off The Shelf Trainer Improvements	SS/CPFF	Lockheed Martin : Owego, NY	0.000	1.000	Aug 2022	0.000		0.000		-		0.000	0.000	1.000	-
Advanced Anti Submarine Warfare Analysis of Alternatives	C/CPFF	Various : Various	0.000	0.100	Jun 2022	0.000		0.000		-		0.000	0.000	0.100	-

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604216N / Multi-Mission Helicopter Upgrade Dev

## Project (Number/Name)

9999 / Congressional Adds

## Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SC24 Improvements	SS/CPFF	Lockheed Martin : Owego, NY	0.000	1.000	Jun 2022	0.000		0.000		-		0.000	0.000	1.000	-
Electronic Support Measures Autoloader Enhancements	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.700	Jun 2022	0.000		0.000		-		0.000	0.000	0.700	-
Aircraft Test Vehicle/Lab Upgrades	C/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		4.800	Jun 2023	0.000		-		0.000	0.000	4.800	-
Electronic Support Measures Upgrade	C/CPFF	General Dynamics Information Technology : Falls Church, VA	0.000	0.000		1.000	Apr 2023	0.000		-		0.000	0.000	1.000	-
Training System Upgrades	C/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		1.400	Jun 2023	0.000		-		0.000	0.000	1.400	-
Training System Upgrades	WR	NAWC AD : Patuxent River, MD	0.000	0.000		0.600	Apr 2023	0.000		-		0.000	0.000	0.600	-
Organic Software Test Bench	WR	NAWC AD : Patuxent River, MD	0.000	0.000		1.200	Apr 2023	0.000		-		0.000	0.000	1.200	-
<b>Subtotal</b>			8.734	7.100		9.000		0.000		-		0.000	0.000	24.834	N/A

## Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Eng Support, Obsolescence	Various	Various : Various	0.689	0.000		0.000		0.000		-		0.000	0.000	0.689	-
Government Eng Support, Capability Upgrade	WR	NAWC WD : China Lake, CA	0.170	0.000		0.000		0.000		-		0.000	0.000	0.170	-
Contractor Eng Support, Obsolescence	Various	Various : Various	0.061	0.000		0.000		0.000		-		0.000	0.000	0.061	-
Government Eng Support, Capability Upgrade	WR	NAWC AD : Patuxent River, MD	0.000	0.623	Apr 2022	0.500	Apr 2023	0.000		-		0.000	0.000	1.123	-
<b>Subtotal</b>			0.920	0.623		0.500		0.000		-		0.000	0.000	2.043	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev						Project (Number/Name) 9999 / Congressional Adds			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	C/BA	COMNAVAIRLANT : Norfolk, VA	0.000	0.000		0.500	Oct 2023	0.000		-		0.000	0.000	0.500	-
Subtotal			0.000	0.000		0.500		0.000		-		0.000	0.000	0.500	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			9.654	7.723		10.000		0.000		-		0.000	0.000	27.377	N/A
Remarks															



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

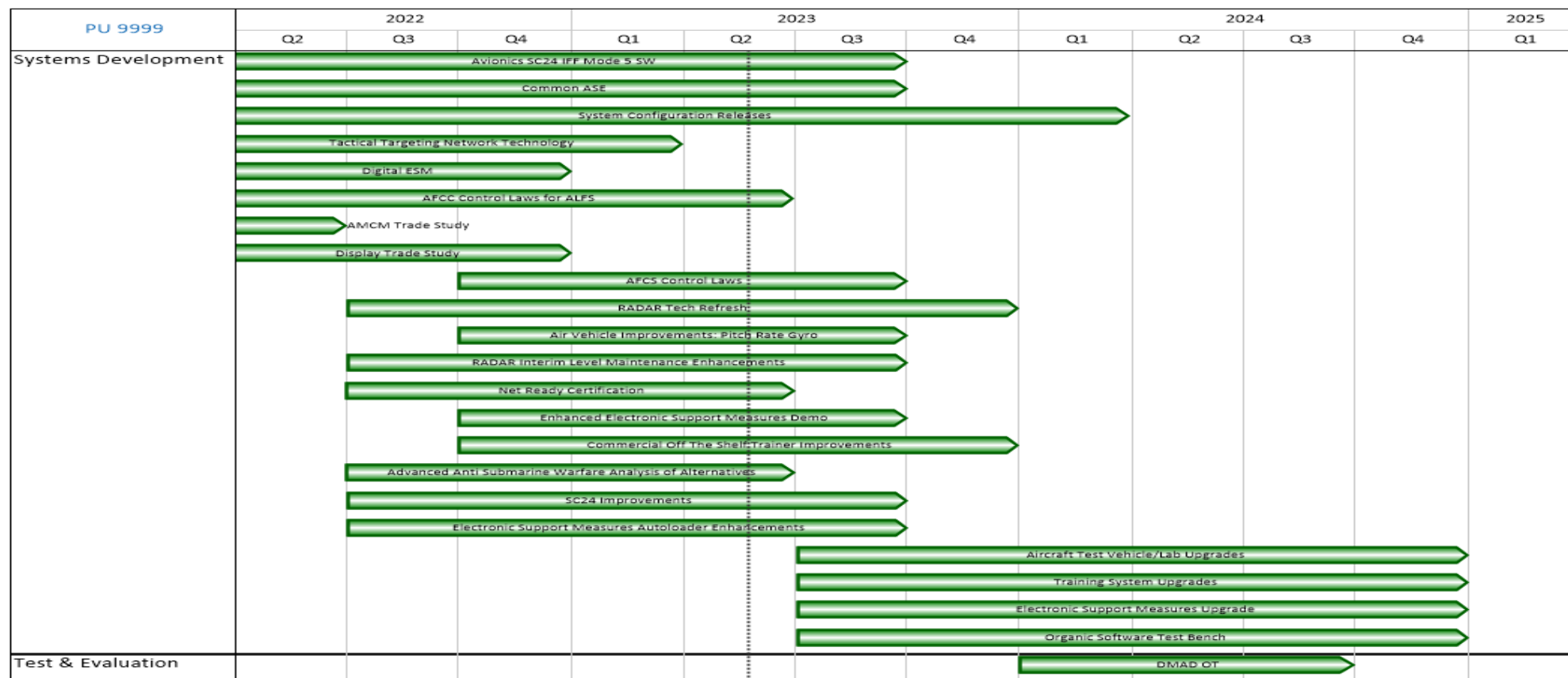
Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604216N / Multi-Mission Helicopter U  
pgrade Dev

Project (Number/Name)  
9999 / Congressional Adds

## Congressional Schedule PB24



Congressional Schedule PB24\_PU 9999

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Status Date: 3/8/2022

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604216N / Multi-Mission Helicopter Upgrade Dev	<b>Project (Number/Name)</b> 9999 / Congressional Adds	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 9999</b>				
Systems Development: Avionics SC24 IFF Mode 5 Software	1	2022	3	2023
Systems Development: Common ASE	1	2022	3	2023
Systems Development: System Configuration Releases	1	2022	1	2024
Systems Development: Tactical Targeting Network Technology	1	2022	1	2023
Systems Development: Digital ESM	1	2022	4	2022
Systems Development: AFCC Control Laws for ALFS	1	2022	2	2023
Systems Development: AMCM Trade Study	1	2022	2	2022
Systems Development: Display Trade Study	1	2022	4	2022
Systems Development: AFCS Control Laws	4	2022	3	2023
Systems Development: Radar Tech Refresh	3	2022	4	2023
Systems Development: Air Vehicle Improvements: Pitch Rate Gyro	4	2022	3	2023
Systems Development: Radar Interim Level Maintenance Enhancements	3	2022	3	2023
Systems Development: Net Ready Certification	3	2022	2	2023
Systems Development: Enhanced Electronic Support Measures Demo	4	2022	3	2023
Systems Development: Commercial Off The Shelf Trainer Improvements	4	2022	4	2023
Systems Development: Advanced Anti Submarine Warfare Analysis of Alternatives	3	2022	2	2023
Systems Development: SC24 Improvements	3	2022	3	2023
Systems Development: Electronic Support Measures Autoloader Enhancements	3	2022	3	2023
Systems Development: Aircraft Test Vehicle/Lab Upgrades	3	2023	4	2024
Systems Development: Electronic Support Measures Upgrade	3	2023	4	2024
Systems Development: Training Systems Upgrades	3	2023	4	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604216N / Multi-Mission Helicopter Upgrade Dev		Project (Number/Name) 9999 / Congressional Adds	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Systems Development: Organic Software Test Bench		3	2023	4	2024
Test and Evaluation: DMAD OT		1	2024	3	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604221N / P-3 Modernization Program							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	26.507	0.564	0.343	0.771	-	0.771	0.000	0.000	0.000	0.000	0.000	28.185
3016: Fatigue Life Mgmt Program	26.507	0.564	0.343	0.771	-	0.771	0.000	0.000	0.000	0.000	0.000	28.185

## A. Mission Description and Budget Item Justification

Fatigue Life Management Program is required to manage P-3/EP-3 inventory fatigue life and includes ongoing structural analysis, analyzing emergent structural issues, conducting engineering studies, assessing Fleet impact, and applying new technologies such as Non-Destructive Inspection techniques.

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	0.579	0.343	0.771	-	0.771
Current President's Budget	0.564	0.343	0.771	-	0.771
Total Adjustments	-0.015	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.015	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

## Change Summary Explanation

Cost: Not applicable.

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604221N / P-3 Modernization Program				Project (Number/Name) 3016 / Fatigue Life Mgmt Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3016: Fatigue Life Mgmt Program	26.507	0.564	0.343	0.771	-	0.771	0.000	0.000	0.000	0.000	0.000	28.185
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Fatigue Life Management Program is required to manage P-3/EP-3 inventory fatigue life and includes ongoing structural analysis, analyzing emergent structural issues, conducting engineering studies, assessing Fleet impact, and applying new technologies such as Non-Destructive Inspection techniques.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> P-3/EP-3 Fatigue Life Management  <b>Articles:</b>  <b>FY 2023 Plans:</b> Fatigue Life Management Program: Continue managing P-3/EP-3 inventory fatigue life including conducting structural analysis, analyzing structural issues, conducting engineering studies, and assessing Fleet impact. Continue researching, testing and applying new Fatigue Inspection techniques to the P-3/EP-3 Fleet.  <b>FY 2024 Base Plans:</b> Fatigue Life Management Program: Continue managing P-3/EP-3 inventory fatigue life including conducting structural analysis, analyzing structural issues, conducting engineering studies, and assessing Fleet impact. Continue researching, testing and applying new Fatigue Inspection techniques to the P-3/EP-3 Fleet.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The increase from FY2023 to FY2024 is due to unanticipated/continued fatigue life inspection requirements (Total Life Index(TLI)/(Probability of Failure(PoF) due to the operational extension of EP-3s aircraft through end of FY24.								0.564	0.343	0.771	0.000	0.771
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								0.564	0.343	0.771	0.000	0.771
C. Other Program Funding Summary (\$ in Millions)												
N/A												
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604221N / P-3 Modernization Program	Project (Number/Name) 3016 / Fatigue Life Mgmt Program
<p><b>D. Acquisition Strategy</b></p> <p>The Fatigue Life Management Program leverages off of prior work done under P-3 Service Life Extension Program (2451). The Anti-Surface Warfare Improvement Program Operational Requirements Documents 355-88-94 was approved 30 March 94. Work will be performed by RBC, Inc and other industry participants along with the Naval Air Systems Command Structural Engineering Dept, AIR-4.3. This program supports the 7 June 2003 CNO approved P-3/EP-3 Sustainment Bridge to Multi-Mission Maritime Aircraft.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604221N / P-3 Modernization Program				Project (Number/Name) 3016 / Fatigue Life Mgmt Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPIF	LM : Marietta, GA	14.328	0.000		0.000		0.000		-		0.000	0.000	14.328	14.481
Systems Engineering	C/CPFF	RBC : Alexandria, VA	0.000	0.438	Jan 2022	0.208	Jul 2023	0.400	Jul 2024	-		0.400	0.000	1.046	0.964
Subtotal			14.328	0.438		0.208		0.400		-		0.400	0.000	15.374	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD : PAX RIVER, MD	10.814	0.124	Nov 2021	0.125	Nov 2022	0.361	Nov 2023	-		0.361	0.000	11.424	-
Travel	WR	NAWCAD : PAX RIVER, MD	1.095	0.002	Oct 2021	0.010	Oct 2022	0.010	Oct 2023	-		0.010	0.000	1.117	-
Prior Year costs no longer funded in FYDP	Various	Various : Various	0.270	0.000		0.000		0.000		-		0.000	0.000	0.270	-
Subtotal			12.179	0.126		0.135		0.371		-		0.371	0.000	12.811	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			26.507	0.564		0.343		0.771		-		0.771	0.000	28.185	N/A
Remarks															



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604221N / P-3 Modernization Program

Project (Number/Name)  
3016 / Fatigue Life Mgmt Program

Fatigue Life Mgmt Program	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones																												
Systems Development																												
Hardware Development																												
Software Development																												
Reviews																												
Test & Evaluation																												
Technical Evaluation	Inventory Fatigue Life Management/Sustainment																											
Operational Evaluation																												
Production Milestones																												
Contract Awards																												
Deliveries																												

2024DON - 0604221N - 3016

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604221N / P-3 Modernization Program	Project (Number/Name) 3016 / Fatigue Life Mgmt Program	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Fatigue Life Mgmt Program</i>				
Test & Evaluation: Technical Evaluation: Inventory Fatigue Life Management/ Sustainment	1	2022	4	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	127.815	14.945	16.337	109.485	-	109.485	85.070	29.075	22.621	23.011	Continuing	Continuing
1130: Expeditionary Loitering Munitions Capability Development	0.000	0.000	0.000	93.600	-	93.600	64.047	13.062	9.182	9.301	Continuing	Continuing
3326: NSW Rapid Capabilities Development for CIEC	57.469	8.962	8.181	12.159	-	12.159	17.074	11.995	9.654	9.847	Continuing	Continuing
3445: Visual Augmentation System Development	0.000	1.142	1.184	1.248	-	1.248	1.261	1.289	1.314	1.342	Continuing	Continuing
3446: Expeditionary sUAS Development	0.000	0.244	1.273	0.687	-	0.687	0.882	0.887	0.590	0.602	Continuing	Continuing
4011: Naval Coastal Warfare Surv and C4I Sys	50.919	0.781	0.803	0.849	-	0.849	0.856	0.871	0.890	0.907	Continuing	Continuing
9999: Congressional Adds	6.753	2.894	4.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.647
9C86: Combatant Craft Replacement	12.674	0.922	0.896	0.942	-	0.942	0.950	0.971	0.991	1.012	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The Rapid Capabilities Development (RCD) program supports the Naval Special Warfare (NSW) Branch by identifying and assessing available technologies that confront current and future irregular and expeditionary warfare challenges. Program development efforts focus on the enhancement/advancement of existing technologies to fill urgent and emergent capability gaps for NSW. Program funding provides for the development, integration, testing, validation, combat demonstration, and evaluation of identified technologies to meet operational requirements; service-common and NSW program technology challenges; and technology obsolescence issues of developed capabilities.

The RCD program develops expeditionary/operational capabilities that enable NSW forces to conduct joint cross-domain special reconnaissance, counterterrorism, direct action, amphibious and irregular warfare, and fulfill urgent/emergent needs within a 9-36 month timeframe.

As part of the Naval Coastal Warfare Surveillance program, Identity Dominance System (IDS) supports the Joint Personnel Identity (JPI) program. Maritime Expeditionary Security Force (MESF) have a mobile security mission that requires methodologies, procedures, equipment and the communications capacity to identify individuals who represent a potential threat as a means to deter and eliminate individuals from conducting asymmetric/non-traditional attacks upon friendly forces, high value assets and coastal areas that Naval Coastal Warfare (NCW) is charged with protecting. The Visit, Board, Search and Seizure (VBSS) teams conducting Expanded Maritime Interception Operations also have a similar requirement to identify individuals. The development of a device to support identity functions is captured in the

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604230N / <i>Warfare Support System</i>
<p>IDS Capability Development Document (CDD) and implemented in the IDS Capability Production Document (CPD). IDS units are used in the following environments: aboard ships, ashore at ports, the littorals, and extended inland field environments worldwide. IDS is employed in both maritime and very austere ashore environments, carried by individuals who are part of ship boarding parties and by dismounted patrols. These mission and environmental requirements demand the need for a portable, lightweight, ruggedized, and reliable system with intuitive and user friendly features. IDS biometric modalities may differ by mission profile, requiring the authoritative response to the On-Scene Commander/Boarding Officer on whether to detain or further investigate an individual of interest or engage in a more thorough search of boarded ships.</p> <p>The United States Navy Service Common Visual Augmentation Systems (VAS) Program of Record manages, procures, and maintains night vision devices, thermal detection devices, day/night weapons optics, and lasers in support of Navy combat capabilities with regard to the detection, recognition, classification, tracking, and destruction of hostile air and surface forces. The USN VAS Program also manages research into the future of visual augmentation systems and engages with Navy and DoD VAS stakeholders to ensure the Navy maintains competitive advantage over near-peer adversaries.</p> <p>Combatant Craft Replacement will provide next generation Expeditionary Multi Mission Craft that will replace in-service Expeditionary Combatant Craft. Combatant Craft replacements shall forward deploy and persistently engage in order to dominate in the Littorals and reinforce Distributed Maritime Operations Lethality, they gain access to as well as CLEAR the battlespace of unexploded ordnance and other man-made or natural hazards and SECURE and PROTECT critical infrastructure and their approaches from the sea for naval platforms as they conduct operations. These capabilities are critical to Navy employment of modern warfare concepts, including Distributed Maritime Operations (DMO), Expeditionary Advanced Base Operations (EABO), and Littoral Operations in a Contested Environment (LOCE). Specific mission and capabilities will be identified in an Initial Capabilities Document (ICD) or Letter of Requirements. RDT&amp;E funding will fund feasibility studies and procurement of mock-ups and prototype craft and craft and mission support technology to demonstrate capabilities prior to production craft procurement.</p> <p>The Diesel Fuel Outboard Motor Testing project supports the transition of the FY 2015 Rapid Innovation Fund "Affordable Multi-fuel Multi-engine Advanced Combatant Craft" program to the Explosive Ordnance Disposal Force. This technology minimizes the types of fuel required to increase standardization, flexibility, and interoperability during deployment while at the same time reduces total ownership cost. Testing of this technology shall determine the operational viability and any changes required to boat design to ensure safety and suitability.</p> <p>DRAKE is the shipboard Counter-Unmanned Aircraft System (CUAS) to meet the CUAS Afloat Top Level Requirements (TLR). Funds will be used to develop, test, and integrate COTS-based hardware, software, and advanced techniques into DRAKE; thus improving its capability to detect, identify, and defeat UAS that threaten ships. Upgrades include hardware refresh with faster COTS processors to increase processing speed and reaction time (NextGen SDR), a COTS tablet (CDU 2.0) to improve situational awareness, and evaluation of COTS antennas to improve detection and defeat of UAS.</p> <p>Project GOAL KEEPER is a Navy loitering munition program designed to meet an urgent Geographic Combatant Command Requirement. FY24 RDTEN funding will be used to fund the final technology demonstration, test articles, the Operational Assessment, and safety certification.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604230N / Warfare Support System			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	13.167	12.337	12.499	-	12.499
Current President's Budget	14.945	16.337	109.485	-	109.485
Total Adjustments	1.778	4.000	96.986	-	96.986
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	4.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.222	0.000			
• Program Adjustments	2.000	0.000	96.650	-	96.650
• Rate/Misc Adjustments	0.000	0.000	0.336	-	0.336
<b>Congressional Add Details (\$ in Millions, and Includes General Reductions)</b>					
<b>Project: 9999: Congressional Adds</b>					
Congressional Add: Operational deployment of diesel-fueled outboard marine motors					
Congressional Add: NSW unmanned vehicle development					
Congressional Add Subtotals for Project: 9999					
Congressional Add Totals for all Projects					
<b>Change Summary Explanation</b>					
FY 2022: -\$0.222M Small Business Innovation Research (SBIR), +\$2.000M Ukraine Supplemental, -\$0.001M misc. rate adjustment					
FY 2023: +\$4.000M Congressional add NSW Unmanned Vehicle Development					
FY 2024: +\$3.250M (PROJ: 3226) Cognitive Router Capability; +93.4M (PROJ: 1130) Expeditionary Loitering					
Munitions Capability Development, +\$0.088M misc. rate adjustment 4011 Naval Coastal Warfare Surv and C4I Sys, +\$0.046M misc. rate adjustment					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 1130 / Expeditionary Loitering Munitions Capability Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1130: Expeditionary Loitering Munitions Capability Development	0.000	0.000	0.000	93.600	-	93.600	64.047	13.062	9.182	9.301	Continuing	Continuing
Quantity of RDT&E Articles		-	-	160	-	160	-	-	-	-		

**Note**

This program is not a new start. Project 1130 Expeditionary Loitering Munitions Capability Development (GOALKEEPER) is transitioning from PE 0603382N, PU 3423 LOCUST, an Innovative Naval Prototype under the Office of Naval Research.

**A. Mission Description and Budget Item Justification**

Project GOALKEEPER is a Navy loitering munition program designed to meet a Geographic Combatant Commander Joint Emergent Operational Need (JEON). GOALKEEPER will leverage and continue prior development efforts including an Office of Naval Research (ONR) Innovative Naval Prototype (INP). The Navy is pursuing a commercial-off-the-shelf solution with autonomous government-provided software and a government-provided launcher system. The system will be expeditionary and deployable by small teams to support operations in various environments. The system architecture shall be modular and extensible to allow for capability upgrades and periodic technology refresh.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> PRODUCT DEVELOPMENT	0.000	0.000	75.100	0.000	75.100
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Project GOALKEEPER is a Navy loitering munition program designed to meet a Geographic Combatant Commander Joint Emergent Operational Need (JEON). GOALKEEPER will leverage and continue prior development efforts including an Office of Naval Research (ONR) Innovative Naval Prototype (INP). The Navy is pursuing a commercial-off-the-shelf solution with autonomous government-provided software and a government-provided launcher system. The system will be expeditionary and deployable by small teams to support operations in various environments.					
<b>FY 2023 Plans:</b> N/A					
<b>FY 2024 Base Plans:</b> Fabricate All Up Rounds hardware (160 units) for operational, certification, and developmental testing and initial production demonstration. Complete software, warhead, launcher, and Automatic Target Recognition (ATR)					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System		Project (Number/Name) 1130 / Expeditionary Loitering Munitions Capability Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
development. Complete vulnerability analysis. Perform production readiness and supply base assessments, finalize production line stand-up and non-recurring engineering, complete production technical data packages, system readiness plans, operational training materials, and in-service support plans.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to the transition of an ONR Innovative Naval Prototype to an Urgent Capability Acquisition Pathway, including hardware fabrication, software development, production readiness efforts, and completion of technical data packages and supporting system materials.						
<b>Title:</b> TEST AND EVALUATION  <div>Articles:</div> <b>Description:</b> Project GOALKEEPER is a Navy loitering munition program designed to meet a Geographic Combatant Commander Joint Emergent Operational Need (JEON). GOALKEEPER will leverage and continue prior development efforts including an Office of Naval Research (ONR) Innovative Naval Prototype (INP). The Navy is pursuing a commercial-off-the-shelf solution with autonomous government-provided software and a government-provided launcher system. The system will be expeditionary and deployable by small teams to support operations in various environments.  <b>FY 2023 Plans:</b> N/A  <b>FY 2024 Base Plans:</b> Conduct developmental testing, certification testing, operational testing, munitions qualification, and software validation/verification. Provide test ranges and test support.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to the transition of an ONR Innovative Naval Prototype to an Urgent Capability Acquisition Pathway, including test ranges, test support resources and equipment, system qualification and verification, and developmental and operational test execution.		0.000 -	0.000 -	14.500 -	0.000 -	14.500 -
<b>Title:</b> PROGRAM MANAGEMENT		0.000	0.000	4.000	0.000	4.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023							
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System		Project (Number/Name) 1130 / Expeditionary Loitering Munitions Capability Development							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
Articles:				-	-	-	-	-			
Description: Project GOALKEEPER is a Navy loitering munition program designed to meet a Geographic Combatant Commander Joint Emergent Operational Need (JEON). GOALKEEPER will leverage and continue prior development efforts including an Office of Naval Research (ONR) Innovative Naval Prototype (INP). The Navy is pursuing a commercial-off-the-shelf solution with autonomous government-provided software and a government-provided launcher system. The system will be expeditionary and deployable by small teams to support operations in various environments.											
FY 2023 Plans: N/A											
FY 2024 Base Plans: Provide program management, acquisition, logistics, and technical oversight of contractor fabrication efforts and production readiness. Review and approve contract deliverables, design products, and manufacturing processes. Provide management of system testing, qualifications, and safety certifications. Manage Government-furnished equipment. Execute contract actions and develop acquisition plans and documentation.											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to the transition of an ONR Innovative Naval Prototype to an Urgent Capability Acquisition Pathway, including personnel and resources to manage/oversee the contract, acquisition documents, and technical data products.											
Accomplishments/Planned Programs Subtotals				0.000	0.000	93.600	0.000	93.600			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• PANMC/1776: EXPEDITIONARY LOITERING MUNITIONS	0.000	13.000	249.575	-	249.575	510.005	0.000	0.001	0.232	0.000	772.813
Remarks Concurrent RDTEN and PANMC funding is due to the completion of operational assessment and initiation of full rate production.											



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 1130 / Expeditionary Loitering Munitions Capability Development
<p><b>D. Acquisition Strategy</b></p> <p>Project GOALKEEPER is a Navy loitering munition program designed to meet a Geographic Combatant Commander Joint Emergent Operational Need (JEON). Project GOALKEEPER is an Urgent Capability Acquisition Pathway (UCAP) that will leverage and continue prior development efforts including an Office of Naval Research (ONR) Innovative Naval Prototype (INP), as well as the simultaneous use of RDTEN and PANMC to meet the operational timeline for capability fielding. Concurrent RDTEN and PANMC funding is due to the urgent need to begin production, mitigate supply chain challenges, and a stabilize a system baseline design that can be procured while software spiral development, optimized warhead development, and test and evaluation are completed. The system architecture shall be modular and extensible to allow for capability upgrades and periodic technology refresh. The GOALKEEPER program will transition the solution developed under the ONR INP in order to meet the JEON fielding timeline. A Technical Data Package is under development to allow for industry competition if this effort transitions into a program of record.</p>		

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604230N / Warfare Support System

## Project (Number/Name)

1130 / Expeditionary Loitering Munitions  
Capability Development

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Automatic Target Recognition	C/CPFF	Aeroenvironment : Simi Valley, CA	0.000	0.000		0.000		4.600	Nov 2023	-		4.600	Continuing	Continuing	Continuing
Software development	C/CPFF	GTRI : Atlanta, GA	0.000	0.000		0.000		7.500	Nov 2023	-		7.500	Continuing	Continuing	Continuing
Launcher Design	WR	NSWC Panama City : Panama City, FL	0.000	0.000		0.000		2.500	Oct 2023	-		2.500	Continuing	Continuing	Continuing
Warhead Development	WR	NSWC IHD : Indian Head, MD	0.000	0.000		0.000		1.500	Oct 2023	-		1.500	Continuing	Continuing	Continuing
All Up Round Hardware	SS/CPFF	Raytheon : Waltham, MA	0.000	0.000		0.000		43.900	Nov 2023	-		43.900	0.000	43.900	-
Vulnerability Analysis	WR	NSWC Carderock : Bethesda, MD	0.000	0.000		0.000		1.300	Oct 2023	-		1.300	Continuing	Continuing	Continuing
Production Readiness	Various	Raytheon : Waltham, MA	0.000	0.000		0.000		11.200	Dec 2023	-		11.200	Continuing	Continuing	Continuing
Training Development	TBD	Raytheon : Waltham, MA	0.000	0.000		0.000		2.600	Nov 2023	-		2.600	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.000		0.000		75.100		-		75.100	Continuing	Continuing	N/A

## Test and Evaluation (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	San Clemente Island : San Clemente Is. CA	0.000	0.000		0.000		2.250	Nov 2023	-		2.250	0.000	2.250	-
Operational Test & Evaluation (OT&E)	WR	MCOTEA : Quantico, VA	0.000	0.000		0.000		1.250	Oct 2023	-		1.250	0.000	1.250	-
Developmental Test & Evaluation (DT&E)	WR	NSWC IHD : Indian Head, MD	0.000	0.000		0.000		1.500	Nov 2023	-		1.500	0.000	1.500	-
Operational Test & Evaluation (OT&E)	Various	Raytheon : Waltham, MA	0.000	0.000		0.000		8.000	Nov 2023	-		8.000	0.000	8.000	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604230N / Warfare Support System						<b>Project (Number/Name)</b> 1130 / Expeditionary Loitering Munitions Capability Development			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		1.500	Nov 2023	-		1.500	0.000	1.500	-
<b>Subtotal</b>			0.000	0.000		0.000		14.500		-		14.500	0.000	14.500	N/A
<b>Remarks</b> Operational Assessment to be conducted with test assets purchased in FY23 under PE 0603382N PU 3423															
<b>Management Services (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Management	TBD	TBD : TBD	0.000	0.000		0.000		4.000	Oct 2023	-		4.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.000		0.000		4.000		-		4.000	Continuing	Continuing	N/A
			<b>Prior Years</b>	<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			0.000	0.000		0.000		93.600		-		93.600	Continuing	Continuing	N/A
<b>Remarks</b> Schedule on the next page reflects event timeline required to meet Initial Operating Capability (IOC) and Full Operating Capability (FOC) dates. Program is currently leveraging FY23 funding under PE 0603382N, PU 3423 LOCUST, an Innovative Naval Prototype under the Office of Naval Research to transition efforts depicted in the schedule.															

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### 1130 / Expeditionary Loitering Munitions Capability Development

Proj 1130		FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Loitering Munition Development																													
ONR INP (PE 0603382N PU 3423)										ATR, Software, Launcher, and Warhead Final Integration																			
System Transition										All Up Round Hardware Fabrication for Test								Technology Development											
										Training Development																			
Test and Evaluation										Operational Assessment																			
										Developmental Test and System Certification																			
Production Readiness										Production Readiness																			
Production (PANMC LI 1776)										Option Award ▼				Option Award ▼				IOC ▲				Option Award ▼				FOC ▲			
										Production																			

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604230N / Warfare Support System

Project (Number/Name)

1130 / Expeditionary Loitering Munitions  
Capability Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1130</b>				
Loitering Munition Development: ONR INP (PE 0603382N PU 3423): ONR INP	1	2022	4	2023
Loitering Munition Development: System Transition: ATR, Software, Launcher, and Warhead Final Integration	1	2024	2	2024
Loitering Munition Development: System Transition: All Up Round Hardware Fabrication for Test	1	2024	2	2024
Loitering Munition Development: System Transition: Technology Development	1	2025	4	2028
Loitering Munition Development: System Transition: Training Development	1	2024	4	2025
Loitering Munition Development: Test and Evaluation: Operational Test	1	2024	2	2024
Loitering Munition Development: Test and Evaluation: Developmental Test	1	2024	4	2025
Loitering Munition Development: Production Readiness: Production Readiness	1	2024	2	2024
Loitering Munition Development: Production (PANMC LI 1776): Milestone	4	2025	4	2025
Loitering Munition Development: Production (PANMC LI 1776): Milestone2	4	2026	4	2026
Loitering Munition Development: Production (PANMC LI 1776): Award1	2	2024	2	2024
Loitering Munition Development: Production (PANMC LI 1776): Award2	2	2025	2	2025
Loitering Munition Development: Production (PANMC LI 1776): Award3	2	2026	2	2026
Loitering Munition Development: Production (PANMC LI 1776): Production	2	2024	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3326: NSW Rapid Capabilities Development for CIEC	57.469	8.962	8.181	12.159	-	12.159	17.074	11.995	9.654	9.847	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Rapid Capabilities Development (RCD) program supports the Naval Special Warfare (NSW) Branch by identifying and assessing available technologies that confront current and future irregular and expeditionary warfare challenges. Program development efforts focus on the enhancement/advancement of existing technologies to fill urgent and emergent capability gaps for NSW. Program funding provides for the development, integration, testing, validation, combat demonstration, and evaluation of identified technologies to meet operational requirements; service-common and NSW program technology challenges; and technology obsolescence issues of developed capabilities.

The RCD program develops expeditionary/operational capabilities that enable NSW forces to conduct joint cross-domain special reconnaissance, counterterrorism, direct action, amphibious and irregular warfare, and fulfill urgent/emergent needs within a 9-36 month timeframe.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Navy Irregular Warfare	8.962	8.181	12.159	0.000	12.159
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> FY 2023 \$8.181M funding will utilize:					
\$3.250M for Cognitive Router Future Naval Capability (FNC) designed to provide an artificial intelligence-enabled routing node comprised of acoustic and optical underwater modems, Radio Frequency (RF) radios, and vehicle autonomy instantiated on Unmanned Underwater Vehicles (UUVs) to create a robust and clandestine low-latency cross-domain network.					
\$3.897M for manned/unmanned systems payload development (fiber optic, scalable effects (kinetic/non-kinetic), data security) designed to improve operator situational awareness, tactical maneuver, improved digital security, and lethality on the battlefield; machine learning designed to supplement human decision-making, communications and navigation in denied environments; and integration of these systems aboard NSW undersea and surface mobility assets and systems.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System		Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>\$1.034M for continuing advancement of FY22/23 prototyping efforts and field evaluation of developing technologies, and Broad Area Announcement, Small Business Innovative Research processes for the identification of technologies that enhance and/or accelerate expeditionary and irregular capabilities in support of NSW capability challenges.</p> <p><b>FY 2024 Base Plans:</b> FY 2024 \$12.159M funding will utilize:</p> <p>\$6.00M for Cognitive Router FNC designed to provide an artificial intelligence-enabled routing node comprised of acoustic and optical underwater modems, RF radios, and vehicle autonomy instantiated on UUVs to create a robust and clandestine low-latency cross-domain network.</p> <p>\$5.069M for manned/unmanned systems payload development (fiber optic, scalable effects (kinetic/non-kinetic), data security) designed to improve operator situational awareness, tactical maneuver, improved digital security, and lethality on the battlefield; machine learning designed to supplement human decision-making, communications and navigation in denied environments; and integration of these systems aboard NSW undersea and surface mobility assets and systems.</p> <p>\$1.09M for continuing advancement of FY23/24 prototyping efforts and field evaluation of developing technologies, and Broad Area Announcement, Small Business Innovative Research processes for the identification of technologies that enhance and/or accelerate expeditionary and irregular capabilities in support of NSW capability challenges.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Per signed agreement between OPNAV N95 and Office of Naval Research (ONR), funding increase from FY23 (\$8.181M) to FY24 (\$12.159M) is due to support the FY23 ONR-approved Future Naval Capability project (\$3.250M), Cognitive Router, and development of artificial intelligence, machine learning, and unmanned systems' payloads that enable manned, unmanned teaming concepts of operations.</p>					
Accomplishments/Planned Programs Subtotals	8.962	8.181	12.159	0.000	12.159

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy Conduct initial validation of component-specific capability gaps. Identify technical requirements necessary to meet immediate and future warfighter needs; integrate existing unique and/or related capabilities that can best meet the identified operational requirements; conduct test and evaluation; and then demonstrate in real time and/or during planned operations within a 9-36 month period. Endeavor to leverage existing mature technologies to take advantage of investments already made to reduce cost and time to market; and seek out cost-sharing opportunities with other resource sponsors to make program funding more effective for the end-user.		



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604230N / Warfare Support System						<b>Project (Number/Name)</b> 3326 / NSW Rapid Capabilities Development for CIEC			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Management Spt	C/CPFF	Dell : Washington, DC	0.625	0.000		0.000		0.000		-		0.000	0.000	0.625	-
Program Management Spt	C/CPAF	Cydecor : Arlington, VA	0.655	0.075	Jan 2022	0.000		0.087	Jan 2024	-		0.087	Continuing	Continuing	Continuing
Travel	WR	NAVSEA/HQ : Washington, DC	0.499	0.015	Oct 2021	0.025	Oct 2022	0.025	Oct 2023	-		0.025	Continuing	Continuing	Continuing
Program Management Spt	WR	NAVSEA/HQ : Washington, DC	0.256	0.000		0.063	Oct 2022	0.020	Oct 2023	-		0.020	0.000	0.339	-
Program Management Spt	WR	NSWC : Crane, IN	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Program Management Spt	WR	NSWC : Dahlgren, VA	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Program Management Spt	WR	NSWC : Panama City, FL	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Program Management Spt	WR	NSWC : Carderock, MD	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Program Management Spt	WR	NUWC : Newport, RI	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
<b>Subtotal</b>			2.535	0.090		0.088		0.132		-		0.132	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	NUWC : Newport, RI	5.015	1.944	Dec 2021	1.385	Oct 2022	2.400	Feb 2024	-		2.400	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAWC : China Lake, CA	0.595	0.000		0.000		0.000		-		0.000	0.000	0.595	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC : Carderock, MD	2.032	0.000		0.000		0.000		-		0.000	0.000	2.032	Continuing
Developmental Test & Evaluation (DT&E)	SS/CPFF	ARL/UT : Austin, TX	2.077	1.150	Dec 2021	1.129	Oct 2022	2.400	Dec 2023	-		2.400	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	SPAWAR : San Diego, CA	2.450	0.000		0.000		0.000		-		0.000	0.000	2.450	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	SPAWAR : Charleston, SC	1.050	0.000		0.000		0.000		-		0.000	0.000	1.050	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/FFP	ARL/PSU : State College, PA	1.540	0.000		0.000		0.000		-		0.000	0.000	1.540	Continuing
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	1.915	0.943	Dec 2021	1.100	Oct 2022	1.400	Dec 2023	-		1.400	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC : Indian Head, MD	1.862	0.000		0.000		0.000		-		0.000	0.000	1.862	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	2.275	0.172	Jun 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC : Panama City, FL	0.539	0.186	Jun 2022	2.694	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	NSWC : Dahlgren, VA	3.090	0.000		0.000		0.000		-		0.000	0.000	3.090	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	APL/JHU : Laurel, MD	0.327	0.000		0.000		0.000		-		0.000	0.000	0.327	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	Army Research Lab. : Adelphia, MD	0.247	0.000		0.000		0.000		-		0.000	0.000	0.247	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	PNNL : Richland, WA	0.130	0.000		0.000		0.000		-		0.000	0.000	0.130	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	Georgia Tech : Atlanta, GA	1.634	0.000		0.000		0.000		-		0.000	0.000	1.634	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	Charles River : Cambridge, MA	0.521	0.000		0.000		0.000		-		0.000	0.000	0.521	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	L3 Comm : Burlington, MA	0.972	0.000		0.000		0.000		-		0.000	0.000	0.972	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	QinetiQ NA : Waltham, MA	0.704	0.000		0.000		0.000		-		0.000	0.000	0.704	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAVAIR : Patuxent, MD	1.335	0.000		0.000		0.000		-		0.000	0.000	1.335	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	Strategos Consulting : Coronado, Ca	0.178	0.000		0.000		0.000		-		0.000	0.000	0.178	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAVAIR : San Diego, CA	0.425	0.000		0.000		0.000		-		0.000	0.000	0.425	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	NSMA : Wash, DC	3.069	0.000		0.000		0.000		-		0.000	0.000	3.069	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	Advanced Systems : Manassas, VA	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	NAVSEA : Washington, DC	3.260	0.000		0.000		0.000		-		0.000	0.000	3.260	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC : Crane, IN	1.136	0.091	May 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Reqn	ANL : Chicago, IL	0.114	0.000		0.000		0.000		-		0.000	0.000	0.114	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NUWC : Keyport, RI	0.348	0.000		0.000		0.000		-		0.000	0.000	0.348	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	General Atomics : San Diego, CA	1.923	0.000		0.000		0.000		-		0.000	0.000	1.923	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	ASSETT : Manassas, VA	1.032	0.000		0.000		0.000		-		0.000	0.000	1.032	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	Battelle : Columbus, OH	1.869	0.000		0.000		0.000		-		0.000	0.000	1.869	-
Developmental Test & Evaluation (DT&E)	SS/CPFF	WHOI : Woods Hole, MA	0.225	1.212	Jun 2022	0.000		2.500	Jan 2024	-		2.500	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	Boeing : Seattle, WA	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	AeroVironment : Monrovia, CA	0.525	0.000		0.000		0.000		-		0.000	0.000	0.525	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	Northrup Grumman : Falls Church, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	IN POWER : Morrisville, NC	0.292	0.000		0.000		0.000		-		0.000	0.000	0.292	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Panama City, FL	1.368	0.438	Jan 2022	0.250	Oct 2022	0.725	Nov 2023	-		0.725	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC : Corona, CA	0.133	0.000		0.000		0.000		-		0.000	0.000	0.133	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	MIPR	Army : Ft Belvoir Va	1.295	0.000		0.070	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Reqn	NPS : Dayton OH	1.400	0.000		0.000		0.000		-		0.000	0.000	1.400	-
Developmental Test & Evaluation (DT&E)	MIPR	DTIC : FT Belvoir Va	2.200	0.102	Jun 2022	0.945	Oct 2022	0.602	Jun 2024	-		0.602	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	DLA : Ft Belvoir Va	2.840	0.369	Jun 2022	0.520	Oct 2022	2.000	Jan 2024	-		2.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	MIPR	WPAB : Wright Patterson, OH	0.542	0.065	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	SS/CPFF	Paragon Space : Tucson, AZ	0.000	0.200	Jul 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC Crane : Crane, IN	0.000	1.341	Aug 2022	0.000		0.000		-		0.000	0.000	1.341	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPAF	DTIC : FT Belvoir, VA	0.000	0.659	Aug 2022	0.000		0.000		-		0.000	0.000	0.659	-
Subtotal			54.934	8.872		8.093		12.027		-		12.027	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			57.469	8.962		8.181		12.159		-		12.159	Continuing	Continuing	N/A
Remarks															
+\$4M added for FY23 for PE 0604230N/C884 NSW Unmanned Vehicle Development C5RC															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023																			
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System										Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC									

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3326																												
System Development: Technology Assessments/Demonstrations																												
System Development: Test and Evaluations																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 3326 / NSW Rapid Capabilities Development for CIEC

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3326</i>				
System Development: Technology Assessments/Demonstrations	1	2022	4	2024
System Development: Test and Evaluations	1	2022	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3445 / Visual Augmentation System Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3445: Visual Augmentation System Development	0.000	1.142	1.184	1.248	-	1.248	1.261	1.289	1.314	1.342	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The United States Navy Service Common Visual Augmentation Systems (VAS) Program of Record manages, procures, and maintains night vision devices, thermal detection devices, day/night weapons optics, and lasers in support of Navy combat capabilities with regard to the detection, recognition, classification, tracking, and destruction of hostile air and surface forces. The USN VAS Program also manages research into the future of visual augmentation systems and engages with Navy and DoD VAS stakeholders to ensure the Navy maintains competitive advantage over near-peer adversaries.

Research, Development, Test and Evaluation, Navy funding provides the United States Navy Service Common Visual Augmentation Systems (VAS) Program of Record with the ability to maintain competitive advantage over the nation's near peer adversaries by leveraging the military research community, other DoD VAS programs, academia and commercial industry in order to transition mature technologies (active, passive, multi-domain imaging sensors, laser systems, display systems, optics, image processing) that align with US Navy and DoD priorities.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Visual Augmentation Systems	1.142	1.184	1.248	0.000	1.248
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> VAS RDT&E efforts to address the following DoN VAS capability gaps in addition to assessment for projections of any future capability gaps: Flight/Well Deck Crew Binocular Night Vision Device (BNVD) Long Range Night Vision Sight for Ship's Navigation Ranging Device Laser Designator Option Thermal Family of Systems Small Arms Collimator Future Capability Assessment					
<b>FY 2024 Base Plans:</b>					



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604230N / Warfare Support System		<b>Project (Number/Name)</b> 3445 / Visual Augmentation System Development	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
VAS RDT&E efforts to continue to address the following DoN VAS Capability gaps in addition to continue to monitor/determine inventory for potential future capability gaps: Long Range Night Vision Sight for Ship's Navigation Laser Family of Systems / Ranging and Designators Thermal Family of Systems Small Arms Collimator Future Capability Assessment  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> The slight increase in funding from FY23 to FY24 is due to support increases.					
<b>Accomplishments/Planned Programs Subtotals</b>	1.142	1.184	1.248	0.000	1.248

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/8128: NCW Forces Active	107.448	107.372	108.901	-	108.901	122.971	120.019	122.098	124.946	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

DoN VAS Service Common VAS RDT&E efforts to support modernization/standardization of VAS equipment and address DoN VAS capability gaps and legacy/obsolescence projections to fill in any further capability gaps.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3445 / Visual Augmentation System Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC Crane : Crane, IN	0.000	0.210	Nov 2021	0.000		0.000		-		0.000	0.000	0.210	-
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	0.000	0.059	Nov 2021	0.566	Jan 2023	0.312	Nov 2023	-		0.312	0.000	0.937	-
Operational Test & Evaluation (OT&E)	WR	NSWC Crane : Crane, IN	0.000	0.000	Nov 2021	0.025	Jan 2023	0.000	Sep 2024	-		0.000	0.000	0.025	-
Subtotal			0.000	0.269		0.591		0.312		-		0.312	0.000	1.172	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NSWC Crane : Crane, IN	0.000	0.108	Nov 2021	0.005	Nov 2022	0.121	Nov 2023	-		0.121	Continuing	Continuing	Continuing
Flight Well Deck Crew Binocular Night Vision	WR	NSWC Crane : Crane, IN	0.000	0.148	Nov 2021	0.032	Nov 2022	0.000		-		0.000	0.000	0.180	-
Long Range Night Vision Sight for Ship's Navigation	WR	NSWC Crane : Crane, IN	0.000	0.169	Nov 2021	0.076	Nov 2022	0.058	Sep 2024	-		0.058	0.000	0.303	-
Ranging Device	WR	NSWC Crane : Crane, IN	0.000	0.214	Nov 2021	0.076	Nov 2022	0.000		-		0.000	0.000	0.290	-
Laser Designator Option	WR	NSWC Crane : Crane, IN	0.000	0.000		0.075	Nov 2022	0.000		-		0.000	0.000	0.075	-
Thermal Family of Systems	WR	NSWC Crane : Crane, IN	0.000	0.000		0.197	Nov 2022	0.080	Sep 2024	-		0.080	0.000	0.277	-
Small Arms Collimator	WR	NSWC Crane : Crane, IN	0.000	0.000		0.057	Nov 2022	0.156	Sep 2024	-		0.156	0.000	0.213	-
Future Capability	WR	NSWC Crane : Crane, IN	0.000	0.000		0.075	Nov 2022	0.241	Sep 2024	-		0.241	0.000	0.316	-
TDA Review VAS Portfolio	WR	NSWC Crane : Crane, IN	0.000	0.181	Nov 2021	0.000		0.000		-		0.000	0.000	0.181	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System						Project (Number/Name) 3445 / Visual Augmentation System Development			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fire Control Evaluation	WR	NSWC Crane : Crane, IN	0.000	0.053	Nov 2021	0.000		0.000		-		0.000	0.000	0.053	-
Laser Family of Systems-Ranging and Designators	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.280	Nov 2023	-		0.280	0.000	0.280	-
Subtotal			0.000	0.873		0.593		0.936		-		0.936	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	1.142		1.184		1.248		-		1.248	Continuing	Continuing	N/A
Remarks															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5			<b>R-1 Program Element (Number/Name)</b> PE 0604230N / Warfare Support System		
			<b>Project (Number/Name)</b> 3445 / Visual Augmentation System Development		

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Proj 3445</b>																												
System Development: Technology & Obsolescence Replacement Road Map																												
System Development: Capability Gap Test & Evaluation																												
System Development: Flight/Well Deck Crew Binocular Night Vision Device (BNVD)																												
System Development: Long Range Night Vision Sight for Ship's Navigation																												
System Development: Ranging Devices																												
System Development: Laser Designator Option																												
System Development: Thermal Family of Systems																												
System Development: Small Arms																												
System Development: Future Capability																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 3445 / Visual Augmentation System Development	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3445</b>				
System Development: Technology & Obsolescence Replacement Road Map	1	2022	4	2024
System Development: Capability Gap Test & Evaluation	1	2022	4	2024
System Development: Flight/Well Deck Crew Binocular Night Vision Device (BNVD)	1	2023	2	2024
System Development: Long Range Night Vision Sight for Ship's Navigation	1	2023	3	2024
System Development: Ranging Devices	1	2023	1	2024
System Development: Laser Designator Option	1	2023	3	2024
System Development: Thermal Family of Systems	1	2023	4	2024
System Development: Small Arms	1	2023	4	2024
System Development: Future Capability	1	2023	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3446 / Expeditionary sUAS Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3446: Expeditionary sUAS Development	0.000	0.244	1.273	0.687	-	0.687	0.882	0.887	0.590	0.602	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Navy Family of Small Unmanned Aircraft Systems (FoSUAS) program supports Naval Special Warfare (NSW) and Navy Expeditionary Combat Command (NECC), as well as Expeditionary Exploitation Unit ONE (EXU-1) and Naval School Explosive Ordnance Disposal (NAVSCOLEOD). The program procures existing and emerging technologies (including enhancement kits/payloads) in Fixed Wing (FW) and Vertical Take Off and Landing (VTOL) solution sets for core mission requirements and are critical in providing force protection, reconnaissance and surveillance, and repair of battle-damaged facilities and other infrastructure. FoSUAS includes Short Range/ Short Endurance (SR/SE) and Medium Range/ Medium Endurance (MR/ME) categories of Small Unmanned Aircraft Systems (SUAS) with each category tailored toward specific mission needs/profiles. As such, a mix of Type/Model/Series (T/M/S) SUAS makes up the FoSUAS Program of Record (POR) as addressed in the Navy's FoSUAS Top Level Requirement (TLR) document.

In addition to supporting the requirements in the Rucksack Portable Unmanned Aircraft Vehicle (RPUAV) Operational Requirements Document (ORD) and Navy FoSUAS TLR, RDTE funding for the FoSUAS program conducts activities including, but not be limited to, engineering analysis of commercial systems, operational assessments, Field User Evaluations (FUEs), support of Urgent Universal Needs Statements (UUNS), cyber/IA assessments, development of SUAS Reusable Architectures (SRA) and other efforts to inform future Navy systems procurements.

FY23 to FY24 decrease due to a reduction of technology demonstration, verification, and validation efforts.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Product Development	0.000	0.000	0.163	0.000	0.163
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> N/A					
<b>FY 2024 Base Plans:</b> -SRA Development					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System		Project (Number/Name) 3446 / Expeditionary sUAS Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY23 to FY24 increase due to addition of Product Development subsection, all prior year funding was included in Test and Evaluation subsection.						
Title: Support		0.000	0.000	0.247	0.000	0.247
Articles:		-	-	-	-	-
FY 2023 Plans: N/A						
FY 2024 Base Plans: - Conduct engineering analysis of commercial systems. - Conduct market research and facilitate technical demonstrations of emerging technology. - Complete initial (on new components) and mandatory recurring engineering assessments including, but not be limited to, cyber security, air worthiness, flight clearances, authority to operate, and battery certification of FoSUAS.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY23 to FY24 increase due to addition of Support subsection, all prior year funding was included in Test and Evaluation subsection.						
Title: Test and Evaluation		0.244	1.273	0.277	0.000	0.277
Articles:		-	-	-	-	-
FY 2023 Plans: - Continued integration and operational assessment of SRA for FoSUAS platforms. - Assessment via technology demonstrations, field user evaluations, and market research of low cost, commercially available UAS to inform future procurements and determine potential adversary capabilities. - Provide engineering analysis for coordinated Field User Evaluations of alternative FoSUAS solutions. - Assessment of UAS and payload capabilities as a means to facilitate/better enable Naval Expeditionary Forces in identifying effective alternatives to meet capability requirements.						
FY 2024 Base Plans: - Continued integration, operational assessment, and implementation of SRA for FoSUAS platforms. - Assessment via technology demonstrations, field user evaluations, lab analysis/testing, and market research of low cost, commercially available UAS to inform future procurements.						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604230N / Warfare Support System		<b>Project (Number/Name)</b> 3446 / Expeditionary sUAS Development	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>				<b>FY 2022</b>	<b>FY 2023</b>
- Assessment of UAS, software applications, payload/sensor capabilities, and other UAS ancillary components.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease in FY24 is due to completion of Field User Requirements in FY23.					
<b>Accomplishments/Planned Programs Subtotals</b>				0.244	1.273
				0.687	0.000
				0.687	
<b>C. Other Program Funding Summary (\$ in Millions)</b>					
N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b>					
The program office is pursuing an acquisition approach to quickly field new technology and capabilities to the warfighter. The acquisition strategy is to conduct iterative reviews of emerging SUAS technology and to leverage incremental developments of commercial SUAS in coordination with OPNAV, NSW, NECC, and other Navy activities in order to satisfy validated FoSUAS requirements.					



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 3446 / Expeditionary sUAS Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SRA Analysis and Integration	WR	NAWCAD : PAX RIVER, MD	0.000	0.050	May 2022	0.274	May 2023	0.163	Jan 2024	-		0.163	Continuing	Continuing	Continuing
Subtotal			0.000	0.050		0.274		0.163		-		0.163	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Commercial UAS Analysis/ Cyber Security/IA	WR	NAWCAD : PAX RIVER, MD	0.000	0.075	May 2022	0.200	Mar 2023	0.124	Mar 2024	-		0.124	Continuing	Continuing	Continuing
Engineering Analysis	WR	NAWCAD : PAX RIVER, MD	0.000	0.020	Nov 2022	0.199	Mar 2023	0.123	Nov 2023	-		0.123	Continuing	Continuing	Continuing
Subtotal			0.000	0.095		0.399		0.247		-		0.247	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	VARIOUS : VARIOUS	0.000	0.099	Jan 2022	0.600	Jan 2023	0.277	Jan 2024	-		0.277	Continuing	Continuing	Continuing
Subtotal			0.000	0.099		0.600		0.277		-		0.277	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.244		1.273		0.687		-		0.687	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

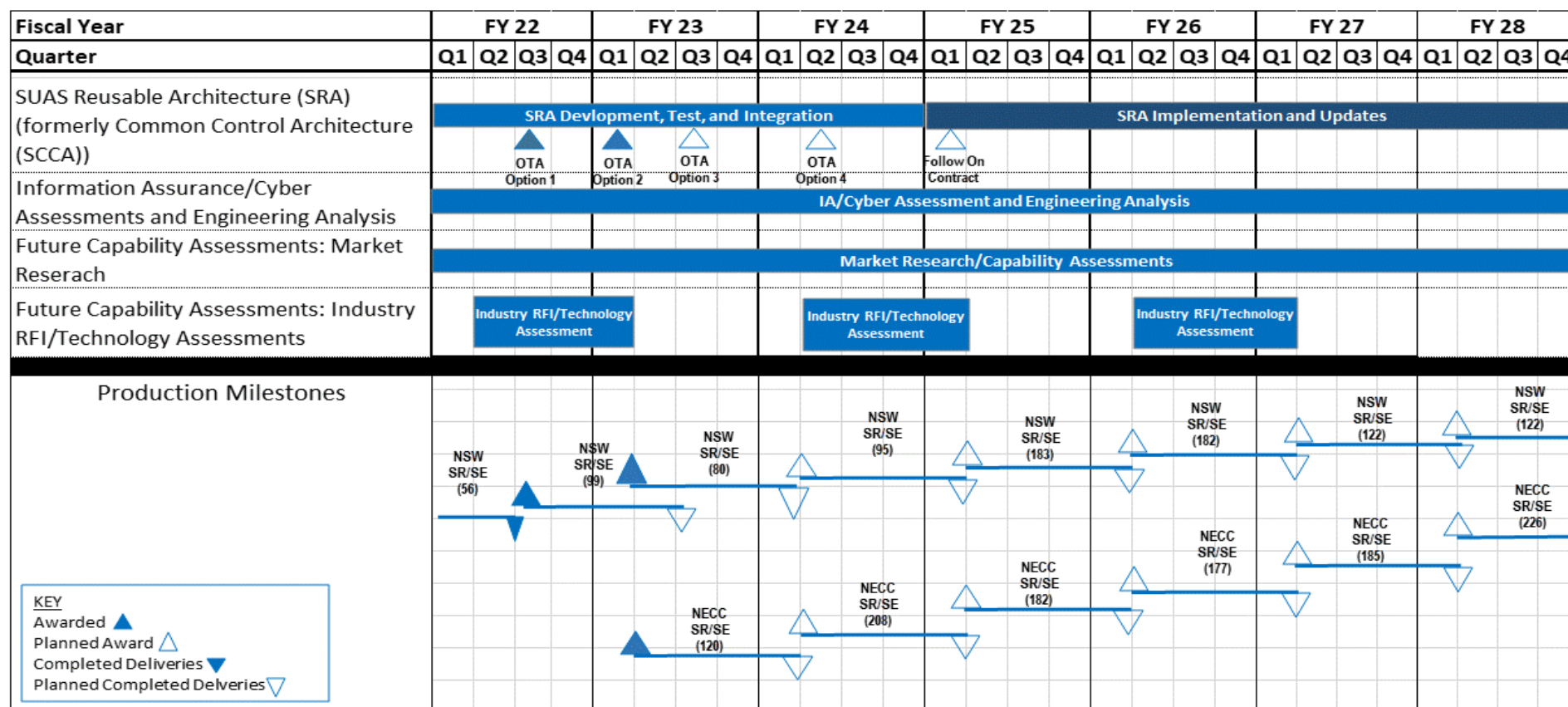
1319 / 5

R-1 Program Element (Number/Name)

PE 0604230N / Warfare Support System

Project (Number/Name)

3446 / Expeditionary sUAS Development



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604230N / Warfare Support System

Project (Number/Name)

3446 / Expeditionary sUAS Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3446</b>				
SUAS Reusable Architecture (SRA): SRA Development and Integration Verification	1	2022	4	2024
SUAS Reusable Architecture (SRA): SRA Implementation and Updates	1	2025	1	2028
SUAS Reusable Architecture (SRA): OTA Option 1	3	2022	3	2022
SUAS Reusable Architecture (SRA): OTA Option 2	1	2023	1	2023
SUAS Reusable Architecture (SRA): OTA Option 3	3	2023	3	2023
SUAS Reusable Architecture (SRA): OTA Option 4	2	2024	2	2024
SUAS Reusable Architecture (SRA): Follow on contract	1	2025	1	2025
Information Assurance/Cyber Assessments: IA/Cyber Assessment	1	2022	4	2028
Future Capability Assessments: Market Research/Capability Assessments	1	2022	4	2028
Future Capability Assessments: FY22 Industry RFI/Technology Assessment	2	2022	2	2023
Future Capability Assessments: FY24 Industry RFI/Technology Assessment	2	2024	2	2025
Future Capability Assessments: FY26 Industry RFI/Technology Assessment	2	2026	2	2027
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY22 SR/SE	3	2022	3	2022
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY23 SR/SE	2	2023	2	2023
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY24 SR/SE	2	2024	2	2024
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY25 SR/SE	2	2025	2	2025
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY26 SR/SE	2	2026	2	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System		Project (Number/Name) 3446 / Expeditionary sUAS Development
Events by Sub Project		Start		End
		Quarter	Year	Quarter Year
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY27 SR/SE		2	2027	2 2027
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY23 NECC SR/SE		2	2023	2 2023
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY24 NECC SR/SE		2	2024	2 2024
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY25 NECC SR/SE		2	2025	2 2025
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY26 NECC SR/SE		2	2026	2 2026
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY27 NECC SR/SE		2	2027	2 2027
Production Milestones: MIPR Orders: Production Milestones: MIPR Orders: FY28 NECC SR/SE		2	2028	2 2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
4011: Naval Coastal Warfare Surv and C4I Sys	50.919	0.781	0.803	0.849	-	0.849	0.856	0.871	0.890	0.907	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Identity Dominance System (IDS) supports the Navy's Visit, Board, Search and Seizure (VBSS) teams conducting Expanded Maritime Interception Operations (MIO) with a biometric capability. IDS provides the Navy with a means to collect and process identity information in the conduct of maritime and expeditionary operations. There are three key aspects of this capability: 1) Enable forces to rapidly identify unknown individuals encountered in the conduct of operations. 2) Verify an unknown individual's claimed identity. 3) Enable forces to update, manage, and share identity information on friendly, neutral, and enemy individuals in support of identity operations (IdOps). To support IdOps and achieve identity dominance for expeditionary and naval forces, the future biometrics collection and processing equipment needs to be smaller, lighter, and more efficient with respect to computing power and speed when compared against the current system. The equipment needs to take advantage of enhanced communications capabilities, be able to store the appropriate amount of data to collect biometric samples, match the samples against an internal database and reach near real time operations with connectivity to the DoD biometrics database. In addition to Navy VBSS MIO, IDS also supports the Expeditionary Exploitation Unit One (EXU-1) expeditionary missions. IDS must continue to mature and adapt to the changing threat environment and emerging requirements to support these missions.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Identity Dominance System	0.781	0.803	0.849	0.000	0.849
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The Identity Dominance System (IDS) is completing a technology refresh to field a sustainable system, reduce maintenance and sustainment costs, improve system capabilities, and eliminate performance shortfalls.					
<b>FY 2023 Plans:</b> The IDS tech refresh system hardware will have been delivered in Q4FY23. Integration efforts of S/W and H/W will be completed and fielding will occur in FY24. RMF and cybersecurity assessments will be conducted to ensure system authority to Operate (ATO) completed prior to fielding . Fielding a tech refresh of IDS will increase the capability and reliability to support the Identity Operations and Force Protection efforts.					
<b>FY 2024 Base Plans:</b> The IDS tech refresh system will be updated via Engineering Change Proposals for enhancements, Information Assurance, and S/W or H/W changes which ensure systems are not vulnerable to cyber attacks. IDS will					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604230N / Warfare Support System		<b>Project (Number/Name)</b> 4011 / Naval Coastal Warfare Surv and C4I Sys	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
increase and support the Identity Operations and Force Protection efforts to those individuals deployed. The continued efforts of building a database of suspected enemies to the United States will allow potential threats to be identified at foreign access control points and in international waters.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding increase supports the cybersecurity requirements for the technology refresh system and the engineering changes required to implement.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.781	0.803	0.849	0.000	0.849

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/8128: Biometrics	0.250	0.250	0.250	-	0.250	0.250	0.250	0.250	0.250	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Identity Dominance System (IDS) will continue to provide a biometric capability to the Navy's expeditionary/forward deployed forces through system upgrades and further collaboration with other biometric stakeholders. The funding supports development and integration of new capabilities designed to enhance the overall performance of IDS and improve our Nation's security posture abroad and in CONUS. The program continually assesses the threat environment, security posture, operational requirements, and DOD and Navy policies related to Identity Operations and Force Protection. The program will evaluate, integrate, and field new capabilities to Maritime and Expeditionary Forces.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering - Expeditionary	WR	NSWC : PANAMA CITY, FL	5.080	0.000		0.000		0.000		-		0.000	0.000	5.080	Continuing
Hardware/Software Development	WR	NSWC DAHLGREN : DAHLGREN	4.016	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware/Software Development	WR	NSWC CRANE : CRANE	1.450	0.000		0.000		0.000		-		0.000	0.000	1.450	Continuing
Systems Engineering - IDS	WR	NSWC : DAHLGREN	7.970	0.315	Nov 2021	0.283	Nov 2022	0.311	Dec 2023	-		0.311	Continuing	Continuing	Continuing
Hardware/Software Development - IDS	WR	NSWC : DAHLGREN	0.991	0.279	Nov 2021	0.398	Nov 2022	0.413	Dec 2023	-		0.413	Continuing	Continuing	Continuing
Product Development Prior Years	Various	Various : Various	10.174	0.000		0.000		0.000		-		0.000	0.000	10.174	10.174
Need Item Text	C/BA	Not Specified : Not Specified	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			29.681	0.594		0.681		0.724		-		0.724	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Data	WR	NSWC : CRANE	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	Continuing
Technical Data	WR	NSWC : DAHLGREN	0.187	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Support Prior Years	Various	Various : Various	5.206	0.000		0.000		0.000		-		0.000	0.000	5.206	5.206
Subtotal			5.653	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC : DAHLGREN	1.013	0.187	Nov 2021	0.122	Nov 2022	0.125	Dec 2023	-		0.125	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC : PANAMA CITY, FL	2.772	0.000		0.000		0.000		-		0.000	0.000	2.772	-
Subtotal			3.785	0.187		0.122		0.125		-		0.125	Continuing	Continuing	N/A
Remarks															
Funding supports testing to address any new software capabilities that are developed.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services Prior Years	Various	Various : Various	0.275	0.000		0.000		0.000		-		0.000	0.000	0.275	0.275
Program Management Support	Various	Various : Various	5.388	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support - IDS	WR	NSWC : DAHLGREN	5.075	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support - IDS	WR	NSWC : CRANE	1.062	0.000		0.000		0.000		-		0.000	0.000	1.062	-
Subtotal			11.800	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			50.919	0.781		0.803		0.849		-		0.849	Continuing	Continuing	N/A
Remarks															



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023											
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System								Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys							

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 4011																												
Acquisition Milestones: Identity Dominance System (IDS): IDS Tech Refresh Fielding																												
Acquisition Milestones: Identity Dominance System (IDS): Milestone - Tech Refresh #2 CCB																												
System Development: Identity Dominance System (IDS): IDS Tech Refresh Information Assurance ECP Development and Validation																												
Production: Identity Dominance System (IDS): IDS Tech Refresh Production contract award																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 4011</b>				
Acquisition Milestones: Identity Dominance System (IDS): IDS Tech Refresh Fielding	4	2023	2	2024
Acquisition Milestones: Identity Dominance System (IDS): Milestone - Tech Refresh #2 CCB	4	2027	4	2027
System Development: Identity Dominance System (IDS): IDS Tech Refresh Information Assurance ECP Development and Validation	1	2022	4	2028
Production: Identity Dominance System (IDS): IDS Tech Refresh Production contract award	1	2023	3	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	6.753	2.894	4.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.647
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Diesel Fuel Outboard Motor Testing project supports the transition of the FY 2015 Rapid Innovation Fund "Affordable Multi-fuel Multi-engine Advanced Combatant Craft" program to the Explosive Ordnance Disposal Force. This technology minimizes the types of fuel required to increase standardization, flexibility, and interoperability during deployment while at the same time reduces total ownership cost. Testing of this technology shall determine the operational viability and any changes required to boat design to ensure safety and suitability.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b>Congressional Add:</b> Operational deployment of diesel-fueled outboard marine motors	2.894	0.000
<b>FY 2022 Accomplishments:</b> Initiated procurement of outboard diesel prototypes and planned additional prototype procurements and testing.		
<b>FY 2023 Plans:</b> Continue to conduct test and evaluation, endurance testing, Fleet observations as well as complete the final report."		
<b>Congressional Add:</b> NSW unmanned vehicle development	0.000	4.000
<b>FY 2022 Accomplishments:</b> N/A		
<b>FY 2023 Plans:</b> \$4M Congressional add received for NSW unmanned vehicle development. Funding will be mobilized to support NSW undersea test, evaluation and prototyping activities.		
<b>Congressional Adds Subtotals</b>	2.894	4.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Diesel Fuel Outboard Motor Transition: If testing proves the engines operational, reliable, feasible and suitable, diesel fuel outboard diesel engines will be transitioned to the Fleet by being installed aboard Explosive Ordnance Disposal Force Craft currently operating as well as for new procurements in FY23.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	Northrop Grumman : San Diego, CA	1.065	0.000		0.000		0.000		-		0.000	0.000	1.065	-
Outboard Diesel Engine Material Solution	C/BOA	PMS300 : Washington, DC	1.200	0.000		0.000		0.000		-		0.000	0.000	1.200	-
Software Development	C/CPFF	Northrop Grumman : San Diego, CA	0.760	0.000		0.000		0.000		-		0.000	0.000	0.760	-
Design Feasibility	WR	NSWC : Carderock, MD	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	-
Systems Engineering	C/CPFF	Northrop Grumman : San Diego, CA	0.675	0.000		0.000		0.000		-		0.000	0.000	0.675	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Carderock, MD	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	-
Final Report	WR	NSWC : Carderock, MD	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Operational deployment of diesel-fueled outboard marine motors	C/BOA	PMS300 : Washington, DC	0.000	2.894	Sep 2022	0.000		0.000		-		0.000	0.000	2.894	-
Subtotal			4.500	2.894		0.000		0.000		-		0.000	0.000	7.394	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC Crane, Crane, IN : Not Specified	0.279	0.000		0.000		0.000		-		0.000	0.000	0.279	-
Advanced Techniques Development	WR	NSWC: Various : Not Specified	0.164	0.000		0.000		0.000		-		0.000	0.000	0.164	-
Ship Integration	WR	NSWC CR, Crane, IN : Not Specified	0.818	0.000		0.000		0.000		-		0.000	0.000	0.818	-
Test and Evaluation	WR	NSWC CR, Crane, IN : Not Specified	0.792	0.000		0.000		0.000		-		0.000	0.000	0.792	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 9999 / Congressional Adds					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NSWC C, Crane, IN : Not Specified	0.200	0.000		0.000		0.000		-		0.000	0.000	0.200	-
Subtotal			2.253	0.000		0.000		0.000		-		0.000	0.000	2.253	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	SS/IDIQ	ARL/UH : Honolulu, HI	0.000	0.000		4.000	Mar 2023	0.000		-		0.000	0.000	4.000	-
Subtotal			0.000	0.000		4.000		0.000		-		0.000	0.000	4.000	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			6.753	2.894		4.000		0.000		-		0.000	0.000	13.647	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity										R-1 Program Element (Number/Name)									
1319 / 5										PE 0604230N / Warfare Support System									
										Project (Number/Name)									
										9999 / Congressional Adds									

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Diesel Fuel Outboard Motor Testing																												
Technology Assessment/Demonstrations																												
Test and Evaluations																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Diesel Fuel Outboard Motor Testing</i>				
Technology Assessment/Demonstrations	4	2022	4	2023
Test and Evaluations	4	2022	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 9C86 / Combatant Craft Replacement			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9C86: Combatant Craft Replacement	12.674	0.922	0.896	0.942	-	0.942	0.950	0.971	0.991	1.012	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Navy Expeditionary Combat patrol boats, Fleet Expeditionary Security combatant craft, Underwater Construction Team (UCT) and Explosive Ordnance Disposal (EOD) replacement will provide second generation Multi Mission Craft that will replace in-service Force Protection Large, Force Protection Small, Underwater Construction and EOD craft. Boat and craft replacements will: conduct Maritime Security Operations across the full spectrum of naval, joint, and combined operations enabling access and freedom of action throughout the sea-to-shore and inland operating environments as well as conduct maritime Mine Countermeasures (MCM), counter Improvised Explosive Devices (IEDs), Weapons of Mass Destruction (WMD), and all other types of weaponry, for protection of naval and joint assets required for sea control and power projection. Specific mission and capabilities will be identified in an Initial Capabilities Document (ICD), Analysis of Alternatives (AoA), Capabilities Production Document (CPD) and required milestone documentation. RDT&E funding will fund procurement and material solution studies, advanced technology development and studies, design development and test and evaluation and transition Small Business Innovative Research Programs, Rapid Innovation Fund Programs and other technology programs.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Combatant Craft Replacement	0.922	0.896	0.942	0.000	0.942
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The boats and craft in the Navy Expeditionary Combat Command (NECC) fleet are reaching the end of their service lives and will create a capability gap if not replaced. Funding supports design/development and testing of NECC's next generation Expeditionary Combat Patrol Boat or 40 Patrol Boat (40PB) and other NECC craft.					
<b>FY 2023 Plans:</b> Continue material solution development and advanced technology development as well as continuing planning, research, analysis, design and development to recapitalize NECC craft to deploy effective combat power. Continue science and technology development to optimize material solutions to fill critical NECC capability gaps as well as transition Small Business Innovative Research Programs, Rapid Innovation Fund Programs and other technology programs. Continue to develop tactical C4I capabilities and cybersecurity technology integration for combatant craft in a communications contested environment.					
<b>FY 2024 Base Plans:</b>					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 9C86 / Combatant Craft Replacement			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue material solution development and advanced technology development as well as continuing planning, research, analysis, design and development to recapitalize Expeditionary Craft to clear, secure and protect in a contested environment. Continue science and technology development to optimize material solutions to fill critical Expeditionary capability gaps as well as transition Small Business Innovative Research Programs, Rapid Innovation Fund Programs and other technology programs. Continue to develop small form factor Navigation, C5I and Weapon technology integration for Expeditionary Craft in a contested environment.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY 2024 funding increase in support of Expeditionary Combatant Craft Replacement and craft related technological innovations.											
Accomplishments/Planned Programs Subtotals							0.922	0.896	0.942	0.000	0.942
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/1210: Standard Boats (NECC)	86.153	29.695	10.625	-	10.625	30.073	34.539	27.849	28.653	Continuing	Continuing
Remarks											
Other Program Funding reflects OPN/1210 funds directly associated with Project 9C86, not the total value of the OPN Line Item.											
D. Acquisition Strategy											
Acquisition of RDT&E developed craft material solution and technology to be accomplished using "tailored" commercial procurements in accordance with the Craft Replacement Acquisition Strategy.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System				Project (Number/Name) 9C86 / Combatant Craft Replacement					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Craft Feasibility Study	WR	NSWC : Carderock, MD	2.844	0.175	Oct 2021	0.170	Oct 2022	0.179	Oct 2023	-		0.179	Continuing	Continuing	Continuing
Craft Material Solution & Design Development	WR	NSWC : Carderock, MD	6.968	0.372	Dec 2021	0.456	Dec 2022	0.384	Dec 2023	-		0.384	Continuing	Continuing	Continuing
Craft Study Report	WR	NSWC : Carderock, MD	2.862	0.175	Jul 2022	0.170	Jul 2023	0.179	Jul 2024	-		0.179	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC : Carderock, MD	0.000	0.200	Sep 2022	0.100	Aug 2023	0.200	Aug 2024	-		0.200	0.000	0.500	-
Subtotal			12.674	0.922		0.896		0.942		-		0.942	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			12.674	0.922		0.896		0.942		-		0.942	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 5		PE 0604230N / Warfare Support System		9C86 / Combatant Craft Replacement	

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 9C86																												
Combatant & Fleet Expeditionary Craft Design Studies																												
Combatant & Fleet Expeditionary Craft Awards																												
Combatant & Fleet Expeditionary Craft Deliveries																												
Developmental Test and Evaluation																												
Selection of Craft/Systems for Production																												
Selection of Lethal and Non-Lethal Sensors/ Effectors																												
Integration of Lethal and Non-Lethal Sensors/ Effectors																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604230N / Warfare Support System	Project (Number/Name) 9C86 / Combatant Craft Replacement	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 9C86</b>				
Combatant & Fleet Expeditionary Craft Design Studies	3	2023	4	2024
Combatant & Fleet Expeditionary Craft Awards	3	2023	4	2024
Combatant & Fleet Expeditionary Craft Deliveries	3	2023	4	2024
Developmental Test and Evaluation	3	2023	4	2024
Selection of Craft/Systems for Production	4	2024	4	2024
Selection of Lethal and Non-Lethal Sensors/Effectors	1	2023	4	2024
Integration of Lethal and Non-Lethal Sensors/Effectors	1	2023	4	2024

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTROL</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	627.726	118.895	143.573	87.457	-	87.457	79.389	74.818	67.899	69.266	Continuing	Continuing
0486: <i>Tactical Support Center</i>	154.195	5.406	6.060	6.167	-	6.167	12.627	14.836	12.546	12.798	Continuing	Continuing
2343: <i>Tactical METOC Applications</i>	23.256	11.279	12.976	13.271	-	13.271	12.724	12.900	12.987	13.250	Continuing	Continuing
2345: <i>Fleet METOC Equipment</i>	2.590	0.548	0.498	0.640	-	0.640	0.613	0.503	0.514	0.524	Continuing	Continuing
2363: <i>Remote Sensing Capability Development</i>	12.489	4.318	4.745	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.552
3050: <i>Deployable JT Command and Control</i>	5.728	2.480	3.840	3.785	-	3.785	3.558	3.612	3.669	3.744	Continuing	Continuing
3260: <i>Naval Operations Business Logistics Enterprise (NOBLE)</i>	164.234	92.032	112.477	62.791	-	62.791	49.082	42.165	37.365	38.115	Continuing	Continuing
3324: <i>Navy Air Operations Command and Control (NAOC2)</i>	17.031	0.686	0.740	0.803	-	0.803	0.785	0.802	0.818	0.835	Continuing	Continuing
9123: <i>FORCEnet</i>	248.203	2.146	2.237	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	252.586

## Note

Project Unit 2363: Remote Sensing Capability Development (RSCD) Program (Proj 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24.

## A. Mission Description and Budget Item Justification

The Tactical Command System upgrades the Navy's Command, Control, Communications, Computer and Intelligence (C4I) systems and processes C4I information for all warfare mission areas including planning, direction and reconstruction of missions for peacetime, wartime and times of crises.

Programs will implement digital system-of-systems engineering by using tools such as Model Based System Engineering (MBSE) and Digital Twins to create adaptable digital models to optimize system engineering from design, development and testing to operations and sustainment. Programs will use Development, Security and Operations (DevSecOps) processes for continuous development, integration, testing and deployment, along with common platform services such as Agile Core Services (ACS), for faster fielding of capability. Overall program development efforts include the investigation of emerging technologies through study, development and associated testing for feasibility of program insertion.

(Proj 0486) Tactical Support Center: The Tactical Mobile program provides agile evolutionary systems and equipment upgrades to support the Maritime Patrol and Reconnaissance Force Commanders with the capability to plan, direct and control the tactical operations of Maritime Patrol and Reconnaissance Aircraft and other

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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTROL</i>
<p>assigned units within their respective area of responsibility. Looking ahead, TacMobile provides critical mission planning and reach-back capabilities between the Maritime Patrol and Reconnaissance Aircraft, primarily the P-8A/Poseidon, and MQ-4C/Triton, and the Maritime Intelligence Surveillance and Reconnaissance Enterprise. These operations include littoral, open ocean, and over land long-dwell surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, antisubmarine warfare, mining, search and rescue, indications and warning, realtime full motion video collection and streaming/ dissemination, and special operations. The missions are supported by Tactical Operations Centers, Mobile Tactical Operations Centers, and Fly Away Kits.</p> <p>(Proj 2343,2345,2363) Tactical METOC Applications; Fleet METOC Equipment, and Remote Sensing Capability Development (RSCD): The Air/Ocean Equipment Engineering (AOEE) projects provide new capabilities to support naval combat forces. This program engineers and developmentally tests organic and remote sensors, communication interfaces, and processing and display devices. This equipment is engineered to measure, ingest, store, process, distribute and display conditions of the physical environment that are essential to the optimum employment and performance of naval warfare systems. AOEE also engineers capabilities for shipboard and shore-based tactical systems. A major area of focus for the AOEE program is to provide the engineering development of specialized equipment and measurement capabilities that are intended to monitor specific conditions of the physical environment in hostile and remote areas in response to fleet demand signals for increased sensing capability and capacity to support battlespace collections and prediction on short to intermediate time scales. With such capabilities, the war fighters' situational awareness of the operational effects of the physical environment are made more certain. Efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of program insertion. Major emphasis areas include the Naval Integrated Tactical Environmental System Next Generation (NITES-Next) project (2343), Littoral Battlespace Sensors - Unmanned Undersea Vehicles (LBS-UUV) and the Environmental Satellite Receiver Processor (ESRP) project (2345), and the Remote Sensing Capability Development (RSCD) project (2363).</p> <p>(Proj 3050) Deployable Joint Command and Control (DJC2) provides a self-contained, standardized, rapidly deployable, modular, scalable, and reconfigurable joint command and control (C2) capability to designated Geographic Combatant Commands (GCCs). DJC2 is the materiel solution to Defense Planning Guidance that called for the development of standing Joint Task Forces (JTFs) with a deployable C2 capability. DJC2 will ensure that Joint Force Commanders (JFC) are equipped, as well as trained and organized, to carry out their C2 responsibilities. DJC2 provides GCCs and JFCs a mission critical, integrated family of systems with which to plan, control, coordinate, execute, and assess operations. It is designed to deploy rapidly, set up within hours, and quickly provide necessary C2 mission and collaboration functionality across the full spectrum of JTF operations. The DJC2 has also been deployed in support of Humanitarian Assistance and Disaster Relief (HA/DR) efforts. The capability is intended for all levels of conflict and will be reconfigurable to meet specific GCC and JTF mission requirements. This capability is interoperable with higher and adjacent echelons of command (to include coalition allies) as well as with supporting elements to include joint forces.</p> <p>(Proj 3260) Naval Operational Business Logistics Enterprise (NOBLE) is the logistics information technology family of systems comprised of the Naval Operational Supply System (NOSS), the Naval Maintenance, Repair, and Overhaul (N-MRO), and supporting capabilities to include a common platform hosting environment and data exchange solutions. NOBLE enables combat lethality by generating and sustaining Navy and Marine Corps force readiness for operational commanders afloat and ashore, providing the foundational capability to keep ships driving, planes flying, and weapons firing from an equipment Operational Availability (Ao) perspective. NOBLE is the centerpiece of the Fleet's strategic imperative to improve Sailor, unit and group maintenance self-sufficiency combat operations in a communications and access-denied arena. NOBLE's mission is to provide the Navy and Marine Corps with an integrated, scalable, and cybersecure capability that supports the management of logistical information, material, and funds required to maintain and operate ships, submarines, and aircraft. The NOBLE FoS (Family of Systems) will provide direct support to warfighter readiness with maintenance, supply, and financial capabilities. These capabilities include enhanced situational awareness, planning, execution,</p>		

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<p>personnel administration, and management of maintenance and supply logistics and business functions to ships/submarines, aviation squadrons, shore operational sites, and expeditionary units with a total user base exceeding 150,000. The NOBLE architecture will meet current and emerging demands for cyber security, enable Financial Improvement and Audit Readiness (FIAR), drive efficiency into Navy logistics and aviation and maritime maintenance mission requirements, and eliminate over 700 application/database servers. NOBLE FoS will deploy to the Consolidated Afloat Networks and Enterprise Services (CANES) afloat, Department of the Navy (DON) commercial cloud computing environments ashore, and US Marine Corps operating environments.</p> <p>(Proj 3324) Navy Air Operations Command and Control (NAOC2): NAOC2 integrates and tests Air Force program of record systems that provide an integrated and scalable planning system for standardized, secure, and automated decision support for Air Force, Joint, and Allied commanders worldwide. These programs provide automated air operations planning, execution management and intelligence capabilities at the Force level to include fleet commanders, numbered fleet commanders, Commander Carrier Strike Groups, Commander Expeditionary Strike Groups, Commander Landing Forces, and Joint Task Force Commanders. NAOC2 includes Theater Battle Management Core System (TBMCS) and Kessel Run Applications Kit for Enterprise Navy (KRAKEN). KRAKEN (when fielded) will provide rapid, agile delivery of capabilities to the fleet by commercial cloud infrastructure using Development, Security, Operations (DevSecOps) cloud native applications. KRAKEN is comprised of multiple tactical software applications that will provide continuous iterate delivery of software to shipboard and shore users. It will also align with the Joint C2 Reference Architecture (JC2RA) such as Consolidated Afloat Networks and Enterprise Services (CANES). KRAKEN is not natively compatible with Navy Information Technology (IT) infrastructure, such as CANES, and requires a significant level of system integration. Continuation of Navy integration and test efforts will significantly enhance the ability of the Joint Force Air Component Commander and Combined Air Operations Center personnel to plan daily air operations including strike, airlift, offensive/defensive air, missile defense, and refueling missions in support of combat operations. Developmental Testing is continuous and operates in parallel with the DevSecOps construct. KRAKEN will be continued for new technology insertion into Navy infrastructure network and hardware in support of Naval Air C2 and Net Enabled Weapons system integration. KRAKEN addresses the requirement of war fighter distributed planning and execution processes along with significantly improving Joint interoperability. TBMCS continues a hardware transition to CANES. Currently, TBMCS is the key system that is used to conduct real world air planning in the Joint and Navy environments. KRAKEN will replace TBMCS while bringing more flexibility to the war fighter.</p> <p>(Proj 9123) FORCEnet: The mission of this effort is to support Portfolio Health Assessments (PHA). PHA analyzes the Navy's Information Warfare portfolio by focusing on the total capability to support Navy missions rather than on individual program health. PHA looks at more than the Naval Tactical Grid/Information Warfare (NTG/IW) portion of the "Killchain". PHA uses Mission Engineering Architecture, M&amp;S, and Analysis techniques to integrate the sensors, platforms, weapons, and operators into the NTG/IW architecture to ensure that the Navy delivers to mission level capability.</p>		

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Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTROL			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	122.913	143.575	92.652	-	92.652
Current President's Budget	118.895	143.573	87.457	-	87.457
Total Adjustments	-4.018	-0.002	-5.195	-	-5.195
• Congressional General Reductions	-	-0.002			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.058	0.000			
• SBIR/STTR Transfer	-3.959	0.000			
• Program Adjustments	0.000	0.000	-6.592	-	-6.592
• Rate/Misc Adjustments	-0.001	0.000	1.397	-	1.397
Change Summary Explanation					
Technical: Not applicable.					
SCHEDULE:					
Fleet METOC Equipment (Project 2345): Program is pursuing a Commercial Off the Shelf (COTS) based solution for Environmental Satellite Receiver Processor (ESRP) Afloat Modernization with integration initiatives vice a new development effort.					
Tactical Support Center (Project 0486): NAVAIR is designing and developing an interim P-8A Increment 3 ground station (PGS) that leverages TacMobile Inc 2.1 communications infrastructure at fixed site Tactical Operations Centers (TOC). This PGS instantiation meets a subset of the TacMobile requirements.					
TacMobile Inc 3 leverages the PGS architecture with the focus on increased mobility (Size, Weight, Power and Cooling (SWaP-C)) for the Mobile Tactical Operations Centers (MTOC) to meet the complete TacMobile Inc 3 requirements.					
The TacMobile Inc 3 system will be aligned to support P-8A Inc 3 Block 2 ECP 6 and ECP 7 as well as Advanced Airborne Sensor (AAS) capabilities, adding an additional security enclave, while offsetting the size/weight/power/cooling (SWaP-C) requirements to support worldwide expeditionary Maritime Patrol and Reconnaissance Force (MPRF) Aircraft operations. The TacMobile Increment 3 integration continues to ensure interoperability with emerging MPRF Aircraft and Sensors, streamline Pre-Flight Insertion Data (PID) processing, and facilitate the MPRF Intelligence Surveillance and Reconnaissance and Anti-Submarine Warfare data Processing - Exploitation - Dissemination (PED) capabilities within the TacMobile systems.					



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<p>The PGS partial solution will be recapitalized where feasible and incorporated into the full TacMobile Increment 3 design solution. Leveraging PGS will require some TacMobile redesign to achieve a smaller, lightweight, scalable Network-centric Services Oriented Architecture (SOA) configuration.</p> <p>FY2024 funding will commence SECRET Enclave System Integration Testing (SIT) in preparation for FY25 Capability Package 1 (CP-1) (SECRET Domain) Developmental Testing (DT); and will Procure an Expeditionary Higher Than SECRET shelter test bed for Lab development and integration of Capability Package 2 (CP-2) (Higher Than SECRET Domains) commencing in FY25 in preparation for SIT in late FY25, and Developmental Testing (DT) and Operational Assessment in FY26.</p> <p>Naval Operational Business Logistics Enterprise (NOBLE) (Project 3260): The schedule changes are due to the ASN(RDA)/OPNAV N9 Senior Steering Group of July 29,2022 approved changes to the NOSS and N-MRO acquisition strategy, capability and fielding plan which provides agile delivery of N-MRO and NOSS capabilities to meet emergent fleet operational priorities to Naval Operational Forces and user communities. An updated N-MRO and NOSS acquisition strategy approved for separate N-MRO and NOSS Build 1 and 2 standalone operational testing (i.e. User Acceptance Testing (UAT)), in Fiscal Year (FY) 2023 and FY 2024 respectfully. The N-MRO and NOSS standalone schedule changes are due to increased application integration to support backward compatibility with multiple legacy systems to improve cybersecurity to meet current threat profiles; increased application data migration/cleansing; and requisite cybersecurity testing necessary to support their respective N-MRO and NOSS UAT.</p> <p>Remote Sensing Capability Development (RSCD) (Project 2363): Schedule ends in FY 2023 due to realignment of Proj 2363 from PE 0604231N to PE 0304785N starting in FY 2024.</p> <p>FUNDING:</p> <p>Tactical Support Center (Project 0486): TacMobile 3.0 increase of \$0.107M from FY2023 to FY2024 is to address additional Cyber accreditation activities integral to the TacMobile Increment 3 Capability Package-1 Engineering Development process.</p> <p>Fleet METOC Equipment (Project 2345): Environmental Satellite Receiver Processor (ESRP) increase of \$0.023M from FY 2023 to FY 2024 will continue to assess new technology in support of ESRP modernization.</p> <p>Fleet METOC Equipment (Project 2345): Littoral Battlespace Sensors - Unmanned Undersea Vehicles (LBS-UUV) increase of \$0.119M from FY2023 to FY2024 will increase the amount of engineering design studies and Engineering Change Proposals (ECP's) required to keep pace with current requirements.</p> <p>Tactical METOC Applications (Project 2343): NITES-Next increase of \$0.295 from FY 2023 to FY 2024 will increase software development efforts to support cloud infrastructure and operational capabilities identified by the Fleet and defined by stakeholders through quarterly capability prioritization meetings.</p>		

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Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTROL	
<p>Remote Sensing Capability Development (RSCD) (Project 2363): Decrease of \$4.745M from FY 2023 to FY 2024 is attributed to realignment of Proj 2363 from PE 0604231N to PE 0304785N starting in FY 2024.</p> <p>Naval Operational Business Logistics Enterprise (NOBLE) (Project 3260): Naval Operational Supply System (NOSS): Investment required to complete NOSS Other Transaction Authority (OTA) standalone Build 2 functional enhancements, complete FMC, and UAT targeted for Submarine Readiness Squadron(s) 32 and 34 in FY24. Investment required to commence NOSS OTA Build 3/4 planning, prototyping and configuration, integration, testing, training, and site installation activities with N-MRO. Decrease in funding profile from FY23 to FY24 is due to leveraging Build 1 configuration work done in FY23.</p> <p>Naval Maintenance, Repair, and Overhaul (N-MRO): Investment required to complete N-MRO Build 2 functional enhancements, complete Functional Manager Certification (FMC). and UAT targeted for One (1) Naval Aviation Squadron, and One (1) Guided Missile Destroyer (DDG) in FY24. Investment required to commence N-MRO OTA Build 3/4 planning, prototyping and configuration, integration, testing, training, and site installation activities with NOSS. Deliver the common platform hosting environment and data exchange solution to support LOG IT deployments. Decrease in funding profile from FY23 to FY24 is due to cost savings obtained through negotiated N-MRO licensing costs, and leveraging Build 1 configuration work done in FY23.</p> <p>Navy Air Operations Command and Control (NAOC2) (Project 3324): FY24 budget increase funds test strategy development and automated functional tests for Kessel Run Applications Kit for Enterprise Navy (KRAKEN).</p> <p>FORCEnet (Project 9123) Decrease of \$2.237M between FY23 and FY24 is attributed to a Naval Information Warfare and Architecture vertical reduction, eliminating funding beginning in FY24.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 0486 / Tactical Support Center			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0486: Tactical Support Center	154.195	5.406	6.060	6.167	-	6.167	12.627	14.836	12.546	12.798	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
TacMobile is the Ground Station that brings Enterprise Command, Control, Communications, Computers and Intelligence, Surveillance and Reconnaissance (C4ISR) to the Maritime Patrol and Reconnaissance Force (MPRF) community.												
TacMobile is a long-running, multi-year acquisition program that provides Command, Control, Communications, Computers, and Intelligence (C4I) for Navy's MPRF. From within Tactical Operations Centers (TOC) at well-supported airfields, TacMobile provides theater Anti-Submarine Warfare (ASW) and Intelligence Surveillance Reconnaissance (ISR) commanders a common tactical picture while providing pre-flight and post-flight support to manned and unmanned MPRF aircraft. From within Mobile Tactical Operations Centers (MTOC), TacMobile supports manned MPRF aircraft at the tactical edge of operations. TacMobile Fly-Away Kits (FAK) support manned MPRF aircraft in short-duration expeditionary settings.												
Services provided include analysis and correlation of diverse sensor information; data management support; command decision aids; rapid data communication; mission planning, evaluation and reach-back dissemination of surveillance data and threat alerts to operational users ashore and afloat, and to the Maritime Intelligence Surveillance and Reconnaissance Environment.												
The TacMobile program uses an evolutionary development strategy consisting of Capability Packages to meet new and emergent Fleet requirements, while retaining current capabilities. These capability packages consist of a three phase approach: Capability Package One (CP-1) which addresses SECRET domain only (planned fielding in FY25); Capability Package Two (CP-2) meets the Minimum Viable Product (MVP) (Initial Operational Capability (IOC) in FY28); and Capability Package Three (CP-3) will meet full Capability Production Document (CPD) requirements. These Capability Packages are planned and resourced to support the MPRF Family of Systems aircraft: P-8A Poseidon aircraft modernization and upgrades; and Advanced Airborne Sensor (AAS).												
In FY 2024, TacMobile will finalize the Secret enclave Capability Package 1 (CP-1) System Integration Testing (SIT) and Fleet operational assessment, and commence core TacMobile systems engineering, design and development for the Higher Than Secret (HTS) enclave Capability Package 2 (CP-2). Activities include closing out design activities for a full Increment 3 capability that leverages portions of the NAVAIR P-8 Ground Station (PGS) interim solution integrated into a smaller form factor to support P-8A operations. Commence SECRET Enclave System Integration Testing (SIT) and will procure an Expeditionary Higher than SECRET shelter test bed for Lab development and integration in support of Capability Package 2 (CP-2) commencing in FY25.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: TacMobile Increment 3.0								5.406	6.060	6.167	0.000	6.167

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL		Project (Number/Name) 0486 / Tactical Support Center		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:		-	-	-	-	-
<b>FY 2023 Plans:</b> INTEROPERABILITY: Complete Engineering Assessment for TacMobile Inc 3 architecture, that incorporates and leverages appropriate influences from PMA290 P-8 Ground Station (PGS) architecture and design decisions; Commence System Integration, and begin to conduct Systems Integration Testing (SIT) in preparation for an FY25 Capability Package 1 (CP-1) Developmental Test (DT), and laying the groundwork for the Capability Package 2 (CP-2) Operational Assessment in FY 27. TacMobile Inc 3 Systems Integration includes TacMobile redesign of the P-8A Ground Station to achieve a smaller, lightweight, scalable Network-centric Services Oriented Architecture (SOA) configuration, implementing increased mobility to achieve TacMobile Increment 3 requirements for Mobile Tactical Operations Centers (MTOC) Size, Weight, Power and Cooling (SWaP-C).						
<b>FY 2024 Base Plans:</b> INTEROPERABILITY: Incorporate aircraft interfaces from the PMA290 P-8 Ground Station (PGS) architecture; enhanced track management; improved deployable communications and aircraft media handling capability; continue TacMobile Increment 3 HTS design and development towards a Milestone C decision in 3QFY27.						
SYSTEM UPGRADES: Incorporate fleet and engineering change requests - mobile communication improvements via commercial SATCOM and cellular, mission planning improvements; automated distribution of data to external sources; MUOS capability - into Inc 3 design (Inc 3.0); Implement smaller form factor upgrades which will address obsolescence and technological change - remote communications capability; user based workstations/monitors/peripherals and network devices; mobile shelters and energy efficient environmental control units (ECUs); communication modem and antenna replacement.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY2023 to FY2024 funding increase is to address additional Cyber accreditation activities which is integral to the TacMobile Increment 3 Capability Package-1 Engineering Development process.						
Accomplishments/Planned Programs Subtotals		5.406	6.060	6.167	0.000	6.167

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>	<b>Project (Number/Name)</b> 0486 / <i>Tactical Support Center</i>	

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2906: <i>TacMobile</i>	18.791	21.761	32.717	-	32.717	40.759	43.054	35.883	36.713	Continuing	Continuing

**Remarks**

Reflects the related portion of LI 2906 - does not display the entire line item funding.

**D. Acquisition Strategy**

Evolutionary Acquisition - TacMobile is the ground station program of record that supports the P-8A Poseidon and MQ-4C Triton pre- and post-flight C4I requirements and Inflight Command and Control support. These ground stations provide critical reach-back capabilities between the airborne platforms and the Maritime Intelligence Surveillance and Reconnaissance (ISR) Enterprise/ decision makers. TacMobile consists of fixed-site Tactical Operations Centers (TOCs), Mobile TOCs (MTOCs), and Fly Away Kits (FAKs). TacMobile is comprised of 23 subsystems that utilize an evolutionary development strategy consisting of incremental upgrades synchronized to match increased P-8A capabilities, while retaining current functionality and readiness. TacMobile Increment 3 will incorporate support for P-8A Poseidon Increment 3 ECP 6/7 and other Maritime Patrol and Reconnaissance Force (MPRF) Family of Systems (FoS) aircraft systems, as they transition to a DEVSECOPS Architecture.

TacMobile Increment 3 will be developed and fielded in a series of capability package upgrades. Capability Package One (CP-1) will field a GENSER SECRET Technical Refresh to TacMobile Increment 2.1 as a risk reduction toward Increment 3. Capability Package 2 (CP-2) will incorporate and field GENSER SECRET and TOP SECRET Increment 3 capabilities to fully support the P-8A Increment 3 ECP 6/7 aircraft.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / <i>COMMAND AND CONTR</i> OL				Project (Number/Name) 0486 / <i>Tactical Support Center</i> OL					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Charleston; SC; Pax River, MD	17.751	0.000		0.000		0.000		-		0.000	0.000	17.751	-
Systems Engineering	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Charleston, SC; Pax River, MD; San Diego, CA	40.788	3.070	Dec 2021	3.594	Dec 2022	3.786	Dec 2023	-		3.786	Continuing	Continuing	Continuing
Training Development	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Charleston, SC; Pax River, MD; San Diego, CA	3.461	0.000		0.000		0.000		-		0.000	0.000	3.461	-
Software Development	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Charleston, SC; Pax River, MD; San Diego, CA	52.366	0.000		0.000		0.000		-		0.000	0.000	52.366	-
Integrated Logistics Support	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Charleston, SC; Pax River, MD	1.840	0.043	Dec 2021	0.043	Dec 2022	0.043	Dec 2023	-		0.043	Continuing	Continuing	Continuing
Configuration Management	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Charleston, SC; Pax River, MD	1.440	0.044	Dec 2021	0.044	Dec 2022	0.044	Dec 2023	-		0.044	Continuing	Continuing	Continuing
Technical Data	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD :	2.484	1.499	Dec 2021	1.629	Dec 2022	1.544	Dec 2023	-		1.544	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL						Project (Number/Name) 0486 / Tactical Support Center					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
		Charleston, SC; Pax River, MD															
Studies & Analyses	C/CPFF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Pax River, MD; San Diego CA	1.085	0.400	Dec 2021	0.400	Dec 2022	0.400	Dec 2023	-		0.400	Continuing	Continuing	Continuing		
Subtotal			121.215	5.056		5.710		5.817		-		5.817	Continuing	Continuing	N/A		
Remarks																	
FY24 funding increase in Systems engineering reflects commencement of Systems Integration, and Systems integration testing.																	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	C/CPIF	NIWC LANT; SRC; Charleston, SC; Pax River, MD : Charleston, SC; Pax River, MD	5.293	0.000		0.000		0.000		-		0.000	0.000	5.293	-		
Operational Test & Evaluation (OT&E)	MIPR	OPTEVFOR; NIWC LANT; SRC : Jacksonville, FL;Patuxent River MD	6.020	0.000		0.000		0.000		-		0.000	0.000	6.020	-		
Subtotal			11.313	0.000		0.000		0.000		-		0.000	0.000	11.313	N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL						Project (Number/Name) 0486 / Tactical Support Center			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	SRC; BAH; Deloitt : Charleston, SC; Pax River, MD; San Diego, CA	4.200	0.195	Dec 2021	0.195	Dec 2022	0.195	Dec 2023	-		0.195	Continuing	Continuing	Continuing
Government Engineering Support	WR	NIWC LANT : Charleston, SC; Pax River, MD	2.755	0.107	Dec 2021	0.107	Dec 2022	0.107	Dec 2023	-		0.107	Continuing	Continuing	Continuing
Program Management Support	C/CPIF	NIWC PAC;PMW 750; SRC; BAH; Deloitte : Charleston, SC; San Diego, CA	14.330	0.023	Dec 2021	0.023	Dec 2022	0.023	Dec 2023	-		0.023	Continuing	Continuing	Continuing
Travel	WR	PMW750 : San Diego, CA	0.382	0.025	Dec 2021	0.025	Dec 2022	0.025	Dec 2023	-		0.025	Continuing	Continuing	Continuing
Subtotal			21.667	0.350		0.350		0.350		-		0.350	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			154.195	5.406		6.060		6.167		-		6.167	Continuing	Continuing	N/A
Remarks															



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Project (Number/Name)	Start Date	End Date	Duration (Days)	Project Manager	Status	Notes
101	2023-01-01	2023-01-15	15	John Doe	Completed	Project completed successfully.
102	2023-01-16	2023-02-01	16	Jane Smith	In Progress	Project is currently in progress.
103	2023-02-02	2023-02-15	14	John Doe	On Hold	Project is on hold due to resource availability.
104	2023-02-16	2023-03-01	15	Jane Smith	Planned	Project is planned for the future.
105	2023-03-02	2023-03-15	14	John Doe	Completed	Project completed successfully.
106	2023-03-16	2023-04-01	16	Jane Smith	In Progress	Project is currently in progress.
107	2023-04-02	2023-04-15	14	John Doe	On Hold	Project is on hold due to resource availability.
108	2023-04-16	2023-05-01	16	Jane Smith	Planned	Project is planned for the future.
109	2023-05-02	2023-05-15	14	John Doe	Completed	Project completed successfully.
110	2023-05-16	2023-06-01	16	Jane Smith	In Progress	Project is currently in progress.
111	2023-06-02	2023-06-15	14	John Doe	On Hold	Project is on hold due to resource availability.
112	2023-06-16	2023-07-01	16	Jane Smith	Planned	Project is planned for the future.
113	2023-07-02	2023-07-15	14	John Doe	Completed	Project completed successfully.
114	2023-07-16	2023-08-01	16	Jane Smith	In Progress	Project is currently in progress.
115	2023-08-02	2023-08-15	14	John Doe	On Hold	Project is on hold due to resource availability.
116	2023-08-16	2023-09-01	16	Jane Smith	Planned	Project is planned for the future.
117	2023-09-02	2023-09-15	14	John Doe	Completed	Project completed successfully.
118	2023-09-16	2023-10-01	16	Jane Smith	In Progress	Project is currently in progress.
119	2023-10-02	2023-10-15	14	John Doe	On Hold	Project is on hold due to resource availability.
120	2023-10-16	2023-11-01	16	Jane Smith	Planned	Project is planned for the future.
121	2023-11-02	2023-11-15	14	John Doe	Completed	Project completed successfully.
122	2023-11-16	2023-12-01	16	Jane Smith	In Progress	Project is currently in progress.
123	2023-12-02	2023-12-15	14	John Doe	On Hold	Project is on hold due to resource availability.
124	2023-12-16	2024-01-01	16	Jane Smith	Planned	Project is planned for the future.
125	2024-01-02	2024-01-15	14	John Doe	Completed	Project completed successfully.
126	2024-01-16	2024-02-01	16	Jane Smith	In Progress	Project is currently in progress.
127	2024-02-02	2024-02-15	14	John Doe	On Hold	Project is on hold due to resource availability.
128	2024-02-16	2024-03-01	16	Jane Smith	Planned	Project is planned for the future.
129	2024-03-02	2024-03-15	14	John Doe	Completed	Project completed successfully.
130	2024-03-16	2024-04-01	16	Jane Smith	In Progress	Project is currently in progress.
131	2024-04-02	2024-04-15	14	John Doe	On Hold	Project is on hold due to resource availability.
132	2024-04-16	2024-05-01	16	Jane Smith	Planned	Project is planned for the future.
133	2024-05-02	2024-05-15	14	John Doe	Completed	Project completed successfully.
134	2024-05-16	2024-06-01	16	Jane Smith	In Progress	Project is currently in progress.
135	2024-06-02	2024-06-15	14	John Doe	On Hold	Project is on hold due to resource availability.
136	2024-06-16	2024-07-01	16	Jane Smith	Planned	Project is planned for the future.
137	2024-07-02	2024-07-15	14	John Doe	Completed	Project completed successfully.
138	2024-07-16	2024-08-01	16	Jane Smith	In Progress	Project is currently in progress.
139	2024-08-02	2024-08-15	14	John Doe	On Hold	Project is on hold due to resource availability.
140	2024-08-16	2024-09-01	16	Jane Smith	Planned	Project is planned for the future.
141	2024-09-02	2024-09-15	14	John Doe	Completed	Project completed successfully.
142	2024-09-16	2024-10-01	16	Jane Smith	In Progress	Project is currently in progress.
143	2024-10-02	2024-10-15	14	John Doe	On Hold	Project is on hold due to resource availability.
144	2024-10-16	2024-11-01	16	Jane Smith	Planned	Project is planned for the future.
145	2024-11-02	2024-11-15	14	John Doe	Completed	Project completed successfully.
146	2024-11-16	2024-12-01	16	Jane Smith	In Progress	Project is currently in progress.
147	2024-12-02	2024-12-15	14	John Doe	On Hold	Project is on hold due to resource availability.
148	2024-12-16	2025-01-01	16	Jane Smith	Planned	Project is planned for the future.
149	2025-01-02	20				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL	Project (Number/Name) 0486 / Tactical Support Center	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0486</b>				
Inc 3 MS-C	3	2027	3	2027
Preliminary Design Review (Increment 3)	1	2022	1	2022
Inc 3 Engineering Assessment	4	2022	2	2023
CP-1 Accreditation Prep	2	2024	4	2024
Systems Integration Test (CP-2) SIT 3	3	2026	3	2026
Systems Integration Test (CP-2) SIT 4	2	2027	2	2027
Systems Integration Test (CP-3) SIT 5	3	2028	3	2028
Development/Integration (Increment 3)	1	2022	4	2028
Systems Integration Test (CP-1) SIT 1	2	2023	3	2023
Systems Integration Test (CP-1) SIT 2	1	2024	2	2024
Critical Design Review (Increment 3)	1	2025	3	2025
CP-2 Accreditation Prep	2	2027	4	2027
Inc 3 Capability Package (CP-2) Integration	2	2024	4	2027
2.1.3 Capability Package (CP-1) Integration	2	2022	4	2024
Inc 2.1.X Software Patch Delivery (Monthly)	1	2022	4	2028
Developmental Test (CP-2)	3	2026	3	2026
IOT&E Inc 3	1	2027	2	2027
IOC CP 2	3	2028	3	2028
Tech Refresh 2.1.3 CP 1 (Inc 3 Risk Reduction)	1	2025	4	2028
Tech Refresh Delivery (TR 2.1.2)	1	2022	4	2026
TR 2.1.2 Fleet Release 85	1	2022	4	2022

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## Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy

**Date:** March 2023

### Appropriation/Budget Activity

1319 / 5

### R-1 Program Element (Number/Name)

PE 0604231N / COMMAND AND CONTR

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Project (Number/Name)

0486 / Tactical Support Center

Events by Sub Project	Quarter	Year	Quarter	Year
TR 2.1.2 Fleet Release 95	3	2023	1	2025
TR 2.1.2 Fleet Release 105	2	2025	4	2026
Tech Refresh Delivery (TR 2.1.3) (CP-1)	3	2025	1	2028
Inc 3 Capability Package (CP-2) Delivery	1	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 2343 / Tactical METOC Applications			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2343: Tactical METOC Applications	23.256	11.279	12.976	13.271	-	13.271	12.724	12.900	12.987	13.250	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Tactical Meteorology and Oceanography (METOC) Applications Project provides cyber secure operational effects decision aid capabilities for Navy and Marine Corps warfighters in the context of Joint Operations in a net-centric environment. This project funds the agile software development of the Naval Integrated Tactical Environmental System - Next Generation (NITES-Next) program of record. The NITES-Next program identifies and transitions state-of-the-art decision support software technologies from the government and commercial industry's technology base, and then demonstrates and validates these capabilities before fielding. These software decision support tools provide platform, sensor, communications, and weapon systems performance assessments for warfighters in terms of their littoral and deep-strike battlespace environments. These assessments allow mission planners and warfighters, from Unit to Theater level, to optimize their sensor employment on airborne, surface, and subsurface platforms in support of Naval Composite Warfare mission areas including Undersea Warfare (USW), Anti-Submarine Warfare (ASW), Mine Warfare (MIW), Amphibious Warfare (AMW), Anti-Surface Warfare (ASUW), Anti-Air Warfare (AAW), Strike Warfare (STW), Expeditionary Warfare (EXW), Electronic Warfare (EW), Information Operations (IO), Intelligence Operations (INT), Non-Combat Operations (NCO), Command, Control, Communication (CCC), and Naval Special Warfare (NSW). Performance assessments leading to improvements in operational and tactical control are conducted through a two-tiered approach: 1) METOC Decision Aids and, 2) Operational Effects Decision Aids (OEDAs). METOC Decision Aids consist of a series of analysis tools which characterize the physical environment conditions of the battlespace based on the best set of physical environment data available at the time (i.e., some combination of historical and/or real-time (or near real-time) in-situ, and numerically modeled forecast data). OEDAs use the METOC Decision Aid information by fusing it with relevant, often-classified, sensor and target data to predict how weapons and sensor systems will perform. Performance results are displayed in tabular and graphic formats integrated into net-centric visualization tools for use by mission planners, and combat/weapon system operators to develop localization plans, USW/AAW/ASUW screens, STW profiles, and AMW ingress and egress points. METOC Decision Aids and OEDAs use data obtained through direct interfaces to Navy combat systems. Cyber secure capabilities are a current emphasis required to characterize and/or predict sensor and weapons system performance in the highly complex littoral environments in support of regional conflict scenarios. It addresses multi-warfare areas, particularly shallow water ASW, NSW, and missile and air defense/strike capabilities.

Funding supports development and integration efforts for METOC systems to generate and collect METOC data and fuse multiple intelligence inputs to more robustly characterize and predict tactical atmospheric and oceanographic conditions. This integrated METOC picture will support real-time battlespace awareness of propagation conditions affecting signals across the electromagnetic spectrum. METOC data will be fused with other intelligence data and automatically provided to shipboard combat systems to inform kinetic and non-kinetic fires.

FY24 funding supports development of highest priority capabilities as outlined in the Software Acquisition Pathway (SWP) Capability Prioritization Meetings. Capabilities to include the Forecaster Toolkit Ashore capability, Tides and Currents forecasting, and Solar and Lunar forecasting enhancements. Other high priority items include METOC data integration efforts with programs and projects in need of METOC data. The program will continue to maintain and update its Risk Management Framework (RMF) Authority to Operate (ATO).

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL		Project (Number/Name) 2343 / Tactical METOC Applications		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Naval Integrated Tactical Environmental System - Next Generation (NITES-Next)		11.279	12.976	13.271	0.000	13.271
Articles:		-	-	-	-	-
FY 2023 Plans:						
<div>- Continue to support transition to Adaptive Acquisition Framework, Software Acquisition Pathway (SWP) by delivering software releases at least annually, but more frequently over time through an ongoing software development process.</div> <div>- Engage external stakeholders through quarterly capability prioritization meetings to align with operational Fleet user needs and requests.</div> <div>- Continue planning for requirements through iterative software development, annual acquisition strategy reviews, and continuous engineering reviews.</div> <div>- Continue development capability efforts and releases will focus on cloud infrastructure, the JWICS enclave, data ordering refactor, littoral characterization, and/or capabilities deemed emergent by stakeholders.</div> <div>- Continue to manage RMF ATOs and participate in multiple Consolidated Afloat Networks and Enterprise Services (CANES) Application Integration (AI) System Integration Test (SIT) events throughout the FY.</div> <div>- Continue its transition into the Overmatch Software Armory (OSA) in order to develop, test, and field in a more iterative and rapid manner.</div>						
FY 2024 Base Plans:						
<div>- Continue to execute in the SWP allowing the program to develop and field the highest priority capabilities the fleet needs today.</div> <div>- Continue increased fleet engagement activities to support pre-deployment events and support greater clarity for future capabilities.</div> <div>- Continue planning for requirements through iterative software development, annual acquisition strategy reviews, and continuous engineering reviews.</div> <div>- Continue development efforts on cloud infrastructure, JWICS enclave, and emergent capabilities deemed by stakeholders.</div> <div>- Continue management of RMF ATOs and participate in CANES AI SIT events throughout the FY.</div> <div>- Continue its transition into the OSA in order to develop, test, and field in a more iterative and rapid manner.</div> <div>- Begin METOC data integration efforts with programs and projects to support the warfighter.</div>						
FY 2024 OCO Plans:						
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 2343 / Tactical METOC Applications			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
No significant changes from FY 2023 to FY 2024.											
Accomplishments/Planned Programs Subtotals				11.279	12.976	13.271	0.000	13.271			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4226: Meteorological Equipment	13.687	15.175	19.703	-	19.703	16.850	15.856	16.142	16.592	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The NITES-Next program acquisition, management and contracting strategies are to support the Tactical Meteorology & Oceanography (METOC) Applications project to continue the development of state-of-the-art software capabilities that provide sensor, communication, and weapon system performance assessment capabilities for open ocean and littoral operating environments. The Department of the Navy (DoN) maintains management oversight of the NITES-Next program's acquisition and contracting strategies.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 2343 / Tactical METOC Applications					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NITES-Next Software Development	WR	NIWC Pacific : San Diego, CA	5.195	2.428	Nov 2021	2.841	Nov 2022	3.108	Nov 2023	-		3.108	Continuing	Continuing	Continuing
NITES-Next Software Development	C/FP	SAIC : Virginia	4.309	2.241	Jan 2022	2.487	Jan 2023	2.536	Jan 2024	-		2.536	Continuing	Continuing	Continuing
NITES-Next Software Development	WR	NIWC Atlantic : South Carolina	0.188	0.094	Oct 2021	0.160	Oct 2022	0.161	Oct 2023	-		0.161	Continuing	Continuing	Continuing
NITES-Next Software Development	C/IDIQ	Various : Various	8.992	4.181	May 2022	4.951	May 2023	4.937	May 2024	-		4.937	Continuing	Continuing	Continuing
Subtotal			18.684	8.944		10.439		10.742		-		10.742	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NITES-Next Architecture	C/FP	SAIC : Virginia	2.611	1.355	Jan 2022	1.503	Jan 2023	1.500	Jan 2024	-		1.500	Continuing	Continuing	Continuing
Subtotal			2.611	1.355		1.503		1.500		-		1.500	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NITES-Next Government Technical Oversight	WR	NIWC PAC : San Diego, CA	0.799	0.400	Nov 2021	0.444	Nov 2022	0.442	Nov 2023	-		0.442	Continuing	Continuing	Continuing
NITES-Next Program Management	C/FP	BAH : San Diego CA	1.162	0.580	Jan 2022	0.590	Jan 2023	0.587	Jan 2024	-		0.587	Continuing	Continuing	Continuing
Subtotal			1.961	0.980		1.034		1.029		-		1.029	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			23.256	11.279		12.976		13.271		-		13.271	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy							Date: March 2023			
Appropriation/Budget Activity 1319 / 5			R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL			Project (Number/Name) 2343 / Tactical METOC Applications				
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																		Date: March 2023										
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL								Project (Number/Name) 2343 / Tactical METOC Applications										
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
Naval Integrated Tactical Environmental System Next Generation (NITES-Next):	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition				◆				◇				◇				◇				◇				◇				◇
				AS Update				AS Update				AS Update				AS Update				AS Update				AS Update				AS Update
Contracts																												
	Development Capability Area																											
	Contracts																											
	Continuous Engineering Review																											
	CANES AI SIT																											
	RMF - ATO																											
Deployment & Sustainment																												
	Deployment, Fielding & Sustainment (O&MN)																											
Acronyms: AS = Acquisition Strategy. ATO = Authority to Operate. CANES = Consolidated Afloat Networks and Enterprise Services. SIT = System Integration Test. AI = Application Integration. RMF = Risk Management Framework.																												
Note:																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> OL	<b>Project (Number/Name)</b> 2343 / <i>Tactical METOC Applications</i>	

**Schedule Details**

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
<b><i>Naval Integrated Tactical Environmental System - Next Generation (NITES-Next)</i></b>				
Acquisition: Acquisition Strategy Update 1	4	2022	4	2022
Acquisition: Acquisition Strategy Update 2	4	2023	4	2023
Acquisition: Acquisition Strategy Update 3	4	2024	4	2024
Acquisition: Acquisition Strategy Update 4	4	2025	4	2025
Acquisition: Acquisition Strategy Update 5	4	2026	4	2026
Acquisition: Acquisition Strategy Update 6	4	2027	4	2027
Acquisition: Acquisition Strategy Update 7	4	2028	4	2028
Contracts: Development Capability Area	1	2022	4	2028
Contracts: Contracts	1	2022	4	2028
Contracts: Continuous Engineering Review	1	2022	4	2028
RMF ATO: CANES AI SIT	1	2022	4	2028
RMF ATO: RMF - ATO	1	2022	4	2028
RMF ATO: Deployment and Sustainment: Deployment, fielding and Sustainment (OMN)	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 2345 / Fleet METOC Equipment			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2345: Fleet METOC Equipment	2.590	0.548	0.498	0.640	-	0.640	0.613	0.503	0.514	0.524	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Littoral Battlespace Sensing - Unmanned Undersea Vehicles (LBS-UUV) project provides for the engineering and manufacturing development of sensors, communication interfaces, processing and display meteorological and oceanographic (METOC) equipment. This equipment is designed to provide future mission capabilities for war fighters to measure, ingest, store, process, distribute and display METOC parameters and derived products.

This project also exploits new government off-the-shelf/commercial off-the-shelf technologies, tactical sensors and web enablement for the Navy's computer-based tactical shipboard and shore capability used to predict and assess the operational effects of the physical environment on the performance of platforms, weapons and sensor systems. This project includes development of warfare specific mission planning modules to support unmanned systems with integration of data from environmental and tactical sensor systems, model forecast information and Geospatial Information & Services Databases. This project also supports development of autonomous environmental sensing systems for situational awareness and tactical decision aid/mission planner support, as well as iridium and advanced satellite communication integration in METOC sensor, vehicle control and mission planning systems that will be required to achieve Chief of Naval Operations (CNO) objectives for information dominance and decision superiority.

Major emphasis areas include Littoral Battlespace Sensing - Unmanned Undersea Vehicles (LBS-UUV) and the Environmental Satellite Receiver Processor (ESRP) program (comprised of ESRP AFLOAT (formerly AN/SMQ-11) and ESRP ASHORE (formerly AN/FMQ-17) systems).

FY24 funding for the Littoral Battlespace Sensing - Gliders (LBS-G) and LBS - Autonomous Undersea Vehicles (LBS-AUV) will focus on engineering design studies. Efforts will develop system upgrades via Engineering Change Proposals (ECP's) and correct any identified software and/or hardware deficiencies. Continue investigating potential capability improvements, such as, but not limited to, endurance (e.g. battery technology), autonomy (precise navigation with obstacle avoidance), communications (at depth), and advanced sensors (Conductivity Temperature Depth (CTD), optical clarity).

FY24 funding for Environmental Satellite Receiver Processor (ESRP) will support new technology assessments for ESRP modernization.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Littoral Battlespace Sensing - Unmanned Undersea Vehicle (LBS-UUV)	0.181	0.086	0.205	0.000	0.205
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL		Project (Number/Name) 2345 / Fleet METOC Equipment		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue engineering design studies for the Littoral Battlespace Sensing - Gliders (LBS-G) and Littoral Battlespace Sensors - Autonomous Undersea Vehicles (LBS-AUV).</div> <div>- Develop system upgrades via Engineering Change Proposals (ECP's) and correct any identified software and/or hardware deficiencies.</div> <div>- Continue investigating potential capability improvements, such as, but not limited to, endurance (e.g. battery technology, bio-fouling), autonomy (precise navigation with obstacle avoidance), communications (comms at depth), and advanced sensors (CTD, optical clarity).</div> <div>FY 2024 Base Plans:</div> <div>- Continue engineering design studies for the Littoral Battlespace Sensing - Gliders (LBS-G) and Littoral Battlespace Sensors - Autonomous Undersea Vehicles (LBS-AUV).</div> <div>- Continue to develop system upgrades via Engineering Change Proposals (ECP's) and correct any identified software and/or hardware deficiencies.</div> <div>- Continue investigating potential capability improvements, such as, but not limited to, endurance (e.g. battery technology, bio-fouling), autonomy (precise navigation with obstacle avoidance), communications (comms at depth), and advanced sensors (CTD, optical clarity).</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Increase of \$0.119M from FY2023 to FY2024 will increase the amount of engineering design studies and Engineering Change Proposals (ECP's) required to keep pace with current requirements.</div>						
<div>Title: Environmental Satellite Receiver Processor (ESRP)</div> <div>Articles:</div> <div>FY 2023 Plans:</div> <div>- Continuing integration of ESRP systems in support of WSF-M, EWS-G, GOES-15, GOES-16, GOES-17 and EUMETSAT satellites.</div> <div>- Demonstrating ESRP Afloat modernization prototype for commercial SATCOM integration, test, and deploy.</div> <div>FY 2024 Base Plans:</div> <div>- Support new technology assessments for Environmental Satellite Receiver Processor (ESRP) modernization.</div> <div>- Demonstrate ESRP modernization prototype for commercial SATCOM integration, test, and deploy.</div> <div>FY 2024 OCO Plans:</div>		0.367 -	0.412 -	0.435 -	0.000 -	0.435 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>		<b>Project (Number/Name)</b> 2345 / <i>Fleet METOC Equipment</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A					
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Environmental Satellite Receiver Processor (ESRP) Increase of \$0.023M from FY 2023 to FY 2024 will continue to assess new technology in support of ESRP modernization.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.548	0.498	0.640	0.000	0.640

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b><u>Line Item</u></b>	<b><u>FY 2022</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024 Base</u></b>	<b><u>FY 2024 OCO</u></b>	<b><u>FY 2024 Total</u></b>	<b><u>FY 2025</u></b>	<b><u>FY 2026</u></b>	<b><u>FY 2027</u></b>	<b><u>FY 2028</u></b>	<b><u>Cost To Complete</u></b>	<b><u>Total Cost</u></b>
• OPN/4226: <i>Meteorological Equipment</i>	13.687	15.175	19.703	-	19.703	16.850	15.856	16.142	16.592	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b> The Littoral Battlespace Sensing - Unmanned Undersea Vehicles (LBS-UUV) acquisition strategy is to develop and engineer equipment to acquire Meteorological and Oceanographic (METOC) data in order to improve the accuracy of global and regional scale METOC forecast models.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 2345 / Fleet METOC Equipment					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Littoral Battlespace Sensing - Gliders Development	Various	Teledyne Brown : Alabama	0.096	0.088	Mar 2022	0.043	Mar 2023	0.000		-		0.000	0.000	0.227	-
Littoral Battlespace Sensing - Autonomous Undersea Vehicle Development	Various	HII : Pocasset, MA	0.096	0.093	Mar 2022	0.043	Mar 2023	0.205	Mar 2024	-		0.205	Continuing	Continuing	Continuing
Environmental Satellite Receiver Processor (ESRP) - Development	SS/CPFF	Vertex : Indianapolis	0.698	0.367	Feb 2022	0.362	Mar 2023	0.435	Mar 2024	-		0.435	Continuing	Continuing	Continuing
Environmental Satellite Receiver Processor (ESRP) - Development	Various	The Mitre Corporation : Mc Lean Virginia	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Environmental Satellite Receiver Processor (ESRP) - Development	Various	NIWC Pacific : San Diego, Ca	1.400	0.000		0.050	Mar 2023	0.000		-		0.000	0.000	1.450	-
Subtotal			2.590	0.548		0.498		0.640		-		0.640	Continuing	Continuing	N/A
Remarks															
Increase for HII from FY2023 to FY2024 will increase the amount of engineering design studies and Engineering Change Proposals (ECP's) required to keep pace with current requirements.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2.590	0.548		0.498		0.640		-		0.640	Continuing	Continuing	N/A
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

**R-1 Program Element (Number/Name)**

PE 0604231N / *COMMAND AND CONTR*  
*OL*

**Project (Number/Name)**

2345 / *Fleet METOC Equipment*

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
<b>Environmental Satellite Receiver Processor (ESRP)</b>	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>ESRP Sensors in View Integration</b>																												
<b>ESRP Satellite Testing</b>	SAT TEST				SAT TEST				SAT TEST				SAT TEST				SAT TEST				SAT TEST				SAT TEST			
		◆				◆				◇				◇				◇				◇				◇		
<b>ESRP Modernization Tech Assessment</b>																												

Notes: Program is pursuing a Commercial Off the Shelf (COTS) based solution for ESRP Afloat Modernization with integration initiatives vice a full development effort.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL	Project (Number/Name) 2345 / Fleet METOC Equipment	

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV)	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Engineering Design Study	◆ EDS 1				◆ EDS 2				◇ EDS 3				◇ EDS 4				◇ EDS 5				◇ EDS 6				◇ EDS 7			

Notes:



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604231N / COMMAND AND CONTR OL	<b>Project (Number/Name)</b> 2345 / Fleet METOC Equipment	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV)</i></b>				
Engineering Design Study: Engineering Design Study 1	2	2022	2	2022
Engineering Design Study: Engineering Design Study 2	2	2023	2	2023
Engineering Design Study: Engineering Design Study 3	2	2024	2	2024
Engineering Design Study: Engineering Design Study 4	2	2025	2	2025
Engineering Design Study: Engineering Design Study 5	2	2026	2	2026
Engineering Design Study: Engineering Design Study 6	2	2027	2	2027
Engineering Design Study: Engineering Design Study 7	2	2028	2	2028
<b><i>Environmental Satellite Receiver Processor (ESRP)</i></b>				
ESRP Sensors in View Integration: ESRP Sensors in View Integration	1	2022	4	2028
ESRP Satellite Testing: ESRP Satellite Testing (FY22)	2	2022	2	2022
ESRP Satellite Testing: ESRP Satellite Testing (FY23)	2	2023	2	2023
ESRP Satellite Testing: ESRP Satellite Testing (FY24)	2	2024	2	2024
ESRP Satellite Testing: ESRP Satellite Testing (FY25)	2	2025	2	2025
ESRP Satellite Testing: ESRP Satellite Testing (FY26)	2	2026	2	2026
ESRP Satellite Testing: ESRP Satellite Testing (FY27)	2	2027	2	2027
ESRP Satellite Testing: ESRP Satellite Testing (FY28)	2	2028	2	2028
ESRP Modernization Tech Assessment: ESRP Modernization Tech Assessment	1	2022	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 2363 / Remote Sensing Capability Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2363: Remote Sensing Capability Development	12.489	4.318	4.745	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.552
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

Remote Sensing Capability Development (RSCD) Program (Proj 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24.

**A. Mission Description and Budget Item Justification**

The Remote Sensing Capabilities Development (RSCD) project integrates and fields capabilities to enhance maritime domain awareness using non-organic sensors under the Top Secret / Sensitive Compartmented Information (TS/SCI) SEAHORSE process. The system addresses Fleet Integrated Prioritized Capability List (IPCL) and capabilities gaps for increasing Battlespace Awareness and Intelligence Surveillance and Reconnaissance (ISR) capabilities to support Fleet Tasking, Collections, Processing, Exploitation, and Dissemination (TCPED) processes. RSCD employs automation concepts to produce intelligence with significantly less Fleet manpower than traditional processes. The project is also working to shorten and streamline the SEAHORSE TCPED cycle to meet speed of service and accuracy requirements. RSCD incorporates state of the art software in the form of machine/continuous learning technologies to achieve a significant reduction of false alarm rates. SEAHORSE is relied upon by INDOPACOM, CENTCOM, and EUCOM to provide intelligence solutions (detail held at a higher classification). RSCD supporting the transition of SEAHORSE to a fully integrated, cloud-based, operational system.

FY 2024 funding will continue the planned data collection, algorithm enhancement, algorithm performance assessment, and system integration activities.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Remote Sensing Capability Development (RSCD)	4.318	4.745	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Continue to collect data in various weather and sea states to broaden the range of environmental conditions, reduce uncertainty in environmental prediction, and generate training data sets for Machine Learning.</li> <li>- Continue to conduct software algorithm performance analysis and enhancements to automatically detect oceanographic phenomena and data repository to test and evaluate, create performance metrics, and understand computational performance of algorithms and technologies that enhance the fleet's battle space awareness.</li> <li>- Continue to conduct software algorithm enhancements to address improvements identified through performance analysis.</li> </ul>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>		<b>Project (Number/Name)</b> 2363 / <i>Remote Sensing Capability</i> <i>Development</i>	

<b><u>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</u></b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>- Continue to integrate software algorithm enhancements.</p> <p>- Continue to coordinate TCPED process amongst inter-agencies to support Navy Missions.</p> <p><b><i>FY 2024 Base Plans:</i></b> Remote Sensing Capability Development (RSCD) Program (Proj 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24.</p> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Decrease of \$4.745M from FY 2023 to FY 2024 is attributed to realignment of Proj 2363 from PE 0604231N to PE 0304785N starting in FY24.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	4.318	4.745	0.000	0.000	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
The Remote Sensing Capabilities Development (RSCD) acquisition strategy is being managed by the Program Executive Office Command, Control, Communications, Computers and Intelligence (PEO C4I) and Space, via a Project Definition Document (PDD) construct for acquisition rigor and oversight.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL					Project (Number/Name) 2363 / Remote Sensing Capability Development				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RSCD Software Development	C/FFP	SAIC : Viriginia	2.018	0.480	Feb 2022	0.512	Feb 2023	0.000		-		0.000	0.000	3.010	-
RSCD Software Development	WR	NRL : Various	3.141	0.475	Nov 2021	0.607	Nov 2022	0.000		-		0.000	0.000	4.223	-
RSCD Software Development	C/FFP	Cubic/Valiant : San Diego, CA	3.223	0.968	Apr 2022	1.073	Apr 2023	0.000		-		0.000	0.000	5.264	-
Subtotal			8.382	1.923		2.192		0.000		-		0.000	0.000	12.497	N/A
Remarks Remote Sensing Capability Development (RSCD) Program (Proj 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RSCD Architecture	WR	NIWC PAC : San Diego, CA	1.518	0.718	Nov 2021	0.766	Nov 2022	0.000		-		0.000	0.000	3.002	-
Subtotal			1.518	0.718		0.766		0.000		-		0.000	0.000	3.002	N/A
Remarks Remote Sensing Capability Development (RSCD) Program (Proj 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NIWC PAC : San Diego, CA	2.589	0.000		0.000		0.000		-		0.000	0.000	2.589	-
Developmental Test & Evaluation (DT&E)	C/FFP	Cubic/Valiant : San Diego, CA	0.000	0.959	Apr 2022	1.021	Apr 2023	0.000		-		0.000	0.000	1.980	-
Developmental Test & Evaluation (DT&E)	WR	DOE : Albuquerque, NM	0.000	0.718	Nov 2021	0.766	Nov 2022	0.000		-		0.000	0.000	1.484	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL						Project (Number/Name) 2363 / Remote Sensing Capability Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Subtotal			2.589	1.677		1.787		0.000		-		0.000	0.000	6.053	N/A		
Remarks																	
Remote Sensing Capability Development (RSCD) Program (Proj 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24.																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			12.489	4.318		4.745		0.000		-		0.000	0.000	21.552	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604231N / COMMAND AND CONTR

OL

Project (Number/Name)

2363 / Remote Sensing Capability Development

Remote Sensing Capability Development	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Data Collection																												
Algorithm Enhancements																												
Algorithm Decision (AD)			AD 2.3.1 ◆			AD 2.3.2 ◆		AD 2.4.1 ◆																				
Integration Decision (ID)							ID 2.3 ◆																					
System Integration		SI-2.2					SI-2.3																					
Testing																												
System Engineering																												
System Fielding Decision (FD)			FD 2.2 ◆																									
Algorithm Performance Analysis																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>	<b>Project (Number/Name)</b> 2363 / <i>Remote Sensing Capability</i> <i>Development</i>	

**Schedule Details**

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
<b><i>Remote Sensing Capability Development</i></b>				
Data Collection:	1	2022	4	2023
Algorithm Enhancements:	1	2022	4	2023
Algorithm Decision (AD): Algorithm Decision 2.3.1	3	2022	3	2022
Algorithm Decision (AD): Algorithm Decision 2.3.2	1	2023	1	2023
Algorithm Decision (AD): Algorithm Decision 2.4.1	3	2023	3	2023
Integration Decision (ID): Integration Decision 2.3	2	2023	2	2023
System Integration: System Integration 2.2	1	2022	2	2022
System Integration: System Integration 2.3	2	2023	4	2023
Testing:	1	2022	4	2023
System Engineering:	1	2022	4	2023
System Fielding Decision (FD): Fielding Decision 2.2	3	2022	3	2022
Algorithm Performance Analysis:	1	2022	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3050 / Deployable JT Command and Control			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3050: Deployable JT Command and Control	5.728	2.480	3.840	3.785	-	3.785	3.558	3.612	3.669	3.744	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Deployable Joint Command and Control (DJC2) provides a self-contained, standardized, rapidly deployable, modular, scalable, and reconfigurable joint command and control (C2) capability to designated Geographic Combatant Commands (GCCs). DJC2 is the materiel solution to Defense Planning Guidance that called for the development of standing Joint Task Forces (JTFs) with a deployable C2 capability. DJC2 will ensure that Joint Force Commanders (JFC) are equipped, as well as trained and organized, to carry out their C2 responsibilities. DJC2 provides GCCs and JFCs a mission critical, integrated family of systems with which to plan, control, coordinate, execute, and assess operations. It is designed to deploy rapidly, set up within hours, and quickly provide necessary C2 mission and collaboration functionality across the full spectrum of JTF operations. The DJC2 has also been deployed in support of Humanitarian Assistance and Disaster Relief (HA/DR) efforts. The capability is intended for all levels of conflict and will be reconfigurable to meet specific GCC and JTF mission requirements. This capability is interoperable with higher and adjacent echelons of command (to include coalition allies) as well as with supporting elements to include joint forces.

FY24 funding supports development efforts for systems engineering, integration, and DJC2 Test Bed. Focus areas include emerging cyber security technologies and cloud hosting environments.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Systems Engineering & Integration	1.163	1.728	1.703	0.000	1.703
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Expanding capabilities of common infrastructure to increase speed to capability through containerization technologies and utilization of Development, Security, and Operations (DevSecOps) in order to rapidly deliver mission tailored applications and cloud based services. Developing Tier 1 capabilities to support multi-cloud environments and implementing software defined wide area network (SD-WAN) technologies to increase cyber posture. Evaluating technologies to support migration to Impact level 6 (IL6) and Impact Level 7 (IL7) cloud environments.					
<b>FY 2024 Base Plans:</b> Continue to expand capabilities of common infrastructure to increase speed to capability through containerization technologies and utilization of Development, Security, and Operations (DevSecOps) in order to rapidly deliver mission tailored applications and cloud based services. Further develop Tier 1 capabilities					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3050 / Deployable JT Command and Control			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
to support multi-cloud environments and software defined wide area network (SD-WAN) technologies. Initiate evaluation of technologies to support migration to Internet Protocol version 6 (IPv6), 5G, and Department of Defense cloud environments.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 slight decreases continues support for systems engineering, integration efforts for emerging cyber security technologies and cloud hosting environments.											
<b>Title:</b> DJC2 RDT&E Test Bed  <b>Articles:</b>							1.317 -	2.112 -	2.082 -	0.000 -	2.082 -
<b>FY 2023 Plans:</b> Test technologies to support containerization of applications and services, as well as migration to Impact level 6 (IL6) and Impact Level 7 (IL7) cloud environments. Testing Tier 1 capabilities to support multi-cloud environments and software defined wide area network (SD-WAN) technologies to increase cyber posture.  <b>FY 2024 Base Plans:</b> Continue to test technologies that support containerization of applications and services to increase speed to capability. Continue to test and evaluate Tier 1 capabilities to support multi-cloud environments and software defined wide area network (SD-WAN) technologies.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 slight decrease continues to support systems engineering, integration efforts for emerging cyber security technologies and cloud hosting environments.											
Accomplishments/Planned Programs Subtotals							2.480	3.840	3.785	0.000	3.785
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN /2906: Tactical/ Mobile C4I Systems/DJC2	18.790	27.434	52.026	-	52.026	65.664	71.364	61.095	62.492	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL	Project (Number/Name) 3050 / Deployable JT Command and Control	

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
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Remarks

D. Acquisition Strategy

This RDT&E line supports an evolutionary acquisition strategy. The intent of this strategy is to: develop a system based upon a current understanding of joint requirements; rapidly field systems based upon those requirements; analyze operational utilization of the systems; and roll the results of the analysis into periodic upgrades of the systems to maintain currency and maximize operational effectiveness. Efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of program insertion. The baseline configuration is based upon existing Command, Control, Communications, Computers, & Intelligence (C4I) systems, scaled to the Combatant Command level. The follow-on configurations will include newly developed capabilities based on emergent, joint requirements and operational feedback based upon utilization of earlier delivered systems. Ultimately, the goal is to perform quick and affordable integration of emergent transformational Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) technologies in support of information warfare and overall efforts required to pace the threat. This is accomplished via technical analysis and engineering efforts associated with implementation of new technology to enable rapid introduction of new products and technology, prevent obsolescence, and end of support issues enhancements via incremental software & hardware upgrades delivered on annual build release.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3050 / Deployable JT Command and Control					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC : Panama City, FL	0.746	0.298	Dec 2021	0.467	Dec 2022	0.454	Dec 2023	-		0.454	Continuing	Continuing	Continuing
Hardware/Software Development	C/CPAF	GTRI : Atlanta, GA	1.285	0.521	Dec 2021	0.812	Dec 2022	0.795	Dec 2023	-		0.795	Continuing	Continuing	Continuing
Subtotal			2.031	0.819		1.279		1.249		-		1.249	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Integration	WR	NSWC : Panama City, FL	0.707	0.298	Dec 2021	0.449	Dec 2022	0.454	Dec 2023	-		0.454	Continuing	Continuing	Continuing
Subtotal			0.707	0.298		0.449		0.454		-		0.454	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC : Panama City, FL	1.707	0.769	Dec 2021	1.204	Dec 2022	1.174	Dec 2023	-		1.174	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NSWC : Panama City, FL	0.958	0.446	Dec 2021	0.676	Dec 2022	0.681	Dec 2023	-		0.681	Continuing	Continuing	Continuing
Subtotal			2.665	1.215		1.880		1.855		-		1.855	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NIWC PAC : San Diego, CA	0.325	0.148	Dec 2021	0.232	Dec 2022	0.227	Dec 2023	-		0.227	Continuing	Continuing	Continuing
Subtotal			0.325	0.148		0.232		0.227		-		0.227	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL					Project (Number/Name) 3050 / Deployable JT Command and Control					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			5.728	2.480		3.840		3.785		-		3.785	Continuing	Continuing	N/A

Remarks

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<b>Project (Number/Name)</b>	3050 / Deployable JT Command and Control
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Proj 3050		FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Developmental Test/Operational Test				DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲	
Production																													
DJC2 System Enhancements		DJC2 System Enhancement Deliveries																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL	Project (Number/Name) 3050 / Deployable JT Command and Control	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3050</b>				
Developmental Test/Operational Test FY 2022	3	2022	3	2022
Developmental Test/Operational Test FY 2023	3	2023	3	2023
Developmental Test/Operational Test FY 2024	3	2024	3	2024
Developmental Test/Operational Test FY 2025	3	2025	3	2025
Developmental Test/Operational Test FY 2026	3	2026	3	2026
Developmental Test/Operational Test FY 2027	3	2027	3	2027
Developmental Test/Operational Test FY 2028	3	2028	3	2028
Production: DJC2 System Enhancements: DJC2 System Enhancement Deliveries	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3260: Naval Operations Business Logistics Enterprise (NOBLE)	164.234	92.032	112.477	62.791	-	62.791	49.082	42.165	37.365	38.115	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

Naval Operational Business Logistics Enterprise (NOBLE) is the logistics information technology family of systems comprised of the Naval Operational Supply System (NOSS), the Naval Maintenance, Repair, and Overhaul (N-MRO), and supporting capabilities to include the common platform hosting environment and data exchange solutions for Logistics Information Technology systems and applications. NOBLE enables combat lethality by generating and sustaining Navy and Marine Corps force readiness for operational commanders afloat and ashore, providing the foundational capability to keep ships driving, planes flying, and weapons firing from an equipment Operational Availability (Ao) perspective. NOBLE is the centerpiece of the Fleet's strategic imperative to improve Sailor, unit and group maintenance self-sufficiency combat operations in a communications and access-denied arena.

NOBLE's mission is to provide the Navy and Marine Corps with an integrated, scalable, and cybersecure capability that supports the management of logistical information, material, and funds required to maintain and operate ships, submarines, and aircraft.

Funding provides for separate NOSS and N-MRO functional enhancements, site installation activities, data migration and validation, training development, and execution of NOSS and N-MRO standalone Build 2 Government Independent Validation and Verification (IV&V), Functional Managers Certification (FMC), and operational testing (i.e. User Acceptance Testing (UAT); NOSS software licensing; and commence NOSS and N-MRO Build 3/4 planning, prototyping and configuration, integration , testing, training, and site installation activities to support naval operational supply, and Aviation intermediate and Maritime nuclear organizational level maintenance activities. Funding also provides for licensing and delivery of the common platform hosting environment and data exchange solutions.

## B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Naval Operational Supply System (NOSS)	33.427	30.479	11.857	0.000	11.857
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Complete standalone NOSS Build 1 prototyping and configuration; conclude backward compatibility with multiple legacy systems integration to improve cyber security to meet current threat profiles; laboratory integration with interface partners; data migration and validation activities; obtained a NOSS Authority to Operate (ATO); completed training materials; completed site installation activities; completed Government IV&V; and complete Functional Managers Certification (FMC) and complete operational User Acceptance Testing (UAT) efforts for					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL		Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
One (1) Central Issue Facility (CIF). Continue NOSS Build 2, configuration, and integration with Navy Financial Systems.  <b>FY 2024 Base Plans:</b> Complete NOSS Build 2 laboratory testing with interface partners, training materials, site installation activities, data migration and validation activities to support Government IV&V, FMC, and UAT efforts for Submarine Readiness Squadrons 32 and 34. Commence Build 3/4 planning, prototyping and configuration, integration, testing, training, and site installation activities to support naval operational supply integration with N-MRO.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The NOSS Build 1 (completed in FY23) has been recognized as the investment being leveraged, thus resulting in a decrease of RDT&E development necessary to complete the remaining NOSS Build 2 of configuration, integration, and testing.						
Title: Naval Maintenance, Repair, and Overhaul (N-MRO)  <b>Articles:</b>		58.605 -	81.998 -	50.934 -	0.000 -	50.934 -
<b>FY 2023 Plans:</b> Complete N-MRO Build 1 prototyping and configuration. Complete training, site installation activities; data migration and validation activities; and requisite cybersecurity testing necessary in order to support backward compatibility with multiple legacy systems to improve cyber security to meet current threat profiles. Application integration within the Consolidated Afloat Network Enterprise Services (CANES), the Navy ashore cloud, and the USMC operating environments; obtain a N-MRO Authority to Operate (ATO); Government IV&V, Functional Managers Certification (FMC), and operational testing (i.e. User Acceptance Testing (UAT) in support of (1) Aviation squadron, one (1) USMC squadron, and one (1) DDG.  <b>FY 2024 Base Plans:</b> Complete N-MRO Build 2 functional enhancements configuration, laboratory testing with interface partners, training materials, site installation activities, data migration and validation activities to support Government IV&V, FMC, and UAT. Commence Build 3/4 planning, prototyping and configuration, integration, testing, training, and site installation activities to support integration with NOSS to support Aviation intermediate and Maritime						



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023							
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>		<b>Project (Number/Name)</b> 3260 / <i>Naval Operations Business Logistics Enterprise (NOBLE)</i>							
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>					
nuclear organizational level maintenance activities. Deliver the common platform hosting environment and data exchange solution to support LOG IT deployments.											
<b>FY 2024 OCO Plans:</b> N/A											
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The standalone N-MRO Build 1 completed the functionality necessary to support the N-MRO Build 2 configuration, and the decrease from FY23 to FY24 recognizes the previous FY23 investment, thus resulting in a decrease of RDT&E development necessary to complete integration, and testing. The decrease is also a result of the cost savings obtained through negotiated N-MRO licensing costs.											
<b>Accomplishments/Planned Programs Subtotals</b>		92.032	112.477	62.791	0.000	62.791					
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2611: <i>Naval Tact</i> <i>Cmd Supt Sys (NTCSS)</i>	14.439	19.038	15.374	-	15.374	17.536	17.845	18.194	18.610	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
NOBLE has employed the use of competitive Other Transaction Authority (OTA). Software development/configuration will be comprised of multiple builds to include the ability to utilize mobile computing devices, each with increasing net-centric services capability. NOBLE leverages Commercial Off The Shelf (COTS) software programs. Hardware infrastructure will be provided by CANES, Integrated Shipboard Network System (ISNS), Navy Marine Corps Intranet (NMCI), Next Generation Enterprise Network (NGEN), OneNET (the OCONUS (outside of continental United States) network), and the Department of Navy commercial cloud computing environments, and US Marine Corps environments.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NOME Software Development	MIPR	PEO STRI : Orlando, FL	6.011	0.000		0.000		0.000		-		0.000	0.000	6.011	-
NOME Software Development/Infrastructure	C/CPFF	Palantir : Palo Alto, CA	3.500	0.000		0.000		0.000		-		0.000	0.000	3.500	-
NAMS Software Development	MIPR	PEO STRI : Orlando, FL	4.912	0.000		0.000		0.000		-		0.000	0.000	4.912	-
NOSS Software Development/Infrastructure	C/CPFF	Palantir : Palo Alto, CA	4.143	0.000		0.000		0.000		-		0.000	0.000	4.143	-
NOSS Software Development	MIPR	PEO STRI : Orlando, FL	39.731	24.867	Oct 2021	22.738	Oct 2022	10.857	Oct 2023	-		10.857	Continuing	Continuing	Continuing
NAMS Software Development/Infrastructure	C/CPFF	Palantir : Palo Alto, CA	3.500	0.000		0.000		0.000		-		0.000	0.000	3.500	-
N-MRO Software Development	MIPR	PEO STRI : Orlando, FL	46.167	42.005	Oct 2021	76.669	Oct 2022	47.434	Oct 2023	-		47.434	Continuing	Continuing	Continuing
N-MRO Software Development/Infrastructure	C/CPFF	NIWC Atlantic : Norflok, VA	2.237	0.000		0.000		0.000		-		0.000	0.000	2.237	-
NOME System Engineering	WR	NIWC Atlantic : Norfolk, VA	2.940	0.000		0.000		0.000		-		0.000	0.000	2.940	-
NOSS System Engineering	WR	NIWC Atlantic : Norfolk, VA	4.591	3.000	Oct 2021	2.627	Oct 2022	0.000		-		0.000	0.000	10.218	-
NOSS System Engineering	WR	USFFC : Norfolk, VA	1.746	0.000		0.000		0.000		-		0.000	0.000	1.746	-
N-MRO System Engineering	WR	NIWC Atlantic : Norfolk, VA	2.147	5.000	Oct 2021	1.809	Oct 2022	2.000	Oct 2023	-		2.000	Continuing	Continuing	Continuing
NAMS Detailed BPR	WR	NAVAIR : Patuxent River, MD	0.849	0.000		0.000		0.000		-		0.000	0.000	0.849	-
NAMS System Engineering	WR	NIWC Atlantic : Norfolk, VA	3.690	0.000		0.000		0.000		-		0.000	0.000	3.690	-
N-MRO Detailed BPR	WR	NAVAIR : Patuxent River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
NAMS Analysis of Alternatives (AoA)	C/CPFF	Client Solution Architects LLC : San Diego, CA	0.537	0.000		0.000		0.000		-		0.000	0.000	0.537	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NAMS Analysis of Alternatives (AoA)	MIPR	WHQS : Washington DC	0.539	0.000		0.000		0.000		-		0.000	0.000	0.539	-
NOSS Software Development/Infrastructure	C/CPFF	NAVAIR : Patuxent River, MD	0.000	0.000		4.000	Oct 2022	0.000		-		0.000	0.000	4.000	-
N-MRO Software Development/Infrastructure	C/CPFF	NAVAIR : Patuxent River, MD	0.000	3.000	Jun 2022	3.300	Oct 2022	0.000		-		0.000	0.000	6.300	-
Subtotal			127.240	77.872		111.143		60.291		-		60.291	Continuing	Continuing	N/A
Remarks															
Variance in cost from FY23 to FY24 is due to buying a two year unlimited user license for N-MRO in FY23, so no license cost in FY24. Additionally, both N-MRO and NOSS are leveraging the investments in FY23 for software configuration to offset the cost in FY24 for the build 2 efforts.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAVSEA : Washington, D.C.	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	COTF : Norfolk, VA	0.450	0.000		0.000		0.000		-		0.000	0.000	0.450	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAVAIR : Patuxent River, MD	0.450	0.000		0.000		0.000		-		0.000	0.000	0.450	-
Developmental Test & Evaluation (DT&E)	WR	NAVAIR : Patuxent River, MD	0.000	0.100	Oct 2021	0.000	Oct 2022	1.000	Oct 2023	-		1.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	COTF : Norfolk, VA	0.500	0.000	Oct 2021	0.420	Oct 2022	1.000	Oct 2023	-		1.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAVSUP : Mechanicsburg, PA	0.700	0.200	Oct 2021	0.500	Oct 2022	0.500	Oct 2023	-		0.500	Continuing	Continuing	Continuing
Subtotal			2.500	0.300		0.920		2.500		-		2.500	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NOME System Engineering Support	WR	NIWC Pacific : San Diego, CA	2.620	0.000		0.000		0.000		-		0.000	0.000	2.620	-
NOSS System Engineering Support	WR	NIWC Pacific : San Diego, CA	6.840	2.000	Oct 2021	0.414	Oct 2022	0.000		-		0.000	0.000	9.254	-
NAMS System Engineering Support	WR	NIWC Pacific : San Diego, CA	2.870	0.000		0.000		0.000		-		0.000	0.000	2.870	-
N-MRO Systems Engineering Support	WR	NIWC Pacific : San Diego, CA	2.153	3.000	Oct 2021	0.000		0.000		-		0.000	0.000	5.153	-
NOSS Systems Engineering Support	C/CPFF	Deloitte : San Diego, CA	5.144	2.160	Jan 2022	0.000		0.000		-		0.000	0.000	7.304	-
NAMS Systems Engineering Support	C/CPFF	SENTEK Global : San Diego, CA	1.575	0.000		0.000		0.000		-		0.000	0.000	1.575	-
NOME Systems Engineering Support	C/CPFF	SENTEK Global : San Diego, CA	1.350	0.000		0.000		0.000		-		0.000	0.000	1.350	-
N-MRO Systems Engineering Support	C/CPFF	Deloitte : San Diego, CA	2.300	3.500	Jan 2022	0.000		0.000		-		0.000	0.000	5.800	-
NOME Program Management Support	C/CPFF	Booz Allen Hamilton : San Diego, CA	2.000	0.000		0.000		0.000		-		0.000	0.000	2.000	-
NOSS Program Management Support	C/CPFF	Booz Allen Hamilton : San Diego, CA	4.194	1.200	Oct 2021	0.000		0.000		-		0.000	0.000	5.394	-
NAMS Program Management Support	C/CPFF	Booz Allen Hamilton : San Diego, CA	3.000	0.000		0.000		0.000		-		0.000	0.000	3.000	-
N-MRO Program Management Support	C/CPFF	Booz Allen Hamilton : San Diego, CA	0.448	2.000	Oct 2021	0.000		0.000		-		0.000	0.000	2.448	-
Subtotal			34.494	13.860		0.414		0.000		-		0.000	0.000	48.768	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)					
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		164.234	92.032		112.477		62.791		-		62.791	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023			
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL								Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)			

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																												
Naval Operations Supply System (NOSS)								BLD 1 LD ▲				BLD 2 LD ▲				BLD 3 LD ▲				BLD 4 LD ▲								
Software Deliveries																												
NOSS				BLD 1 SW				▲				BLD 2 SW				▲				BLD 3 SW				▲				
			▲										▲								▲							
														▲						BLD 4 SW				▲				
Test & Evaluation Milestones																												
NOSS								BLD 1 FMC/OT (UAT) ▲				BLD 2 FMC/OT (UAT) ▲				BLD 3 FMC/OT (UAT) ▲				BLD 4 FMC/OT (UAT) ▲								
								▲	▲			▲	▲			▲	▲			▲	▲							

BLD- Build; SW - Software; FMC- Functional Manager Certification; OT- Operational Test; UAT - User Acceptance Test

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023			
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL								Project (Number/Name) 3260 / Naval Operations Business Logistics Enterprise (NOBLE)			

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																												
Naval Maintenance Repair and Overhaul (N-MRO)								BLD 1 LD ▲				BLD 2 LD ▲				BLD 3 LD ▲				BLD 4 LD ▲								
Software Deliveries				BLD 1 SW							BLD 2 SW				BLD 3 SW				BLD 4 SW									
N-MRO																												
Test & Evaluation Milestones																												
N-MRO																												

BLD- Build; SW - Software; FMC- Functional Manager Certification; OT- Operational Test; UAT - User Acceptance Test

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>	<b>Project (Number/Name)</b> 3260 / <i>Naval Operations Business Logistics</i> <i>Enterprise (NOBLE)</i>	

**Schedule Details**

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
<b><i>Proj 3260</i></b>				
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 1 Software Development	1	2022	4	2023
Naval Operational Supply System (NOSS) Build 1 Software Development	1	2022	3	2023
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 1 Functional Manager Certification/Operational Test (User Acceptance Test)	2	2023	4	2023
Naval Operational Supply System (NOSS) Build 1 Functional Manager Certification/Operational Test (User Acceptance Test)	3	2023	4	2023
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 1 Limited Deployment	4	2023	4	2023
Naval Operational Supply System (NOSS) Build 1 Limited Deployment	4	2023	4	2023
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 2 Software Development	1	2024	3	2024
Naval Operational Supply System (NOSS) Build 2 Software Development	3	2022	3	2024
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 2 Functional Manager Certification/Operational Test (User Acceptance Test)	3	2024	4	2024
Naval Operational Supply System (NOSS) Build 2 Functional Manager Certification/Operational Test (User Acceptance Test)	3	2024	4	2024
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 2 Limited Deployment	4	2024	4	2024
Naval Operational Supply System (NOSS) Build 2 Limited Deployment	4	2024	4	2024
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 3 Software Development	4	2024	3	2025
Naval Operational Supply System (NOSS) Build 3 Software Development	4	2024	3	2025
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 3 Functional Manager Certification/Operational Test (User Acceptance Test)	3	2025	4	2025
Naval Operational Supply System (NOSS) Build 3 Functional Manager Certification/Operational Test (User Acceptance Test)	3	2025	4	2025
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 3 Limited Deployment	4	2025	4	2025



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>		<b>Project (Number/Name)</b> 3260 / <i>Naval Operations Business Logistics</i> <i>Enterprise (NOBLE)</i>
		<b>Start</b>		<b>End</b>
<b>Events by Sub Project</b>		<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>
Naval Operational Supply System (NOSS) Build 3 Limited Deployment		4	2025	4
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 4 Software Development		3	2025	2
Naval Operational Supply System (NOSS) Build 4 Software Development		3	2025	2
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 4 Functional Manager Certification/Operational Test (User Acceptance Test)		3	2026	4
Naval Operational Supply System (NOSS) Build 4 Functional Manager Certification/Operational Test (User Acceptance Test)		3	2026	4
Naval Operational Supply System (NOSS) Build 4 Limited Deployment		4	2026	4
Naval Maintenance, Repair, and Overhaul (N-MRO) Build 4 Limited Deployment		4	2026	4

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3324 / Navy Air Operations Command and Control (NAOC2)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3324: Navy Air Operations Command and Control (NAOC2)	17.031	0.686	0.740	0.803	-	0.803	0.785	0.802	0.818	0.835	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Navy Air Operations Command and Control (NAOC2): NAOC2 tests and integrates US Air Force program of record systems - Theater Battle Management Core System (TBMCS) and its replacement Kessel Run Applications Kit for Enterprise Navy (KRAKEN) which provides an integrated and scalable planning system for standardized, secure, and automated decision support for Air Force, Joint, and Allied commanders worldwide - to operate in the Navy enterprise network environment such as Consolidated Afloat Networks and Enterprise Services (CANES). These programs provide automated air operations planning, execution management and intelligence capabilities for fleet commanders, Commander Carrier Strike Groups, Commander Expeditionary Strike Groups, Commander Landing Forces, and Joint Task Force Commanders. KRAKEN (when fielded) will provide rapid, agile delivery of capabilities to the fleet by commercial cloud infrastructure using Development, Security, Operations (DevSecOps) cloud native applications. KRAKEN is comprised of multiple tactical software applications that will provide continuous iterate delivery of software to shipboard and shore users. It will also align with the Joint C2 Reference Architecture (JC2RA) such as CANES. KRAKEN is not natively compatible with Navy Information Technology (IT) infrastructure, such as CANES, and requires a significant level of system integration. Continuation of Navy integration and test efforts will significantly enhance the ability of the Joint Force Air Component Commander and Combined Air Operations Center personnel to plan daily air operations including strike, airlift, offensive/defensive air, missile defense, and refueling missions in support of combat operations. Developmental Testing is continuous and operates in parallel with the DevSecOps construct. KRAKEN will be continued for new technology insertion into Navy infrastructure network and hardware in support of Naval Air C2 and Net Enabled Weapons system integration. KRAKEN addresses the requirement of war fighter distributed planning and execution processes along with significantly improving Joint interoperability. TBMCS continues a hardware transition to CANES. Currently, TBMCS is the key system that is used to conduct real world air planning in the Joint and Navy environments. KRAKEN will replace TBMCS while bringing more flexibility to the war fighter.

FY24 funding supports KRAKEN integration and development of Kubernetes based containers from the United States Air Force (USAF) into the CANES environment, and the development of the Commander Operational Test & Evaluation Force (COMOPTEVFOR), USAF, and Air Force Operational Test and Evaluation Center (AFOTEC) joint testing and certification plan.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Kessel Run Applications Kit for Enterprise Navy (KRAKEN) Integration and Testing	0.686	0.740	0.803	0.000	0.803
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
Complete TBMCS modernization effort and prep fully containerized application for fielding to ships equipped with the correct version of CANES/ACS. Continue working with the USAF Kessel Run (KR) team to incorporate Navy					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>		<b>Project (Number/Name)</b> 3324 / <i>Navy Air Operations Command and Control (NAOC2)</i>		
<b><u>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</u></b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
user feedback into future releases of fielded applications. Continue Integration of new KRAKEN containers into the RedHat ACS and participating in joint testing with COMOPTEVFOR, USAF, AFOTEC.  <b><i>FY 2024 Base Plans:</i></b> Continue DevSecOps integration with CANES. Continue working with the USAF Kessel Run (KR) team to incorporate Navy user feedback into future releases of fielded applications. Continue Integration of new KRAKEN containers into the RedHat ACS and participating in joint testing with COMOPTEVFOR, USAF, AFOTEC.  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> FY24 budget increase funds test strategy development and automated functional tests for Kessel Run Applications Kit for Enterprise Navy (KRAKEN).						
<b>Accomplishments/Planned Programs Subtotals</b>		0.686	0.740	0.803	0.000	0.803
<b><u>C. Other Program Funding Summary (\$ in Millions)</u></b>						
N/A						
<b><u>Remarks</u></b>						
<b><u>D. Acquisition Strategy</u></b>						
Theater Battle Management Core System (TBMCS) and KRAKEN are designed, developed, and delivered by the Air Force and will be integrated for a Navy Common Computing Environment (CCE) such as Consolidated Afloat Network and Enterprise Services (CANES). As a Joint interest program, this approach satisfies the current validated requirements, supports the accelerated retirement of legacy hardware, and reduces overall risk to the program.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3324 / Navy Air Operations Command and Control (NAOC2)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/ Training DevelopmentText/ Configuration Management	WR	NIWC Pacific : San Diego, CA	4.023	0.094	Nov 2021	0.000		0.000		-		0.000	0.000	4.117	4.117
Integration and Testing	MIPR	CECOM/MITRE : San Diego, CA	0.457	0.143	Nov 2021	0.000		0.000		-		0.000	0.000	0.600	0.600
Integration and Testing	WR	NIWC Pacific : San Diego, CA	5.332	0.375	Nov 2021	0.000		0.000		-		0.000	0.000	5.707	5.707
NAOC2 Product Development	Various	VARIOUS : VARIOUS	2.512	0.000		0.000		0.000		-		0.000	0.000	2.512	2.512
Systems Engineering/ Training Development/ Configuration Management	WR	NIWC Atlantic : Charleston, SC	0.000	0.000		0.480	Nov 2022	0.252	Nov 2023	-		0.252	Continuing	Continuing	Continuing
Integration and Testing	WR	NIWC Atlantic : Charleston, SC	0.000	0.000		0.184	Nov 2022	0.390	Nov 2023	-		0.390	Continuing	Continuing	Continuing
Subtotal			12.324	0.612		0.664		0.642		-		0.642	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development/ILS Support	WR	VARIOUS : VARIOUS	0.538	0.000		0.000		0.000		-		0.000	0.000	0.538	0.538
Subtotal			0.538	0.000		0.000		0.000		-		0.000	0.000	0.538	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	COMOPTEVFOR : Norfolk, VA	0.450	0.074	Nov 2021	0.000		0.000		-		0.000	0.000	0.524	0.524
Developmental Test & Evaluation (DT&E)	WR	NIWC Pacific : San Diego, CA	2.651	0.000		0.000		0.000		-		0.000	0.000	2.651	2.651

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 3324 / Navy Air Operations Command and Control (NAOC2)					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NIWC Atlantic : Charleston, SC	0.000	0.000		0.076	Nov 2022	0.161	Nov 2023	-		0.161	Continuing	Continuing	Continuing
Subtotal			3.101	0.074		0.076		0.161		-		0.161	Continuing	Continuing	N/A
Remarks FY24 Test and Evaluation increase funds additional test strategy development and automated functional tests for Kessel Run Applications Kit for Enterprise Navy (KRAKEN).															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering and Program Management Support	C/CPFF	Various : San Diego, CA	1.068	0.000		0.000		0.000		-		0.000	0.000	1.068	1.068
Subtotal			1.068	0.000		0.000		0.000		-		0.000	0.000	1.068	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			17.031	0.686		0.740		0.803		-		0.803	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023																
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL								Project (Number/Name) 3324 / Navy Air Operations Command and Control (NAOC2)								
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Kessel Run Applications Kit for Enterprise Navy (KRAKEN) Integration and Test																												
								Continuous Software Application - Agile Testing and Development																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL	Project (Number/Name) 3324 / Navy Air Operations Command and Control (NAOC2)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3324</i>				
Kessel Run Applications Kit for Enterprise Navy (KRAKEN) Integration and Test	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL				Project (Number/Name) 9123 / FORCEnet			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9123: FORCEnet	248.203	2.146	2.237	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	252.586
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

FORCEnet Funding supports IW Portfolio Health Assessments (PHAs) of Navy mission areas and identifies gaps in Information Warfare (IW) capabilities in the context of assessed mission areas.

Funding supports IW Portfolio Health Assessments (PHAs) of Navy mission areas and identifies gaps in IW capabilities in the context of assessed mission areas. Funding support vignettes, technical baselines, architecture products, and briefings developed to support sponsor decision making processes.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> FORCEnet	2.146	2.237	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> - Guided by OPNAV N2N65 priorities, Forcenet/PHA will continue to expand on upon System of Systems (SoS) mission engineering analyses and ongoing experimentation to iteratively mature the findings and outcomes, while increasing the support to a development of Limited Operational Capabilities. - Continue to utilize and study Navy mission areas in support of SoS engineering assessments identifying integration and interoperability gaps, trades, and solutions for sponsor related equities. - Continue to identify Navy mission area gaps in Information Warfare (IW) capabilities to prioritize Science and Technology (S&T) efforts for future budget decisions. Continued to identify critical architectural dependencies that enable mission situational awareness, which is a key component of the Portfolio Health Assessments (PHAs). - Continue to package assessments to support sponsor decision-making processes. - Continue to assess trade space and solutions, ensuring Force level capability and System of Systems (SoS) integration and interoperability across areas of interest to stakeholders including OPNAV N2/N6, N9I, ASN RDA, NAVWAR, NAVIFOR, PEO C4I. - Maximize utility of analytic products by understanding each stakeholder and their specific needs to provide them with objective, focused, relevant, and useable analysis.					
<b>FY 2024 Base Plans:</b>					



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604231N / <i>COMMAND AND CONTR</i> <i>OL</i>		<b>Project (Number/Name)</b> 9123 / <i>FORCEnet</i>	

<b><u>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</u></b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A					
<b><i>FY 2024 OCO Plans:</i></b> N/A					
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Decrease of \$2.237M between FY23 and FY24 is attributed to a Naval Information Warfare and Architecture vertical reduction, eliminating funding beginning in FY24.					
<b>Accomplishments/Planned Programs Subtotals</b>	2.146	2.237	0.000	0.000	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
 FORCEnet is a non-acquisition effort that informs and matures Navy decisions, which in turn impacts acquisition programs. Activities include acquiring intellectual capital in emerging technical areas through contracts providing technical engineering expertise and surge capacity for emerging tasks.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL						Project (Number/Name) 9123 / FORCEnet			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development and Systems Engineering	Various	Various : Various	4.331	0.000		0.000		0.000		-		0.000	0.000	4.331	-
Subtotal			4.331	0.000		0.000		0.000		-		0.000	0.000	4.331	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Logistics Support	Various	Various : Various	136.842	0.000		0.000		0.000		-		0.000	0.000	136.842	-
Information Warfare Roadmaps and Analysis	C/CPFF	Metron : Reston, VA	17.159	1.700	May 2022	1.526	May 2023	0.000		-		0.000	0.000	20.385	-
Information Warfare Roadmaps and Analysis	WR	NIWC PAC : San Diego, CA	4.267	0.446	May 2023	0.521	May 2023	0.000		-		0.000	0.000	5.234	-
Information Warfare Roadmaps and Analysis	C/CPFF	BAH : McLean, VA	0.651	0.000		0.190	Mar 2023	0.000		-		0.000	0.000	0.841	-
Subtotal			158.919	2.146		2.237		0.000		-		0.000	0.000	163.302	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	77.271	0.000		0.000		0.000		-		0.000	0.000	77.271	-
Subtotal			77.271	0.000		0.000		0.000		-		0.000	0.000	77.271	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL						Project (Number/Name) 9123 / FORCEnet			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	Various	Various : Various	7.682	0.000		0.000		0.000		-		0.000	0.000	7.682	-
Subtotal			7.682	0.000		0.000		0.000		-		0.000	0.000	7.682	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			248.203	2.146		2.237		0.000		-		0.000	0.000	252.586	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL		Project (Number/Name) 9123 / FORCEnet	

		FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 9123 FORCEnet																													
Portfolio Health Assessments: Portfolio Health Assessments																													

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / COMMAND AND CONTR OL	Project (Number/Name) 9123 / FORCEnet

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9123 FORCEnet				
Portfolio Health Assessments: Portfolio Health Assessments	1	2022	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604234N / <i>Advanced Hawkeye</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	5,855.072	339.032	487.281	399.919	-	399.919	402.751	387.226	390.948	416.254	675.258	9,353.741
3051: <i>E-2D Adv Hawkeye</i>	5,790.853	319.725	467.281	399.919	-	399.919	402.751	387.226	390.948	416.254	675.258	9,250.215
9999: <i>Congressional Adds</i>	64.219	19.307	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	103.526

## A. Mission Description and Budget Item Justification

The E-2D Advanced Hawkeye (AHE) program provides the Navy with a carrier-based airborne command and control platform, which is equipped with the APY-9 radar system, multiple communications systems for data and voice, and additional sensor systems. All of these systems are integrated into the aircraft via a computing infrastructure that is highly automated, which enables a highly trained crew of just 5 aviators to conduct battle management that would otherwise require several dozen personnel at multiple locations.

E-2D is a core pillar of theater and carrier strike group air defense and a key enabler to Joint long-range fires kill webs necessary to defeat the threats of our peer adversaries. Work has begun on upgrading the 25-year old computing architecture of the AHE that will allow the Navy to lead the Joint All Domain Command and Control (JADC2) efforts in any theater.

As production of the airplane winds down (final airframe procurement is scheduled for FY23), the threat continues to increase in both capability and capacity. The E-2D Research, Development, Test and Evaluation budget reflects the Navy's investment into the E-2D to ensure that the US maintains a tactical advantage over any adversary.

Efforts initiated in recent years ensure that the E-2D can outpace the threat, and include upgrades to the air vehicle, mission systems, datalinks, and sensors. The program integrates and tests these new capabilities, and provides Fleet concurrent training equipment upgrades. Subsequent to successful testing, new capabilities are delivered on a regularly scheduled basis, and are put together as a Delta System/Software Configuration (DSSC) package to ensure commonality and configuration control across the Fleet.

Among the other E-2D mission systems R&D efforts, there are 2 major initiatives that will ensure that the E-2D is ready & relevant into the coming decades. First, obsolete and failing components of the 15-year old cockpit design are being addressed by HECTR (Hawkeye Cockpit Technical Refresh), which ensures a higher safety margin for carrier landings after 8-12 hour sorties, and will substantially decrease sustainment costs over the lifecycle of the airplane. Second is TCID (Theater Combat Identification), which includes the upgrades to the 25-year old computing infrastructure mentioned above. TCID will bring Multi-Level Security and Cross-Domain solutions through an Open Mission System (OMS) Architecture. TCID is the key to establishing the CNO's vision for the Naval Operational Architecture and the Joint Chiefs' vision for JADC2. HECTR and TCID are planned for DSSC-6, FY28 delivery.

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PE 0604234N: *Advanced Hawkeye* **UNCLASSIFIED** Page 2 of 26 R-1 Line #111 **Volume 3 - 220**



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye	
<p>DSSC 5: Accelerated fleet release plan utilizes agile development and test to fast-track fielding of capability in incremental drops in FY24, FY25, and FY26 vice the previous plan to field all DSSC 5 capability in FY25.</p> <p>DSSC-6: Fielding delayed from FY27 to FY28 to mitigate budget shortfalls. Developmental completion date changed from Q3/FY23 to Q2/FY25 Integration end date changed from Q1/FY26 to Q3/FY26 Developmental Test completion date changed from Q4/FY26 to Q3/FY27 Operational Test complete date changed from Q3/FY27 to Q4/FY28 Fleet Release date changed from Q3/FY27 to Q4/FY28</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>				Project (Number/Name) 3051 / <i>E-2D Adv Hawkeye</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3051: <i>E-2D Adv Hawkeye</i>	5,790.853	319.725	467.281	399.919	-	399.919	402.751	387.226	390.948	416.254	675.258	9,250.215
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The DSSC build schedule is outlined below along with the capabilities that are planned to comprise each DSSC build.

DSSC-3.1 is comprised of the following capabilities:

1. Crypto Modernization/Frequency Remapping: The E-2D Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/JTRS) with concurrent Multi-netting will be integrated into the E-2D. This effort includes replacing the Multifunctional Information Distribution System-Low Volume Terminal (MIDS LVT) radio with MIDS/JTRS that has incorporated Link-16 concurrent Multi-netting (CMN-4) and replacing the JTIDS High Power Amplifier Group with a Link-16 High Power Amplifier which will address Crypto Modernization and Frequency Remapping.

2. Hybrid-Beyond Line of Sight(H-BLOS)SIPRChat will provide a Secret Internet Protocol Router Network(SIPRNet)Chat capability via INMARSAT.

DSSC-4 is planned for operational test and Fleet release in FY23. DSSC-4 provides critical capabilities needed to outpace the threat and enables components of terminal defense. DSSC-4 is comprised of the following capabilities:

1. E-2D Navigation Warfare (NAVWAR) prevents loss of Global Positioning System (GPS) by using a Controlled Reception Pattern Antenna (CRPA) and antenna electronics (AE) unit which will function to provide GPS access in an Electronic Attack (EA) environment. NAVWAR significantly reduces the likelihood of loss of critical GPS Position, Navigation and Timing functionality that is fundamental to E-2D battlespace awareness and its contributions to multiple link networks. Without NAVWAR capability, the E-2D AHE will be unable to provide its services in GPS contested airspace, putting Navy units at unacceptable risk and hindering Joint operational flexibility. NAVWAR capability will allow the E-2D AHE to operate in areas where signal disruption and jamming would prohibit unprotected GPS reception. With this new capability, the E-2D AHE will be able to provide continuous operations in a degraded GPS environment for mission areas that depend on GPS for precise position, navigation, and timing.

2. The E-2D Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/JTRS)Tactical Targeting Networking Technology (TTNT) integrates Advanced Tactical Data Link functionality into the E-2D. This effort includes replacing the MIDS LVT radio with MIDS/JTRS that has incorporated Link-16 Concurrent Multi-Netting and TTNT. MIDS/JTRS TTNT is a key enabler for E-2D sensor netting capability in support of the NIFC mission. Conduct Communication-as-a-Service (CaaS) demonstration to support development of a solution for resilient communication paths of tactical information throughout the battlespace.

3. The fully integrated E-2D Secret Internet Protocol Router (SIPR) Chat capability will support integration of current collaboration tools including tactical "chat" (text) communications, real-time tasking, and Air Tasking Order distribution. Recent real world operations have demonstrated a migration of Command and Control communications from voice to Internet protocol based networks.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604234N / <i>Advanced Hawkeye</i>	<b>Project (Number/Name)</b> 3051 / <i>E-2D Adv Hawkeye</i>
<p>4. The E-2D DSSC-4 Counter Electronic Attack (CEA) capability will allow the E-2D radar system to maintain performance in a hostile electromagnetic interference environment. CEA will ensure continuous E-2D effectiveness is maintained in an Electronic Attack environment supporting the NIFC capability and overall Navy and Joint Integrated Air and Missile Defense strategy.</p> <p>5. DSSC-4 NIFC will incorporate software improvements to implement capabilities and performance needed to meet partial NIFC increment 3 requirements. This improvement will specifically improve From the Sea (FTS) performance. Additional details are classified.</p> <p>DSSC-5 has an accelerated fleet release plan to fast-track fielding of capability in incremental drops in FY24, FY25, and FY26 vice the previous plan to field all DSSC 5 capability in FY25. DSSC-5 provides the capabilities necessary for E-2D to meet NIFC increment 3 requirements and is comprised of the following capabilities:</p> <p>1. DSSC-5.1 will provide a Counter Electronic Attack (CEA) capability which will allow the E-2D radar system to maintain performance in an advanced hostile intentional electromagnetic interference environment. CEA will ensure continuous E-2D effectiveness is maintained in an Electronic Attack environment supporting the NIFC capability and overall Navy and Joint Integrated Air and Missile Defense strategy.</p> <p>2. DSSC-5.1 and 5.2 will provide phased E-2D Data Fusion Improvements for a fusion engine to blend on and off-board sensor derived track data (e.g. Electronic Surveillance, Satellite Receiver System data, Fighter to Fighter backlink data) with already blended radar, Identify Friend or Foe and Cooperative Engagement Capability track files, enhancing situational awareness and tactical decision making. Integrating Link-16 Network Participation Group 20 messages improves interoperability between E-2D and participating US Navy fighters, including 5th generation aircraft. This enhances the combat effectiveness of the E-2D, increases situational awareness and shortens kill-chain timeliness (including NIFC). Successful E-2D NIFC employment depends on a clear/unambiguous tactical picture.</p> <p>3. DSSC-5.2 and 5.3 will provide phased E-2D Cooperative Engagement Capability (CEC) Signal Data Processor (SDP) processing capacity and cryptographic upgrades required to implement the NIFC capabilities integrated into DSSC 5. CEC utilizes the SDP to encrypt tactical data and control the antenna during transmission of the data. This capability will correct obsolescence deficiencies based on processors, encryption, and capacity and establish the baseline architecture for expanded capability in CEC. The fully integrated E-2D Communication-as-a-Service (CaaS) will enhance CEC improvements to ensure resilient communication paths for tactical information throughout the battlespace. CEC Block II capabilities will ensure continued interoperability with the rest of the carrier strike group, and enable new CEC capabilities necessary to counter expected advances in threat capabilities. Additional CEC improvements will provide Communication-as-a-Service (CaaS) solutions for resilient communication paths of tactical information throughout the battlespace. Initial integration of CEC Block II capabilities must be conducted on time to maintain interoperability and keep pace with expected threats.</p> <p>4. DSSC-5.1, 5.2, and 5.3 will provide phased E-2D Sensor Netting capabilities which provide fusion of data from off-board sources via a high bandwidth network that will allow E-2D to support NIFC increment 3 requirements. Additional details are classified.</p> <p>E-2D Stores Performance Assessment Requested Quality (SPARQ):</p>		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604234N / <i>Advanced Hawkeye</i>	<b>Project (Number/Name)</b> 3051 / <i>E-2D Adv Hawkeye</i>
<p>Due to budget constraints and reprioritization of efforts, E-2D Stores Performance Assessment Requested Quality (SPARQ) capabilities have been removed from the DSSC-5 build. These funds were reprioritized to higher development priorities. Capability to be incorporated in a future DSSC build.</p> <p>DSSC-6 is planned for operational test in FY28 and Fleet Release in FY29. DSSC-6 provides the capabilities necessary for E-2D to meet NIFC increment 3 requirements and is comprised of the following capabilities:</p> <ol style="list-style-type: none"> <li>1. E-2D Hawkeye Cockpit Technical Refresh (HECTR) involves a redesign of critical components of the current E-2D Integrated Navigation Control and Display System (INCDS) driven by component obsolescence and fleet identified deficiencies. The effort includes the integration of these components with remaining cockpit hardware, integration of new software applications, and integration with TCID weapon system architecture. HECTR will also integrate a visual reference via a Helmet Mounted Display (HMD). HECTR will bring a Required Navigation Performance Area Navigation (RNP RNAV) capability to the E-2D platform, to improve reliability, to address current human machine interface (HMI) deficiencies and to address obsolescence of the current cockpit. All current functions of the INCDS will be included in the HECTR cockpit, to include unique non-navigation functions such as landing gear and gross take-off weight, which are currently housed in the Avionics Flight Management Computer. Additionally, new capability, such as a weather radar and traffic avoidance may be integrated.</li> <li>2. Theater E-2D Combat Identification (TCID) including Mission Computer Display re-architecture enables the E-2D to distribute longer range and more accurate Combat Identification data to the Carrier Strike Group (CSG). E-2D will receive National Technical Means (NTM) and tactical TCID data at all security levels and filter/distribute at the highest possible security levels to the tactical edge. Using the Open Mission Systems (OMS) design, the new mission computer architecture will provide multi-level security and cyber hardening provisions to support current and planned capabilities. The OMS design will allow faster integration of these capabilities required to pace the evolving threat. The fully integrated E-2D Communication-as-a-Service (CaaS) will enhance TCID improvements to ensure resilient communication paths for tactical information throughout the battlespace.</li> </ol> <p>E-2D Survivability capabilities for the ALQ-217 ESM:</p> <p>Due to budget constraints and reprioritization of efforts, E-2D Survivability capabilities for the ALQ-217 ESM capabilities have been removed from the DSSC-6 build. These funds were reprioritized to higher development priorities.</p> <p>Aerial Refueling (AR) Capability:</p> <p>AR capability allows the E-2D AHE to receive fuel from various organic and non-organic tanker aircraft. It provides Expanded Battle Space Surveillance and Targeting through significantly enhanced persistence and increased flexibility (range &amp; endurance). AR enables the E-2D AHE to fully support current Carrier Strike Group /Joint 24/7 Theater Operations by providing more versatile stationing and/or forward basing options. Previous E-2D testing established operational envelopes for KC-10, KC-130, KC-135, KC-707, and F/A-18E/F aircraft under E-2 Squadrons, PE 0204152N. Future AR tanker testing will include qualification of KC46 and MQ25.</p> <p>ESM E-2D capabilities for the ALQ-217:</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye	Project (Number/Name) 3051 / E-2D Adv Hawkeye				
E-2D AN/ALQ-217 Electronic Support Measures (ESM) integrates digital receiver and processing technology. The ALQ-217B digital ADRP addresses all known and imminent obsolescence issues in ALQ-217B Receiver/Processor. The replacement incorporates technical solutions to meet current and future mandates to support mission needs against evolving threats.							
Counter Electronic Attack (CEA) capability:							
E-2D CEA capability will allow the E-2D radar system to maintain performance in an advanced hostile electromagnetic interference environment. The E-2D CEA program will ensure continuous E-2D effectiveness is maintained in an Electronic Attack environment supporting the NIFC and long-range fires capability and overall Navy and Joint Integrated Air and Missile Defense strategy.							
Software Support Activity:							
Software Support Activity provides system requirements and integration in software development environments and software integration labs to support the E-2D software and hardware configurations. This includes software development tools, test tools, and hardware benches. Classified Support for various capabilities associated with the E-2D DSSC Builds.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Air Vehicle			14.023	25.148	21.222	0.000	21.222
Articles:			-	-	-	-	-
Description: E-2D Air Vehicle improvements include the development of solutions to improve safety, structural integrity, and systems reliability of the E-2D aircraft. Improvements include analysis and redesign of structural components and components to minimize excessive and premature wear, increase reliability, improve existing design deficiencies, and respond to Fleet urgent operational requirements. The improvements will address known, predicted, and emergent obsolescence equipment issues. These efforts include, but are not limited to Aerial Refueling (AR), Improved Landing Mode (ILM) capabilities, airframe, engine, and electrical component improvements, full scale fatigue testing, and technology upgrades. Future AR tanker testing will include qualification of KC-130, KC46, and MQ25. Funding also includes the flight/engine hours that are necessary for design, development, validation and verification.							
FY 2023 Plans:							
E-2D will continue improvement efforts to maintain aircraft readiness. The program will continue to address known, predicted, and emergent obsolescence equipment issues, continuing efforts from prior years. Continue Full Scale Fatigue Test to assure continued safe operation of the aircraft. The test program will continue towards the final goal of 20,000 test hours. Inspections and analysis will be performed at 500 effective flight hour intervals. Repairs of the test article will be conducted, as required. Upon completion of the fatigue test							

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye		Project (Number/Name) 3051 / E-2D Adv Hawkeye		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
article achieving 20,000 Effective Flight Hours (EFH), the test article will be disassembled and examined. The objectives is to identify fatigue critical locations and demonstrate that the E-2D aircraft structure satisfy the programs service life requirement. Continue AR capability envelope expansion efforts.  <b>FY 2024 Base Plans:</b> E-2D will continue improvement efforts to maintain aircraft readiness. The program will continue to address known, predicted, and emergent obsolescence equipment issues, continuing efforts from prior years. The test program will complete fatigue testing achieving 20,000 Effective Flight Hours (EFH). Upon completion the test article will be dissembled and examined. The objectives are is to identify fatigue critical locations and demonstrate that the E-2D aircraft structure satisfy the programs service life requirement. Continue AR capability envelope expansion efforts.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Air Vehicle FY23 to FY24 decrease is due to the completion of the 20,000 Full Scale Fatigue Effective flight hours (EFH) testing and transition to teardown and inspection.						
Title: Mission Systems  <div>Articles:</div> <b>Description:</b> E-2D Mission Systems improvements include development, integration, and testing of aircraft Mission Systems hardware/software updates and capability expansions to support aircraft avionics, displays, navigation, communication, electronic sensors, battle management, data fusion, system-of-systems, and countermeasure efforts. Efforts include continuous improvement of Mission Systems equipment and software in order to maintain mission availability for safe and reliable operations. Funding also includes development tools, test tools, and hardware benches in support of software environments and integration labs. Advanced system development and testing activities will address replacement components to address obsolescence, incorporate technical solutions to meet current and future mandates and standards, and incorporate improved technology to support evolving mission needs. Integration of Communication-as-a-Service (CaaS) to support future interoperability efforts. Studies and analyses will evaluate future capability expansions. Mission Systems efforts include, but are not limited to, Hawkeye Cockpit Technical Refresh (HECTR), improvements to/development of Communication Navigation and Identification Friend or Foe (CNI), Datalinks, Avionics, Mission System Software (MSS), Theater Combat Identification (TCID) mission computer, Naval Integrated Fire Control (NIFC), Data Fusion, Cooperative		124.694 -	225.861 -	238.000 -	0.000 -	238.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>		Project (Number/Name) 3051 / <i>E-2D Adv Hawkeye</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Engagement Capability (CEC) Signal Data Processor (SDP) Upgrade, battle management, technology upgrades, and emergent tactical requirements as they arise.						
<b>FY 2023 Plans:</b> Continue developmental efforts for DSSC-5 Sensor Netting solution. Complete DSSC-5 Data Fusion development efforts and begin integration. Continue development efforts and begin integration for HECTR. Continue development efforts for TCID, to include Mission computer and Display hardware, National Technical Means (NTM), Open Mission Systems (OMS) and Multi-level Security architecture. Continue development efforts for CaaS. Continue DSSC-5 CEC and SDP software and hardware efforts. Provide support of software development environments and integration labs required for E-2D software and hardware configurations. Systems engineering will support ongoing and emergent analysis and design/development/test efforts required to identify Engineering Change Proposal (ECP) requirements to respond to evolving and emergent threats, mission systems, communications systems, navigation equipment, and countermeasures. Evaluate future capability expansions via studies and analyses.						
<b>FY 2024 Base Plans:</b> Complete developmental efforts and begin integration for DSSC-5 Sensor Netting and Data Fusion solutions. Continue HECTR development. Continue development efforts for TCID, to include Mission computer and Display hardware, National Technical Means (NTM), Open Mission Systems (OMS) and Multi-level Security architecture, CaaS. Continue DSSC-5 CEC and SDP software and hardware efforts. Provide support of software development environments and integration labs required for E-2D software and hardware configurations. Systems engineering will support ongoing and emergent analysis and design/development/test efforts required to identify Engineering Change Proposal (ECP) requirements to respond to evolving and emergent threats, mission systems, communications systems, navigation equipment, and countermeasures. Evaluate future capability expansions via studies and analyses.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Mission Systems FY23 to FY24 increase is due to the ramp up of TCID and HECTR development and integration efforts.						
Title: Sensors		47.643	35.104	0.000	0.000	0.000
Articles:		-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>		Project (Number/Name) 3051 / <i>E-2D Adv Hawkeye</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>Description:</b> E-2D Sensor Systems provide real-time situational awareness to Joint Force and Carrier Strike Group operations via active and passive detection capabilities. Sensor product upgrades provide real-time, on-scene improvements in the execution of early warning, battle management, and command and control missions. E-2D Sensor Systems improvements include development, integration, and testing of aircraft Sensor Systems hardware/software updates and capability expansions. Advanced system development and testing activities will address replacement components to address obsolescence, incorporate technical solutions to meet current and future mandates, and incorporate improved technology in of support mission needs against evolving threats. E-2D AN/ALQ-217 Electronic Support Measures (ESM) Theater Combat Identification (TCID) upgrade integrates digital receiver and processing technology, enabling the E-2D to locate, identify, and track current and future radars in combination with other ESM platforms across L-16 and Tactical Targeting Networking Technology (TTNT). The ESM upgrades bring increased processor capacity, sensor fidelity, and time accuracy. These capabilities will ensure the E-2D can perform its intended mission at locations required to support Naval and Joint force operations. Counter Electronic Attack (CEA) includes implementation of technologies developed by the Office of Naval Research. Studies and analyses will evaluate future capability expansions.</p> <p><b>FY 2023 Plans:</b> Funds provided to continue DSSC-6 development efforts for CEA. Finalize testing and delivery of AN/ALQ-217 ESM Combat Identification upgrades. Funds provided for continuous emergent analysis and design/development/test efforts required to identify ECP requirements to respond to evolving, emergent threats and countermeasures. Evaluate future capability expansions via studies and analyses.</p> <p><b>FY 2024 Base Plans:</b> N/A</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Sensors FY23 to FY24 decrease is due to the finalization efforts of the AN/ALQ-217 ESM Combat Identification and Counter Electronic Attack (CEA) upgrades. CEA developments effort previously associated with have been de-prioritized due to funding constraints.</p>						
<b>Title:</b> Integration, Test, and Training		131.975	181.168	140.697	0.000	140.697
<b>Articles:</b>		-	-	-	-	-



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye		Project (Number/Name) 3051 / E-2D Adv Hawkeye		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>Description:</b> Funds the necessary E-2D integration, testing, and Fleet training equipment upgrades required to improve the E-2D weapon system capabilities to meet reliability and increase performance. Includes E-2D System Software Configuration (DSSC) integration, engineering risk reduction efforts, Developmental Test (DT), and Operational Test (OT). In order to improve E-2D resiliency in a cyber-warfare contested environment, concurrent program protection development and integration efforts for both cybersecurity and anti-tamper will be conducted to mitigate vulnerabilities in compliance with Risk Management Framework (RMF) processes, CyberSAFE certification, and Authorities to Operate for E-2D aircraft and labs. Efforts at the E-2D Systems Test and Evaluation Lab (ESTEL) include incorporating Live Virtual Construct (LVC) capabilities to support reducing test costs and schedule as well as to mitigate testing challenges with classified capabilities. Purchase support equipment necessary to meet reliability and increase performance requirements. Incorporate updated mission systems components into both E-2D test aircraft and ESTEL to ensure accurate testing of the E-2D weapons system. Updates training devices concurrent with aircraft DSSC configurations, which includes development of E-2D Distributed Readiness Training (D-DRT) simulators that will allow training to incorporate the latest capabilities into the simulators as well as design, development, and fielding of advanced training tactics.</p> <p><b>FY 2023 Plans:</b> Funds provided to complete DSSC-4 OT and continue DSSC-5 DT. Continue development of the D-DRT simulator in support of DSSC-5 for training on advanced tactics and incorporate test articles for flight test and in the lab. Continue to incorporate E-2D Cyber warfare program protection needed to pace future threats for critical capabilities in support of DSSC builds. Continue Fleet training development for DSSC capabilities. Continue development of Norfolk aircrew training procedures. Continue to build LVC capabilities, by providing the ability to replicate previous flight tests in the lab environment with captured data, which includes conducting live and/or virtual large scale test efforts.</p> <p><b>FY 2024 Base Plans:</b> Funds provided to complete DSSC-5 DT. Continue development of the D-DRT simulator in support of DSSC-5 for training on advanced tactics and incorporate test articles for flight test and in the lab. Continue to incorporate E-2D Cyber warfare program protection needed to pace future threats for critical capabilities in support of DSSC builds. Continue Fleet training development for DSSC capabilities. Continue development of Norfolk aircrew training procedures. Continue to develop build LVC capabilities to provide the ability to replicate previous flight tests in the lab environment with captured data to include conducting live and/or virtual large scale test efforts.</p> <p><b>FY 2024 OCO Plans:</b></p>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye				Project (Number/Name) 3051 / E-2D Adv Hawkeye			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Integration, Test, and Training FY23 to FY24 decrease is due to the completion of DSSC-4 OT efforts. The more complex and robust DSSC-5 DT is nearing completion which will decrease ground/flight testing. ESTEL upgrades to support the DSSC-5 capability is nearing completion.											
Title: Classified DSSC Support						1.390	0.000	0.000	0.000	0.000	
Articles:						-	-	-	-	-	
FY 2023 Plans: N/A											
FY 2024 Base Plans: N/A											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: N/A											
Accomplishments/Planned Programs Subtotals						319.725	467.281	399.919	0.000	399.919	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0195: E-2D AHE	944.475	1,407.727	182.817	-	182.817	199.490	23.428	0.000	0.000	2,234.667	21,402.295
• APN/0605: Initial Spares - E-2	2,295.577	2,047.417	2,451.244	-	2,451.244	1,832.522	1,690.871	1,601.312	1,822.090	Continuing	Continuing
• APN/0544: E-2 Series	199.869	188.897	183.246	-	183.246	186.747	139.272	89.821	188.458	1,527.305	4,632.267
Remarks											
D. Acquisition Strategy											
Milestone C Acquisition Strategy was approved by Milestone Decision Authority, Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) on 29 Dec 2008. Milestone C approval to proceed into Production and Deployment was given 11 June 2009 by USD (AT&L). Certification for entrance into Initial Operational Test & Evaluation was received on 06 Feb 2012. Full Rate Production Acquisition Strategy approved on 20 August 2012. Initial Operational Test & Evaluation concluded 1 October 2012. Successfully held a Defense Acquisition Board for Full Rate Production. Received a successful decision to enter into Full Rate											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>	Project (Number/Name) 3051 / <i>E-2D Adv Hawkeye</i>
<p>Production on 01 March 2013. Initial Operational Capability achieved on 10 October 2014. The program updated the ACAT-1C Acquisition Strategy on 14 December 2016 to cover Multi-year procurement II and modernization.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>				Project (Number/Name) 3051 / <i>E-2D Adv Hawkeye</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AV - Primary Hardware-Fatigue	C/CPFF	Northrop Grumman Corporation (NGC) : Melbourne, FL	75.596	9.031	Nov 2021	12.972	Nov 2022	9.685	Nov 2023	-		9.685	75.652	182.936	182.936
AV - Primary Hardware-Aerial Refueling	SS/CPIF	Northrop Grumman Corporation (NGC) : Melbourne, FL	294.527	2.328	Feb 2022	6.623	Feb 2023	6.650	Feb 2024	-		6.650	33.143	343.271	344.134
MS - Primary Hardware Dev - Theater TCID	C/CPIF	Navy Syst Mgt Activity : Arlington, VA	11.219	12.141	Dec 2021	28.371	Dec 2022	30.693	Dec 2023	-		30.693	141.847	224.271	230.535
MS - Primary Software Dev - Theater TCID	C/CPIF	Navy Syst Mgt Activity : Arlington, VA	9.610	11.867	Dec 2021	25.785	Dec 2022	19.551	Dec 2023	-		19.551	127.743	194.556	214.064
MS - Primary Hardware Dev - HECTR	Various	Northrop Grumm : Melbourne, FL	26.665	22.161	Dec 2021	51.994	Dec 2022	82.605	Dec 2023	-		82.605	280.134	463.559	460.169
MS - Primary Software Dev - NIFC	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	8.175	15.893	Dec 2021	27.313	Dec 2022	19.166	Dec 2023	-		19.166	84.006	154.553	140.125
MS - Primary Software Dev - SDP	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	3.532	4.908	Dec 2021	6.682	Dec 2022	2.091	Dec 2023	-		2.091	0.000	17.213	17.213
Sensors- Primary Hardware Dev - ESM	C/CPFF	Lockheed Martin : New York, NY	57.556	2.365	Dec 2021	0.000	Dec 2022	0.000		-		0.000	0.000	59.921	59.921
Sensors - Primary Software Development - ESM	C/CPFF	Lockheed Martin : New York, NY	29.189	2.189	Dec 2021	2.000	Dec 2022	0.000		-		0.000	0.000	33.378	33.378
Sensors - Primary Software -CEA	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	0.000	23.841	Dec 2021	14.040	Dec 2022	0.000		-		0.000	0.000	37.881	41.884
ITT - Primary Software Dev - Cyber	C/CPIF	Navy Syst Mgt Activity : Arlington, VA	0.527	4.498	Dec 2021	7.309	Dec 2022	7.596	Dec 2023	-		7.596	6.796	26.726	31.730
ITT - Training Development	SS/FFP	Rockwell Collins : Cedar Rapids, IA	40.532	13.287	Dec 2021	14.283	Dec 2022	13.393	Dec 2023	-		13.393	121.403	202.898	204.947
ITT - Training Development	SS/FFP	Lockheed Martin : New York, NY	0.000	0.000		3.000	Dec 2022	2.800	Dec 2023	-		2.800	18.003	23.803	23.803

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604234N / <i>Advanced Hawkeye</i>	<b>Project (Number/Name)</b> 3051 / <i>E-2D Adv Hawkeye</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ITT - Training Development	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	0.000	0.000		13.012	Dec 2022	7.668	Dec 2023	-		7.668	40.466	61.146	62.841
ITT - Test Assets Upgrades	Various	Various : Various	28.616	23.669	Dec 2021	35.436	Dec 2022	25.666	Dec 2023	-		25.666	75.697	189.084	-
Primary Software Dev - Various	Various	Navy Syst Mgt Activity : Arlington, VA	167.541	12.164	Dec 2021	27.824	Dec 2022	19.519	Dec 2023	-		19.519	521.909	748.957	577.364
System Engineering	Various	Various : Various	13.905	14.354	Dec 2021	19.009	Dec 2022	18.362	Dec 2023	-		18.362	131.219	196.849	193.653
Prior Year Prod Dev costs no longer funded in FYDP	Various	Various : Various	3,784.891	0.000		0.000		0.000		-		0.000	0.000	3,784.891	-
Equipment	WR	NSMA : Arlington, VA	0.000	0.840	Aug 2022	0.000		0.000		-		0.000	0.000	0.840	-
<b>Subtotal</b>			4,552.081	175.536		295.653		265.445		-		265.445	1,658.018	6,946.733	N/A

**Remarks**

Product Development increase is due to ITT Test Asset Upgrade cost, previously reported under Test & Evaluation.

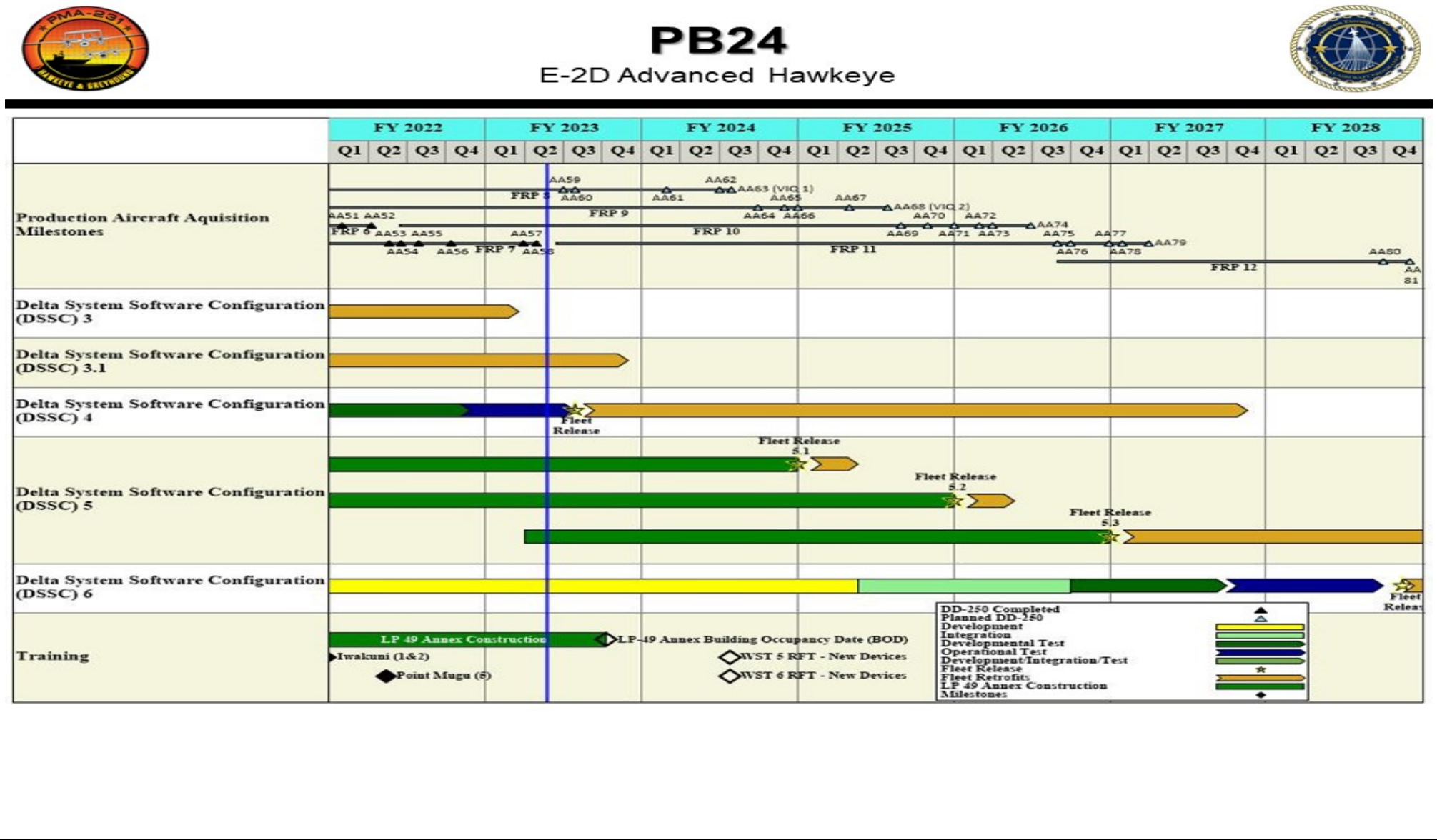
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MS -Software Development-SN	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	90.592	21.427	Dec 2021	26.203	Dec 2022	18.522	Dec 2023	-		18.522	3.517	160.261	161.553
MS - Software Development-Data Fusion	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	90.426	9.288	Dec 2021	9.784	Dec 2022	9.200	Dec 2023	-		9.200	4.048	122.746	122.746
Government Engineering Support	WR	Naval Air Warfare Center Aircraft Division (NAWCAD : Pax River, MD	193.175	21.229	Dec 2021	23.594	Dec 2022	21.220	Dec 2023	-		21.220	105.009	364.227	-
Government Engineering Support	Various	Various : Various	23.137	6.585	Dec 2021	10.165	Dec 2022	5.661	Dec 2023	-		5.661	25.507	71.055	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>				Project (Number/Name) 3051 / <i>E-2D Adv Hawkeye</i>					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	Various	Various : Various	25.032	12.721	Dec 2021	10.511	Dec 2022	13.950	Dec 2023	-		13.950	64.967	127.181	-
Contractor Engineering Support ETS	C/CPFF	Precise : Lexington Park, MD	7.157	1.471	Dec 2021	1.728	Dec 2022	1.585	Dec 2023	-		1.585	8.070	20.011	-
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	218.980	0.000		0.000		0.000		-		0.000	0.000	218.980	-
Subtotal			648.499	72.721		81.985		70.138		-		70.138	211.118	1,084.461	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	384.344	63.118	Nov 2021	69.855	Nov 2022	44.450	Nov 2023	-		44.450	280.281	842.048	-
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : Pt.Mugu, CA	0.000	0.000		9.267	Nov 2022	8.073	Nov 2023	-		8.073	57.145	74.485	-
Developmental Test & Evaluation (DT&E)	Various	Various : Various	76.013	5.760	Nov 2021	3.908	Nov 2022	5.918	Nov 2023	-		5.918	19.177	110.776	-
Operational Test & Evaluation (OT&E)	Various	Various : Various	23.812	1.585	Nov 2021	6.013	Nov 2022	5.245	Nov 2023	-		5.245	42.538	79.193	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	101.568	0.000		0.000		0.000		-		0.000	0.000	101.568	-
Subtotal			585.737	70.463		89.043		63.686		-		63.686	399.141	1,208.070	N/A
Remarks															
-Test and Evaluation decrease is due to Test Assets Upgrades being reported under Product Development.															
-The decrease is also due to annualized T&E Gray Flag test events being reported under Management Services.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye				Project (Number/Name) 3051 / E-2D Adv Hawkeye					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	Various : Various	4.536	0.455	Oct 2021	0.350	Oct 2022	0.350	Oct 2023	-		0.350	2.110	7.801	-
Test Subject Matter Expect Support/Travel	Various	Various : Various	0.000	0.000		0.250	Oct 2022	0.300	Oct 2023	-		0.300	1.550	2.100	-
Contractor Engineering Support ETS	WR	NSMA : Arlington, VA	0.000	0.500	May 2022	0.000		0.000		-		0.000	0.000	0.500	-
Travel	WR	NSMA : Various	0.000	0.050	Mar 2022	0.000		0.000		-		0.000	0.000	0.050	-
Subtotal			4.536	1.005		0.600		0.650		-		0.650	3.660	10.451	N/A
Remarks															
Management Services increase is due to annualized T&E Gray Flag test events cost, previously reported under Test and Evaluation.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			5,790.853	319.725		467.281		399.919		-		399.919	2,271.937	9,249.715	N/A
Remarks															





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PE 0604234N: *Advanced Hawkeye*  
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Proj 3051.S41	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Classified Support - Equipment																												
Classified Support - Engineering																												

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604234N / *Advanced Hawkeye*

Project (Number/Name)

3051 / *E-2D Adv Hawkeye*

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>E-2D Adv Hawkeye Delta Systems/Software Configuration (DSSC) Builds</i></b>				
Development & Design: DSSC-6 Hardware & Software Development	1	2022	2	2025
Development & Design: DSSC-6 Systems Integration	2	2025	3	2026
Test & Evaluation: Developmental Test & Evaluation: DSSC-4 Capability Dev & Testing	1	2022	4	2022
Test & Evaluation: Developmental Test & Evaluation: DSSC-5 Capability Dev & Testing	1	2022	4	2026
Test & Evaluation: Developmental Test & Evaluation: DSSC-6 Capability Dev & Testing	3	2026	3	2027
Test & Evaluation: Operational Test & Evaluation: DSSC-4 Operational Test	3	2022	1	2023
Test & Evaluation: Operational Test & Evaluation: DSSC-4 Fleet Release	3	2023	3	2023
Test & Evaluation: Operational Test & Evaluation: DSSC-5.1 Fleet Release	4	2024	4	2024
Test & Evaluation: Operational Test & Evaluation: DSSC-5.2 Fleet Release	4	2025	4	2025
Test & Evaluation: Operational Test & Evaluation: DSSC-5.3 Fleet Release	4	2026	4	2026
Test & Evaluation: Operational Test & Evaluation: DSSC-6 Operational Test	4	2027	3	2028
Test & Evaluation: Operational Test & Evaluation: DSSC-6 Fleet Release	4	2028	4	2028
Test & Evaluation: Contract Awards: Production Milestones - FRP Lot X CA	2	2022	2	2022
Test & Evaluation: Contract Awards: Production Milestones - FRP Lot XI CA	2	2023	2	2023
Test & Evaluation: Contract Awards: Production Milestones - FRP Lot XII CA	4	2023	4	2023
Deliveries: Production Deliveries - FRP VI (2 A/C)	1	2022	1	2022
Deliveries: Production Deliveries - FRP VII (2 A/C)	2	2022	2	2022
Deliveries: Production Deliveries - FRP VII - (2 A/C)	3	2022	3	2022
Deliveries: Production Deliveries - FRP VII (1 A/C)	1	2023	1	2023
Deliveries: Production Deliveries - FRP VII - (1 A/C)	2	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye		Project (Number/Name) 3051 / E-2D Adv Hawkeye	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Deliveries: Production Deliveries - FRP VIII - (1 A/C)		2	2023	2	2023
Deliveries: Production Deliveries - FRP VIII (1 A/C)		3	2023	3	2023
Deliveries: Production Deliveries - FRP VIII - (1A/C)		1	2024	1	2024
Deliveries: Production Deliveries - FRP VIII (1 A / C )		2	2024	2	2024
Deliveries: Production Deliveries - FRP VIII (1 A /C)		3	2024	3	2024
Deliveries: Production Deliveries - FRP IX (1 A/C)		3	2024	3	2024
Deliveries: Production Deliveries - FRP IX - (2 A/C)		4	2024	4	2024
Deliveries: Production Deliveries - FRP IX (1 A/C)		2	2025	2	2025
Deliveries: Production Deliveries - FRP IX(1 A/C)		3	2025	3	2025
Deliveries: Production Deliveries - FRP X (1 A/C)		3	2025	3	2025
Deliveries: Production Deliveries - FRP X - (2 A/C)		4	2025	4	2025
Deliveries: Production Deliveries - FRP X (2 A/C)		1	2026	1	2026
Deliveries: Production Deliveries - FRP X - (1 A/C)		2	2026	2	2026
Deliveries: Production Deliveries - FRP XI (2 A/C)		3	2026	3	2026
Deliveries: Production Deliveries - FRP XI (1 - A/C)		4	2026	4	2026
Deliveries: Production Deliveries - FRP XI (2 A/C)		1	2027	1	2027
Deliveries: Production Deliveries - FRP XII (1 - A/C)		3	2028	3	2028
Deliveries: Production Deliveries - FRP XII (1 A/C)		4	2028	4	2028
Classified Support - Equipment: Classified Support - Equipment		4	2022	4	2023
Classified Support - Engineering: Classified Support - Engineering Technical Support		3	2022	3	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>				Project (Number/Name) 9999 / <i>Congressional Adds</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	64.219	19.307	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	103.526
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**  
Congressional Add. Program Increase for E-2D Advanced Hawkeye (AHE) radar development.

**A. Mission Description and Budget Item Justification**

Congressional Add. The E-2D Advanced Hawkeye and associated APY-9 radar meet the requirements specified in the Capabilities Development Document (CDD), including detection ranges, detection velocities, and tracking accuracies, verified through extensive developmental and operational flight testing and deployed operations. Program increase for E-2D advanced radar development to stay ahead of the evolving threat.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> Radar modernization and testing	19.307	20.000
<b><i>FY 2022 Accomplishments:</i></b> N/A		
<b><i>FY 2023 Plans:</i></b> N/A		
<b>Congressional Adds Subtotals</b>	19.307	20.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Program increase to continue improving radar capability of the E-2D Hawkeye to stay ahead of the evolving threat. Planned investments in the E-2D, APY-9 radar and new antenna technology will continue to pace emerging threats.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	C/FFP	Northrop Grumman Corporation (NGC) : Melbourne, FL	23.240	1.300	Dec 2022	2.000	Nov 2023	0.000		-		0.000	0.000	26.540	25.240
System Engineering	Various	Various : Various	13.376	4.257	Nov 2022	2.393	May 2024	0.000		-		0.000	0.000	20.026	16.276
System Engineering	C/CPFF	Navy Syst Mgt Activity : Arlington VA	5.517	0.000		0.000		0.000		-		0.000	0.000	5.517	6.017
System Engineering	C/CPFF	North Star Scientific Corp : Kapolei, HI	14.437	13.050	Jun 2023	11.307	Aug 2024	0.000		-		0.000	0.000	38.794	24.437
System Engineering	C/CPFF	Massachusetts Institute of Tech Lincoln Lab : Lexington, MA	0.000	0.000		4.000	Sep 2023	0.000		-		0.000	0.000	4.000	-
Subtotal			56.570	18.607		19.700		0.000		-		0.000	0.000	94.877	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering	WR	SPAWAR : San Diego	0.116	0.000		0.000		0.000		-		0.000	0.000	0.116	-
Government Engineering	WR	NAWCAD : Pax River	1.898	0.500	May 2022	0.300	Apr 2023	0.000		-		0.000	0.000	2.698	-
Software Development	C/CPFF	Navy Syst Mgt Activity : Arlington VA	4.428	0.000		0.000		0.000		-		0.000	0.000	4.428	8.428
Subtotal			6.442	0.500		0.300		0.000		-		0.000	0.000	7.242	N/A

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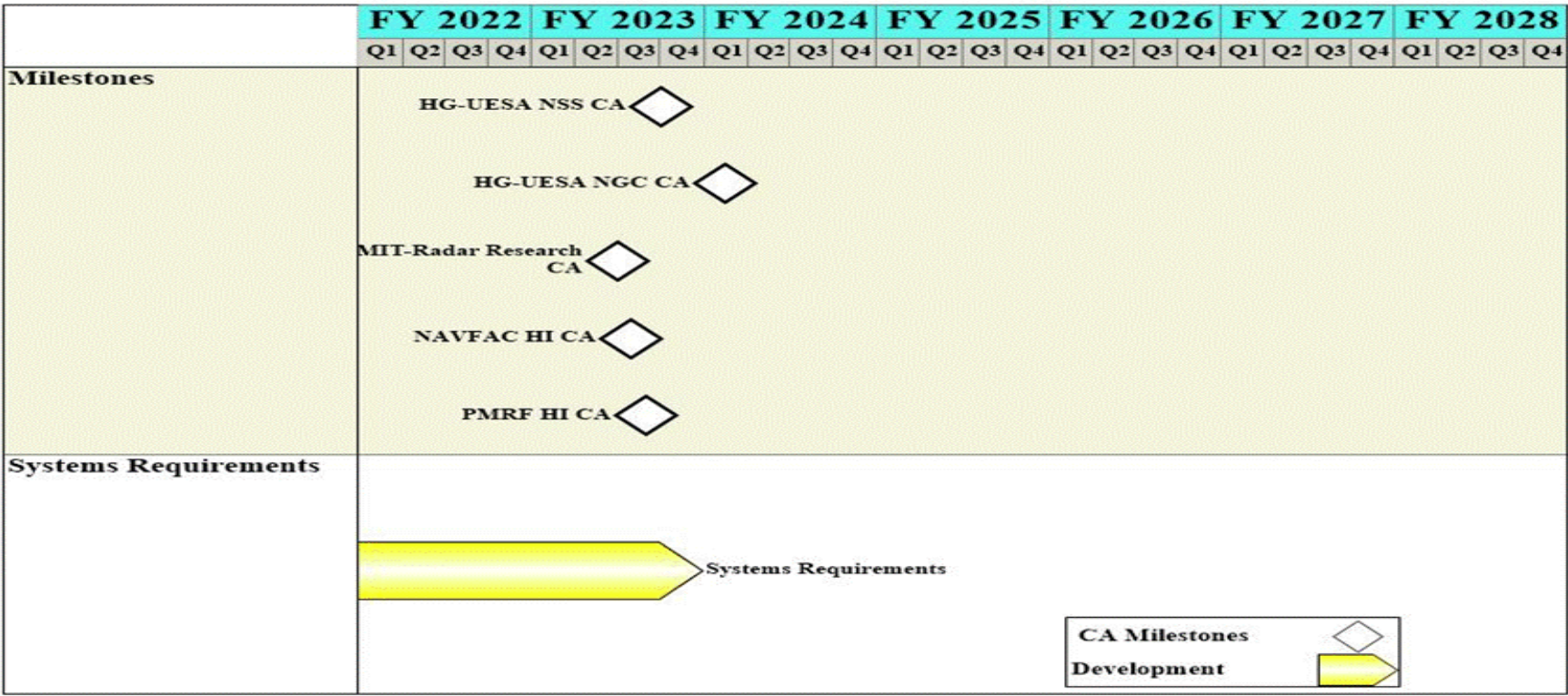
Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
1319 / 5						PE 0604234N / Advanced Hawkeye				9999 / Congressional Adds					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	1.207	0.200	May 2022	0.000	Apr 2023	0.000		-		0.000	0.000	1.407	-
Subtotal			1.207	0.200		0.000		0.000		-		0.000	0.000	1.407	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			64.219	19.307		20.000		0.000		-		0.000	0.000	103.526	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604234N / Advanced Hawkeye		Project (Number/Name) 9999 / Congressional Add	



**PB24**  
Advanced Radar – Congressional Add



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604234N / <i>Advanced Hawkeye</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Advanced Radar Congressional Add</i></b>				
Systems Development: Systems Requirements	1	2023	4	2024
Systems Development: Contract Awards: Production Milestones - MIT Radar Research	3	2023	3	2023
Systems Development: Contract Awards: Production Milestones - HGUESA 1	4	2023	4	2023
Systems Development: Contract Awards: Production Milestones - HGUESA 2	4	2023	4	2023
Systems Development: Contract Awards: Production Milestones - Pacific Missile Range Facility (PMRF) HI	3	2023	3	2023
Systems Development: Contract Awards: Production Milestones - Naval Facilities Engineering Command (NAVFAC) HI	3	2023	3	2023



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy Date: March 2023

Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	168.571	49.316	43.759	29.766	-	29.766	33.764	40.849	30.818	32.087	Continuing	Continuing
3359: H-1 Improvements	168.571	49.316	43.759	29.766	-	29.766	33.764	40.849	30.818	32.087	Continuing	Continuing

## A. Mission Description and Budget Item Justification

The mission of the AH-1 attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance, survivability enhancements, and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1 utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft include 37 AH-1Ws converted to AH-1Zs, build 152 new AH-1Zs, remanufacture ten (10) H-1N helicopters and build 150 new UH-1Y models. AH-1Z and UH-1Y models include a 4-bladed, composite rotor system with semi-automatic blade fold, performance-matched transmissions, T700 Engine Digital Electronic Control Units, 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, and common, fully integrated cockpits and avionics systems. These upgrades add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They provide considerable growth potential for future weapon systems and avionics to significantly increase mission effectiveness and survivability. The cockpits also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, air-to-ground missile and air-launched intercept missile weapon systems management in nearly identical crew stations, which significantly reduces training requirements. These upgrades maximize commonality between the two aircraft and provide needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

This budget is required for follow-on improvements to H-1 aircraft via integration of sensors and weapons, avionics, and air vehicle components that will address deficiencies, systems safety, obsolescence, readiness, reliability, supportability, and relevance in the battlespace. Improvements will include all associated System Configuration Set (SCS) updates as well as integration and testing related to the aircraft platforms.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	50.158	43.759	30.829	-	30.829
Current President's Budget	49.316	43.759	29.766	-	29.766
Total Adjustments	-0.842	0.000	-1.063	-	-1.063
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.842	0.000			
• Program Adjustments	0.000	0.000	-1.217	-	-1.217

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604245M / H-1 UPGRADES			
• Rate/Misc Adjustments		0.000	0.000	0.154	- 0.154
<b>Change Summary Explanation</b>					
Cost: FY 2024 funding request was adjusted since the previous President's Budget submission for the following: reduced by \$1.217 million due to USMC reprioritization; and increased by \$0.154 million to account for working capital rate adjustments.					
Technical: None					
Schedule: None					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES				Project (Number/Name) 3359 / H-1 Improvements			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3359: H-1 Improvements	168.571	49.316	43.759	29.766	-	29.766	33.764	40.849	30.818	32.087	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The objective of H-1 Improvements is to provide follow-on Research, Development, Test and Evaluation efforts in support of all H-1 aircraft.

Air Vehicle and Engine improvements include Analysis of structural data to formulate Damage Limits and Tolerances for structural components in order to reduce life cycle costs and maintenance workload; development and test of structural components. These improvements include tail boom, fuselage, airframe and drive system components, minimizing excessive and premature wear, increased reliability, decreased component fatigue and improve existing design deficiencies. Air Vehicle will develop solutions to support compartments containing avionics equipment; development and testing of aircrew and flight safety systems; develop an auxiliary fuel cell capability and Remote Stores Control unit (RSCU) Software development. RSCU efforts will include software development, testing, cybersecurity, and acquisition of test assets. All air vehicle and engine improvements include related Software Configuration Set (SCS) development updates including software, test assets, cybersecurity, and testing.

Avionics improvements target digital inter-operability, integrated avionics, safety and survivability, and situational awareness for both the pilot and aircrew safety. This includes Degraded Visual Environment (DVE), cockpit displays, precision and Global Positioning System (GPS) non-precision landing capability, collision avoidance, improved Embedded Global Positioning System (EGI), Inertial Navigation System (INS), Health and Monitoring System Upgrade (HMU), and mission computer. H-1 capability improvements include improved digital operations and transfer of data, digital interoperability, digital video recording, video and data networking, and information integration with aviation combat elements and Marine Air Ground Task Force elements. Mandated capability efforts include - Communications and COMSEC modernization to include Tactical Secure Voice/Second generation Anti-Jam Tactical Ultra-High frequency Radio for NATO (TSV/SATURN), Navigation and Surveillance system/Air Traffic Management (CNS/ ATM), Required Navigation Performance/ Area Navigation (RNP/RNAV), Automatic Dependent Surveillance - Broadcast (ADS-B), Crash Survivable Flight Incident Recorder and information technology/protection of the platform. Mobile User Objective System (MUOS) allows the H-1 to retain satellite communication capabilities. Digital Interoperability (DI), the expansion of DI to include integration of ANW-2 (Advanced Network Wideband Waveform), advanced Flite Scene mapping and mission planning updates shortens the kill chain and improves information and intelligence sharing on the battlefield. DI incorporates a family of systems that includes ANW-2, ADTS (Advanced Data Transfer System), FMV (Full Motion Video), RFID (Radio Frequency Identification) and TACDS (Tactical Cross Domain Solution). All avionics improvements include related SCS development updates including software, test assets, cybersecurity, and testing.

Sensors, Weapons, Aircraft Survivability Equipment (ASE), and Helmet Mounted Display System improvements include manufacturing process improvements, hardware and software redesign to improve reliability, improve production methodologies, implement program security initiatives and increase the collective capability to address emerging battlefield threats. These improvements address reliability and obsolescence. The technical interfaces between the aircraft sensor, helmet, and weapons systems require extensive software and hardware upgrades to translate data into sensor fusion based solutions that provide both battlefield and situational awareness to the H-1 platform. The AN/AAQ-30 Target Sight System (TSS) will implement several obsolescence upgrade efforts with improvements to the Cameras as well as adding software driven capabilities such as increased field-of-views and auto-focus. The Optimized TopOwl (OTO) reliability upgrades will increase reliability and readiness for components that are currently driving high repair costs. Radar and missile warning improvements, including APR-39D(V)2 and the Distributed Aperture

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES	Project (Number/Name) 3359 / H-1 Improvements				
Infrared Countermeasures (DAIRCM), require extensive integration and testing. Funds required for development, test, and integration efforts for Joint Air-to-Ground Missile (JAGM), AGM-114 Hellfire, Advanced Precision Kill Weapons (APKWS), M299 Launcher improvements, Digital Rocket Launcher (DRL), AIM-9X, AN/ALQ-231 (V) Intrepid Tiger II Electronic Warfare Pod and loitering munitions. Improving and integrating weapon systems will align with these upgrades to improve the overall accuracy, lethality, and survivability of the H-1 platform. All weapon and sensor improvements include related SCS development updates including software, test assets, cybersecurity, and testing.							
These improvements will provide considerable growth potential for future weapon systems, air vehicle improvements, software improvements, and avionics upgrades, which will significantly increase mission effectiveness and survivability, while potentially reducing life cycle costs. The efforts will also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, precision guided munitions, and air-launched intercept missile weapon systems management in nearly identical crew stations, which significantly reduces training requirements. These upgrades maximize commonality between all H-1 Type/Model/Series aircraft and provide needed improvements in crew and passenger reliability, survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Weapons and Sensors Testing and Integration			12.795	6.916	5.540	0.000	5.540
Articles:			-	-	-	-	-
FY 2023 Plans:							
Continue prototype developmental testing of TSS Obsolescence Upgrade initiatives to include software compatibility, replacement camera functionality and performance improvements. Continue Aircraft Survivability Equipment (ASE) test and evaluation. Conduct testing and evaluation of Distributed Aperture Infrared Countermeasures (DAIRCM). Weapons and Sensors improvements include test asset components to support software and cybersecurity testing efforts.							
FY 2024 Base Plans:							
Complete prototype developmental testing of TSS and continue OTO design Obsolescence Upgrade initiatives to include software compatibility, functionality of replacement cameras and performance improvements. Continue Aircraft Survivability Equipment (ASE) development and test and evaluation. Continue development and testing and evaluation of Distributed Aperture Infrared Countermeasures (DAIRCM). Weapons and Sensors improvements include test asset components to support software and cybersecurity testing efforts.							
FY 2024 OCO Plans:							
N/A							
FY 2023 to FY 2024 Increase/Decrease Statement:							

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES		Project (Number/Name) 3359 / H-1 Improvements		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Decrease in funding from FY 2023 to FY 2024 due to ramp down of weapons and sensors testing and integration.						
<div>Title: Air Vehicle and Engines Improvements</div> <div>Articles:</div> <div>FY 2023 Plans: Continue redesign and initiate test of structural components to minimize excessive and premature wear, increase reliability and fatigue life, increase aircraft load capabilities. Improve existing design deficiencies including Fuel Systems and aircrew safety and flight safety systems. Develop and test System Configuration Set (SCS) including software.</div> <div>FY 2024 Base Plans: Continue redesign and test of structural components to minimize excessive and premature wear, increase reliability and fatigue life, increase aircraft load capabilities. Improve existing design deficiencies including Fuel Systems and aircrew safety and flight safety systems. Develop and test System Configuration Set (SCS) including software. Air vehicle and engine improvements include test asset components to support software and cybersecurity testing efforts.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease in funding from FY2023 to FY2024 due to reduction in design and test efforts in support of UH-1Y/ AH-1Z structural improvement and reinforcement initiatives, component redesign efforts, and survivability upgrades.</div>		9.851 -	5.333 -	5.120 -	0.000 -	5.120 -
<div>Title: Avionics Improvements</div> <div>Articles:</div> <div>FY 2023 Plans: Continue with software integration, system integration laboratories, Development Testing (DT) activities associated with SCS and MBSE. Continue design, development and testing for Digital Interoperability (DI) improvements, to include Link 16 development, Advanced Network Waveform 2 (ANW2) UH-1Y Aft Cabin Display for situational awareness, portable tablet improvements for Marine Air-Ground Task, Advanced Data Transfer System (ADTS), and a switch and Cross Domain Solution (CDS) that support NSA security requirements for airborne networks. Develop communication solutions to enable Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN), Variable Message Format (VMF), and Tactical Secure Voice 2</div>		26.670 -	31.510 -	19.106 -	0.000 -	19.106 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES	Project (Number/Name) 3359 / H-1 Improvements	

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
(TSV2) Protocol for ARC-210 RT-1939A Radio. Complete development efforts on the Mission Computer (TRMC) firmware redesign. Avionics components / systems obsolescence mitigation efforts including, peculiar avionics support equipment, automatic test equipment and mission computer SCS improvements. Continue enhancement of digital map and data storage capabilities, digital video recording, display systems, digital systems upgrades. Initiate design and development on Terrain Awareness Warning System (TAWs).					
<b>FY 2024 Base Plans:</b> Continue with software integration, system integration laboratories, Development Testing (DT) activities associated with SCS and Model Based Systems Engineering (MBSE). Continue design, development and testing for Digital Interoperability (DI) improvements, to include Advanced Network Waveform 2 (ANW2) UH-1Y Aft Cabin Display for situational awareness, portable tablet improvements for Marine Air-Ground Task, Advanced Data Transfer System (ADTS), and a switch and Cross Domain Solution (CDS) that support NSA security requirements for airborne networks. Continue to develop and test communication solutions to enable Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN), Variable Message Format (VMF), and Tactical Secure Voice 2 (TSV2) Protocol for ARC-210 RT-1939A Radio. Avionics components / systems obsolescence mitigation efforts including, Health and Monitoring System Upgrade (HMu), peculiar avionics support equipment, automatic test equipment and mission computer SCS improvements. Continue enhancement of digital map and data storage capabilities, digital video recording, display systems, digital systems upgrades. Initiate design and development on Terrain Awareness Warning System (TAWs). Avionics improvements include test asset components to support software and cybersecurity testing efforts.					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease in funding from FY2023 to FY2024 due to ramp down of software development test and evaluation efforts.					
<b>Accomplishments/Planned Programs Subtotals</b>	49.316	43.759	29.766	0.000	29.766

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0178: UH-1Y/AH-1Z APN1	0.935	0.000	4.292	-	4.292	8.688	8.722	6.433	7.390	0.000	10,591.831
• APN/0532: H-1 Series	118.778	122.498	114.284	-	114.284	152.833	155.062	167.929	175.024	957.393	2,931.515

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES				Project (Number/Name) 3359 / H-1 Improvements			
C. Other Program Funding Summary (\$ in Millions)											
	<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u> <u>Total Cost</u>
<u>Remarks</u>											
D. Acquisition Strategy											
Follow-on H-1 Improvements will be developed using cost plus fixed fee type contracts.											

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604245M / H-1 UPGRADES	<b>Project (Number/Name)</b> 3359 / H-1 Improvements
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	BHTI : Amarillo, TX	19.225	3.865	Feb 2022	3.346	Feb 2023	1.701	Feb 2024	-		1.701	36.238	64.375	64.375
Primary Hardware Development	Various	Various : Various	2.044	0.000		0.350	Jan 2023	0.179	Jan 2024	-		0.179	0.000	2.573	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	5.650	0.797	Nov 2021	0.750	Nov 2022	0.381	Nov 2023	-		0.381	3.393	10.971	-
Systems Engineering	SS/CPFF	BHTI : Amarillo, TX	18.761	10.401	Apr 2022	4.197	Jan 2023	1.968	Jan 2024	-		1.968	26.486	61.813	61.813
Systems Engineering	Various	Various : Various	2.020	0.615	Mar 2022	0.360	Jan 2023	0.183	Jan 2024	-		0.183	0.000	3.178	-
<b>Subtotal</b>			47.700	15.678		9.003		4.412		-		4.412	66.117	142.910	N/A

**Remarks**

Decrease in Primary Hardware Development and System Engineering from FY2023 to FY2024 due to USMC reprioritization.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	SS/FP	Northrup Grumman : Woodland Hills, CA	44.393	13.019	Feb 2022	17.776	Feb 2023	12.334	Feb 2024	-		12.334	20.061	107.583	107.583
Software Development	WR	NAWCWD : China Lake, CA	6.708	0.524	Nov 2021	0.851	Nov 2022	0.433	Nov 2023	-		0.433	11.876	20.392	-
Software Development	WR	NAWCAD : Patuxent River, MD	3.717	0.518	Nov 2021	0.607	Nov 2022	0.309	Nov 2023	-		0.309	0.000	5.151	-
Software Development	Various	Various : Various	3.038	1.008	Mar 2022	0.350	Jan 2023	0.178	Jan 2024	-		0.178	0.000	4.574	-
<b>Subtotal</b>			57.856	15.069		19.584		13.254		-		13.254	31.937	137.700	N/A

**Remarks**

Funding provides for USMC top three priorities: Digital Interoperability (DI), survivability, and lethality. DI is a software-only development effort to the baseline DI system. This critical capability improvement is needed to keep pace with currently planned upgrades and operational requirements and will ensure H-1 has access to the same data link as other DOD and Joint partners on the modern battlespace.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES				Project (Number/Name) 3359 / H-1 Improvements					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	COMOPTEVFOR : Norfolk, VA	4.162	1.574	Jan 2022	0.780	Nov 2022	0.397	Nov 2023	-		0.397	6.898	13.811	-
Operational Test & Evaluation (OT&E)	Various	Various : Various	2.242	0.465	Feb 2022	0.370	Jan 2023	0.188	Jan 2024	-		0.188	0.000	3.265	-
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	43.389	12.025	Nov 2021	12.229	Nov 2022	10.450	Nov 2023	-		10.450	73.228	151.321	-
Developmental Test & Evaluation (DT&E)	Various	Various : Various	3.885	0.051	Mar 2022	0.323	Jan 2023	0.164	Jan 2024	-		0.164	0.000	4.423	-
Subtotal			53.678	14.115		13.702		11.199		-		11.199	80.126	172.820	N/A
Remarks															
Decrease in Test and Evaluation from FY2023 to FY2024 due to USMC reprioritization.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Various	2.555	0.758	Nov 2021	0.740	Nov 2022	0.376	Nov 2023	-		0.376	1.032	5.461	-
Program Management Support	Various	Various : Various	6.148	3.441	Nov 2021	0.680	Nov 2022	0.500	Nov 2023	-		0.500	3.177	13.946	-
Travel	WR	NAVAIR : Patuxent River, MD	0.634	0.255	Oct 2021	0.050	Oct 2022	0.025	Oct 2023	-		0.025	Continuing	Continuing	Continuing
Subtotal			9.337	4.454		1.470		0.901		-		0.901	Continuing	Continuing	N/A
Remarks															
Decrease in Management Services from FY2023 to FY2024 due to USMC reprioritization.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			168.571	49.316		43.759		29.766		-		29.766	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604245M / H-1 UPGRADES

Project (Number/Name)  
3359 / H-1 Improvements

H-1 Improvements	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Systems Development																												
Hardware/Software Development																												
Test & Evaluation																												
Development Test																												
Operational Test																												
Deliveries																												
Aircraft Deliveries																												

2024DON - 0604245M - 3359

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604245M / H-1 UPGRADES	Project (Number/Name) 3359 / H-1 Improvements

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>H-1 Improvements</i>				
Systems Development: Hardware/Software Development: Schedule Detail	1	2022	4	2028
Test & Evaluation: Development Test: H-1 Improvements DT	1	2022	4	2028
Test & Evaluation: Operational Test: H-1 Improvements OT	1	2022	4	2028
Deliveries: Aircraft Deliveries: Lot 16 FRP Z	1	2022	4	2022

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0604261N / <i>Acoustic Search Sensors</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	685.039	47.534	50.231	51.531	-	51.531	55.262	56.218	54.488	54.487	Continuing	Continuing
0480: <i>ASW Sensors &amp; Proc</i>	552.454	38.956	46.001	43.874	-	43.874	44.284	44.981	45.882	46.794	Continuing	Continuing
3224: <i>High Altitude ASW</i>	132.585	3.751	4.230	7.657	-	7.657	10.978	11.237	8.606	7.693	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	4.827	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.827

**A. Mission Description and Budget Item Justification**

U.S. Navy Air Anti-Submarine Warfare (ASW) mission is critical to achieve maritime supremacy against peer threats. RDT&E funds for engineering development and operational test and evaluation of acoustic search sensors/systems and complementary equipment for ASW aircraft.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production decision.

<b><u>B. Program Change Summary (\$ in Millions)</u></b>	<b><u>FY 2022</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024 Base</u></b>	<b><u>FY 2024 OCO</u></b>	<b><u>FY 2024 Total</u></b>
Previous President's Budget	49.057	50.231	49.322	-	49.322
Current President's Budget	47.534	50.231	51.531	-	51.531
Total Adjustments	-1.523	0.000	2.209	-	2.209
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.523	0.000			
• Program Adjustments	0.000	0.000	2.080	-	2.080
• Rate/Misc Adjustments	0.000	0.000	0.129	-	0.129

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 9999: *Congressional Adds*

Congressional Add: *Sonobuoy capabilities research*

Congressional Add Subtotals for Project: 9999

<b>FY 2022</b>	<b>FY 2023</b>
4.827	0.000
4.827	0.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604261N / <i>Acoustic Search Sensors</i>	
<b>Congressional Add Details (\$ in Millions, and Includes General Reductions)</b>		<b>FY 2022</b>	<b>FY 2023</b>
Congressional Add Totals for all Projects		4.827	0.000
<b><u>Change Summary Explanation</u></b> FY22: -\$1.523M SBIR adjustments FY24: +\$0.129M Rate adjustments FY24: +\$2.080M increase to fund Sonobuoy Acoustic Communications Development.  Technical: N/A  Schedule:  H0480 (MAC): Revised to capture naming convention change from Next Generation Multistatic Active Coherent (NGMAC) to UnderSea Advantage (USA). USA Acoustic Operational Flight Program (AOFP) SW development updated to reflect start in 1Q/26. Updated 2Q/24 USA contract award title to Subsystem Software Development contract award for better definition. Added AOFP contract award to 1Q/26. Extended MAC-E DT/OT to properly align with PMA-290's P-8A INC 3 DT period.  H0480 (APB): Revised to include refresher training prior to fleet training.  H3224: Updated to include FY22-FY28 key enhancements and sonobuoy enablers: the Automated Extended Life Sonobuoy (AELS), sonobuoy encryption, and P-8A Acoustic Communications (ACOMMS).			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>				Project (Number/Name) 0480 / <i>ASW Sensors &amp; Proc</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0480: <i>ASW Sensors &amp; Proc</i>	552.454	38.956	46.001	43.874	-	43.874	44.284	44.981	45.882	46.794	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Anti-Submarine Warfare (ASW) Sensors and Processing project provides tools and methods necessary to maintain maritime superiority by preventing near-peer threat submarines from completing their hostile missions or disrupting the U.S. Navy's ability to control sea lanes of communication. Project 0480 provides funding for Engineering & Manufacturing Development and follow-on Production and Deployment of new and/or improved passive and active air ASW family of systems that enable cuing, search, detection, localization, track, and attack of subsurface targets. Smaller and quieter threat submarines drive requirements for continued advancement in ASW sensor capabilities for both open-ocean and littoral environments in order to overcome challenges associated with reduced target acoustic signatures and increased background clutter caused by the water depth, high volume of shipping, and commercial radio frequency interference.

MAC-E: PE 0604261N funds the incorporation of the capability into the P-8A AOFP, integration of the AOFP into the P-8A Mission suite and associated training system and Post Flight Analysis (PFA) tool updates. The remainder of the integration into the P-8A platform is accomplished via PE 0605504N.

UnderSea Advantage (USA): USA is the next generation of multistatics. USA incorporates an incremental improvement upon the existing system and will be accomplished via three blocks. The first block will be funded in the following manner: Early development and technology maturation efforts are funded under PE 0603254N, and PE 0604261N funds the incorporation of the capability into the P-8A AOFP and integration of the AOFP into the P-8A Mission suite. 0604261N also funds the associated training system and Post Flight Analysis (PFA) tool updates. The remainder of the integration into the P-8A platform is accomplished via PE 0605504N.

Project 0480 also provides funding for the Advanced Product Build (APB) program which integrates Office of Naval Research (ONR) Future Naval Capabilities (FNCs), Small Business Innovation Research (SBIR), and University Affiliated Research Center (UARC) products and mature technologies into the processing baseline. Efforts incorporate clutter reduction techniques, automation, improved displays and controls, and improved communication links to enable reduced operator workload, increased target detection opportunities, and improved classification techniques. Sonobuoy test articles in FY22-FY28 support software and hardware integration flights tests, data collection, and analysis for the MAC program in order to develop updated fleet release software. APB also includes an Air ASW Engineering Measurement Program (AAEMP) that collects ASW operational performance data to identify areas where improvements can be incorporated across Air ASW platforms. Finally, project funding provides initial and interim training of new capabilities to test and fleet aircrew.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Multistatic Active Coherent (MAC)	34.300	37.229	37.496	0.000	37.496
<b>Articles:</b>	130	130	130	-	130
<b>FY 2023 Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>		Project (Number/Name) 0480 / <i>ASW Sensors &amp; Proc</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Conduct data gathering events, data collection, and analysis for MAC-E and UnderSea Advantage (USA). Execute MAC-E Developmental Testing concurrent with P-8A testing. Begin correction of deficiencies in MAC-E System-of-Systems and AOFP Software discovered during integration and testing for P-8A AOFP software. Fund software improvements for incorporation into the P-8A Training systems associated with MAC-E capabilities.  <b>FY 2024 Base Plans:</b> Conduct data gathering events, data collection, and analysis for MAC-E and USA. Start software engineering and development for USA System-of-Systems capabilities. Execute MAC-E Development Testing and begin testing concurrent with P-8A DT/OT. Complete correction of deficiencies (COD) in MAC-E System-of-Systems and AOFP Software discovered during integration and testing for P-8A AOFP software for initial fleet release. Fund software improvements for incorporation into the P-8A Training systems associated with MAC-E capabilities in the Weapons Tactics Trainer (WTT) and Mission Systems Desktop Trainer (MSDT).  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY23 to FY24 increase is due to costs associated with MAC-E integration into P-8A training systems.						
<b>Title:</b> APB System Qualification Test/Fleet Release. Rapid Capability Insertion (RCI)/Fleet Release for P-8A  <b>Articles:</b>  <b>FY 2023 Plans:</b> System development and AAEMP for P-8A. Develop and conduct MAC/MAC-E CONOPS, tactics, techniques, and procedure training for P-8A test and operational squadrons.  <b>FY 2024 Base Plans:</b> System development and AAEMP for P-8A. Complete MAC refresher trainer to operational squadrons and continue MAC-E CONOPS, tactics, techniques, and procedure training for P-8A test.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY23 to FY24 decrease to align with P-8A platform schedule and MAC FIT opportunities.		4.656 -	8.772 -	6.378 -	0.000 -	6.378 -
Accomplishments/Planned Programs Subtotals		38.956	46.001	43.874	0.000	43.874



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>				Project (Number/Name) 0480 / <i>ASW Sensors &amp; Proc</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4048: <i>Sonobuoys</i> - <i>AN/SSQ-125 (Multistatic Coherent Source)</i>	32.221	20.949	88.997	-	88.997	97.873	91.205	84.067	89.281	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The Multistatic Active Coherent (MAC) ASW system and associated sonobuoys are fully integrated on the P-8A ASW platform. MAC Enhancements (MAC-E) is a development program associated with P-8A Increment 3 that will significantly increase the wide area search capability through Engineering Change Proposals (ECPs) to the sonobuoys, aircraft software modifications to reduce clutter and improve processing, and Operator Machine Interface (OMI) improvements to reduce operator workload. UnderSea Advantage begins to address threat submarine advancements through the introduction of a series of sensor system capability enhancements. S&T and early R&D ASW improvement programs are monitored through the APB process for maturity and then integrated into the AOFD for periodic Fleet software releases.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>				Project (Number/Name) 0480 / <i>ASW Sensors &amp; Proc</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development	SS/CPIF	ERAPSCO : FT. WAYNE IN	26.847	0.000		0.000		0.000		-		0.000	17.500	44.347	44.347
Prior year Prod Dev no longer funded in the FYDP	Various	VARIOUS : VARIOUS	19.905	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development	C/CPIF	Boeing : Huntington Beach, CA	36.981	11.336	Dec 2021	13.158	Dec 2022	12.450	Dec 2023	-		12.450	0.000	73.925	73.925
Software Development	WR	NAWCAD : PATUXENT RIVER, MD	53.722	5.280	Dec 2021	6.399	Dec 2022	5.821	Dec 2023	-		5.821	Continuing	Continuing	Continuing
Software Development	SS/CPIF	LOCKHEED MARTIN : MANASSAS VA	19.990	3.520	Dec 2021	3.515	Dec 2022	0.000		-		0.000	0.000	27.025	27.025
Software Development	Various	VARIOUS : VARIOUS	51.996	8.734	Dec 2021	9.449	Dec 2022	12.857	Dec 2023	-		12.857	Continuing	Continuing	Continuing
Subtotal			209.441	28.870		32.521		31.128		-		31.128	Continuing	Continuing	N/A
Remarks															
Lockheed Martin software development efforts are complete and we are migrating efforts into the various software development line.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analysis	Various	VARIOUS : VARIOUS	28.291	0.319	Dec 2021	2.762	Dec 2022	2.524	Dec 2023	-		2.524	Continuing	Continuing	Continuing
Technical Data	WR	NAWCAD : PATUXENT RIVER, MD	17.843	0.352	Dec 2021	0.446	Dec 2022	0.378	Dec 2023	-		0.378	Continuing	Continuing	Continuing
Training	WR	NAWCAD : PATUXENT RIVER, MD	14.258	2.404	Dec 2021	3.071	Dec 2022	2.970	Dec 2023	-		2.970	Continuing	Continuing	Continuing
Subtotal			60.392	3.075		6.279		5.872		-		5.872	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>				Project (Number/Name) 0480 / <i>ASW Sensors &amp; Proc</i>					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	VARIOUS : VARIOUS	46.121	3.520	Dec 2021	3.568	Dec 2022	3.520	Dec 2023	-		3.520	Continuing	Continuing	Continuing
Subtotal			46.121	3.520		3.568		3.520		-		3.520	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Eng Spt	Various	VARIOUS : VARIOUS	50.101	1.012	Dec 2021	0.992	Dec 2022	0.982	Dec 2023	-		0.982	Continuing	Continuing	Continuing
Contractor Eng Spt	C/CPFF	NAVMAR APPLIED SCIENCES CORP : WARMINSTER, PA	11.966	1.032	Dec 2021	0.950	Dec 2022	0.952	Dec 2023	-		0.952	2.810	17.710	17.710
Government Eng Spt	WR	NAWCAD : PATUXENT RIVER, MD	99.892	0.303	Dec 2021	0.353	Dec 2022	0.310	Dec 2023	-		0.310	Continuing	Continuing	Continuing
Eng & Tech Spt Srvc (NON-FFRDC)	Various	VARIOUS : VARIOUS	63.655	1.144	Dec 2021	1.338	Dec 2022	1.110	Dec 2023	-		1.110	Continuing	Continuing	Continuing
Mgt & Prof SptT Srvc (FFRDC)	Various	VARIOUS : VARIOUS	10.018	0.000		0.000		0.000		-		0.000	0.000	10.018	10.018
Prior Years Mgmt Svcs no longer funded in the FYDP	Various	VARIOUS : VARIOUS	0.868	0.000		0.000		0.000		-		0.000	0.000	0.868	0.868
Subtotal			236.500	3.491		3.633		3.354		-		3.354	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			552.454	38.956		46.001		43.874		-		43.874	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604261N / Acoustic Search Sensors

Project (Number/Name)

0480 / ASW Sensors & Proc



## PMA-264 ASW Sensors & Processing (0480 MAC)

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

### Acquisition Milestones

Reviews and Milestones

MAC-E IOC



### System Development

Capability Development and Integration

MAC-E Data Collection and Analysis

Undersea Advantage Data Collection & Analysis

MAC-E System of Systems SW Development and COD

Undersea Advantage System of Systems SW Development

MAC-E AOFP SW Development and COD

Undersea Advantage AOFP SW Development

Training Capability Development

MAC-E and Undersea Advantage Data Gathering Events

### Test and Evaluation

Technical Evaluation

Developmental and Operational Test

### Production Milestones

Contract Award

Subsystem Software Development Contract Award



AOFP Contract Award



#### Note:

- Training Capability Development line added to schedule in order to capture MAC-E related trainer improvements. Schedule better depicts efforts described on the R3.
- Revised to capture naming convention change from Next Generation Multistatic Active Coherent (NGMAC) to UnderSea Advantage (USA)
- MAC-E IOC 1Q/26 to align with PE 0605504N

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>		Project (Number/Name) 0480 / <i>ASW Sensors &amp; Proc</i>	



PMA-264 ASW Sensors & Processing (0480 APB)

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Acquisition  
Milestones

System  
Development

SW Development

System Development/ Engineering Measurement

Fleet  
Introduction  
Training (FIT)

MAC refresher training

MAC-E FITs

Note: Schedule updated to reflect the new strategy for releasing software in a periodic manner into the platform baseline as opportunity allows.

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604261N / Acoustic Search Sensors

Project (Number/Name)

0480 / ASW Sensors &amp; Proc

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj: 0480 ASW Sensors &amp; Processors - Multistatic Active Coherent</b>				
Acquistion Milestones: Reviews and Milestones: Initial Operational Capability	1	2026	1	2026
System Development: Capability Development and Integration: MAC-E Data Collection & Analysis	1	2022	3	2022
System Development: UnderSea Advantage Data Collection & Analysis	4	2022	4	2028
System Development: MAC-E System of Systems Software Development and COD	1	2022	4	2024
System Development: UnderSea Advantage System of Systems Software Development	1	2024	4	2028
System Development: MAC-E AOFP S/W Development and COD	1	2022	4	2024
System Development: UnderSea Advantage AOFP S/W Development	1	2026	4	2028
Test & Evaluation: Technical Evaluation: Training Capability Development	1	2022	4	2028
Test & Evaluation: Technical Evaluation: MAC-E & UnderSea Advantage Data Gathering Events	1	2022	4	2028
Test & Evaluation: Developmental and Operational Test: MAC-E Operational Test	3	2022	1	2026
Production Milestones: Contract Awards: Subsystem Software Development Award	2	2024	2	2024
Production Milestones: Contract Awards: AOFP Contract Award	1	2026	1	2026
<b>Proj: 0480 ASW Sensors &amp; Processors - Advanced Product Builds (APB)</b>				
System Development: Software Development: System Development/Engineering Measurement	1	2022	4	2028
Fleet Introduction Training: MAC refresher training	1	2022	4	2024
Fleet Introduction Training: MAC-E FITs	1	2025	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>				Project (Number/Name) 3224 / <i>High Altitude ASW</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3224: <i>High Altitude ASW</i>	132.585	3.751	4.230	7.657	-	7.657	10.978	11.237	8.606	7.693	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

High Altitude ASW project provides Key Enablers/Sonobuoy Enhancements (KESE) that increase P-8A operational flexibility and effectiveness throughout the kill chain. Funding addresses key enablers such as, uplink/downlink sonobuoy communications, AELS/over-the-horizon (OTH) communications, acoustic communications (ACOMMS) and sonobuoy enhancements that include: digitization, cyber protection and the integration into the AOFPP software.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Key Enablers and Sonobuoy Enhancements	3.751	4.230	7.657	0.000	7.657
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Advance sonobuoy communications improvements. Establish a North Atlantic Treaty Organization (NATO) digital telemetry standard across the sonobuoy portfolio. Continue sonobuoy encryption proof of concept. Demonstrate sonobuoy OTH communications. Conduct risk reduction efforts on the P-8A to subsurface submarine acoustic communications (ACOMMS) capability.					
<b>FY 2024 Base Plans:</b> Continue to advance sonobuoy communications improvements including NATO digital telemetry across the sonobuoy portfolio and the sonobuoy encryption proof of concept. Demonstrate sonobuoy OTH communications. Begin the development of the P-8A ACOMMS capability.					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY23 to FY24 increase is for Sonobuoy Acoustic Communications development to improve ASW coordination between air and subsurface platforms.					
<b>Accomplishments/Planned Programs Subtotals</b>	3.751	4.230	7.657	0.000	7.657

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/4048: <i>Sonobuoys - All Types</i>	296.871	303.520	311.177	-	311.177	296.267	304.427	289.022	306.543	Continuing	Continuing





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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604261N / Acoustic Search Sensors				Project (Number/Name) 3224 / High Altitude ASW					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development	C/CPFF	VARIOUS : VARIOUS	5.581	2.078	Nov 2021	1.451	Nov 2022	0.450	Nov 2023	-		0.450	2.600	12.160	14.662
Prior year Prod Dev no longer funded in the FYDP	Various	VARIOUS : VARIOUS	44.280	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Primary Hdw Development	C/CPFF	FLIGHTLINE : VICTOR NY	1.000	1.127	Nov 2021	1.267	Nov 2022	0.750	Nov 2023	-		0.750	0.000	4.144	-
INC 3 A/C Software Integration	C/CPFF	BOEING : SEATTLE WA	4.983	0.000		0.000		0.250	Nov 2023	-		0.250	0.000	5.233	4.983
P-8A ACOMMS Software Development	C/CPFF	VARIOUS : VARIOUS	0.000	0.000		0.899	Nov 2022	3.947	Nov 2023	-		3.947	0.000	4.846	-
Subtotal			55.844	3.205		3.617		5.397		-		5.397	Continuing	Continuing	N/A
Remarks															
FY24 updated to reflect current execution plan to support the addition of ACOMMS.															
FY24 funding increase established for P-8A to Subsurface Submarine Acoustic Communications (ACOMMS) Development Project to improve ASW coordination between air and subsurface platforms.															
Various vendors based on competitive nature of contracts.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Support cost no longer funded in the FYDP	Various	VARIOUS : VARIOUS	35.380	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
ACOMMS support	C/CPFF	VARIOUS : VARIOUS	0.000	0.000		0.000		1.408	Nov 2023	-		1.408	0.000	1.408	-
Subtotal			35.380	0.000		0.000		1.408		-		1.408	Continuing	Continuing	N/A
Remarks															
FY24 updated to reflect current execution plan to support the addition of ACOMMS.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604261N / Acoustic Search Sensors				Project (Number/Name) 3224 / High Altitude ASW					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	VARIOUS : VARIOUS	8.200	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			8.200	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Eng Spt	Various	VARIOUS : VARIOUS	4.021	0.145	Nov 2021	0.163	Nov 2022	0.300	Nov 2023	-		0.300	Continuing	Continuing	Continuing
Government Eng Spt	WR	NAWCAD : PATUXENT RIVER, MD	25.551	0.401	Nov 2021	0.450	Nov 2022	0.552	Nov 2023	-		0.552	Continuing	Continuing	Continuing
Prior Year Mngmt Svcs no longer funded in the FYDP	Various	VARIOUS : VARIOUS	3.589	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			33.161	0.546		0.613		0.852		-		0.852	Continuing	Continuing	N/A
Remarks															
Funding increase as of FY24 for Sonobuoy Acoustic Communications Development Project to improve ASW coordination between air and subsurface platforms.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			132.585	3.751		4.230		7.657		-		7.657	Continuing	Continuing	N/A
Remarks															
Funding increase as of FY24 for Sonobuoy Acoustic Communications Development Project to improve ASW coordination between air and subsurface platforms.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604261N / Acoustic Search Sensors

Project (Number/Name)

3224 / High Altitude ASW



## PMA-264 High Altitude ASW (3224)

FY 2022

1 2 3 4

FY 2023

1 2 3 4

FY 2024

1 2 3 4

FY 2025

1 2 3 4

FY 2026

1 2 3 4

FY 2027

1 2 3 4

FY 2028

1 2 3 4

### Acquisition Milestones

Review & Milestones

ACOMMS Early Capability ▲

### System Development

Hardware System Development and Improvements

HW Development

Software and Aircraft Integration and Improvements

SW Development

AEELS Prototyping & Analysis

Encryption

Prototyping & Analysis

ACOMMS

Acoustic Comms

### Test and Evaluation

AEELS Prototype assessments

AEELS Prototype assessments

Technical Evaluation

ACOMMS Developmental test

ACOMMS Developmental test

ACOMMS Operational test

ACOMMS Operational test

### Production Milestones

Contract Award

ACOMMS  
Contract  
Award ▲

#### Note:

- The HAASW 3224 schedule has been updated to reflect FY22-FY28 key enhancements and sonobuoy enablers: the Automated Extended Life Sonobuoy (AEELS), sonobuoy encryption, and P-8A Acoustic Communications (ACOMMS).

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604261N / <i>Acoustic Search Sensors</i>	<b>Project (Number/Name)</b> 3224 / <i>High Altitude ASW</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj: 3224 High Altitude ASW</i></b>				
Acquisition Milestones: Review & Milestones	4	2027	4	2027
System Development: Hardware Development: Hardware System Development	1	2022	4	2028
System Development: Software Development: Software System Development	1	2022	4	2028
System Development: AEELS Prototyping & Analysis: AEELS Prototyping & Analysis	1	2022	4	2028
System Development: Encryption Prototyping & Analysis: Encryption Prototyping & Analysis	1	2022	4	2025
System Development: Acoustic Comms: ACOMMS	1	2024	1	2026
Test & Evaluation: AEELS Prototype evaluations: AEELS Prototype assessments	1	2023	4	2028
Test & Evaluation: ACOMMS Developmental test: ACOMMS Developmental test	1	2026	1	2027
Test & Evaluation: ACOMMS Operational test: ACOMMS Operational test	4	2026	4	2027
Production Milestones: Contract Award: ACOMMS Contract Award	1	2024	1	2024

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604261N / <i>Acoustic Search Sensors</i>				<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: <i>Congressional Adds</i>	0.000	4.827	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.827
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
 Congressional Add. Implement sonobuoy modernization and specialized sonobuoy development in support of passive detection range, data bandwidth, bearing accuracy and depth selection improvements, encrypted sonobuoy communications links, and non-electrical automatic scuttle features.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> Sonobuoy capabilities research	4.827	0.000
<b><i>FY 2022 Accomplishments:</i></b> Support Congressional Add efforts.		
<b><i>FY 2023 Plans:</i></b> N/A		
<b>Congressional Adds Subtotals</b>	4.827	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
 N/A

**Remarks**

**D. Acquisition Strategy**  
 N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604261N / Acoustic Search Sensors				Project (Number/Name) 9999 / Congressional Adds					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis	Various	Various : Various	0.000	4.607	Jun 2022	0.000		0.000		-		0.000	0.000	4.607	-
Subtotal			0.000	4.607		0.000		0.000		-		0.000	0.000	4.607	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Spt	WR	NAWCAD : PATUXENT RIVER, MD	0.000	0.220	Jun 2022	0.000		0.000		-		0.000	0.000	0.220	-
Subtotal			0.000	0.220		0.000		0.000		-		0.000	0.000	0.220	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	4.827		0.000		0.000		-		0.000	0.000	4.827	N/A
Remarks															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>



PMA-264 Congressional Add (9999)

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Congressional Add      Sonobuoy Capabilities research  
   [REDACTED]

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604261N / <i>Acoustic Search Sensors</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 9999</i>				
Congressional Add: Sonobuoy Capabilities Research	2	2022	4	2023



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604262N / V-22A							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	9,916.095	89.448	125.233	137.597	-	137.597	117.745	128.179	103.747	112.708	Continuing	Continuing
1425: V-22	9,904.583	70.958	98.007	95.569	-	95.569	39.753	32.372	12.417	0.000	0.000	10,253.659
3090: V-22 Improvement Program	11.512	14.387	27.226	42.028	-	42.028	77.992	95.807	91.330	112.708	Continuing	Continuing
9999: Congressional Adds	0.000	4.103	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.103
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 212												
A. Mission Description and Budget Item Justification The V-22 Osprey is an Acquisition Category IC Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the Carrier Onboard Delivery needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The MV-22 variant replaced the CH-46E in the Marine Corps and the CMV-22 variant will replace the C-2A in the Navy. The CV-22 variant replaced the MH-53J and MH-53M and augments the C-130 in the Air Force and USSOCOM. The V-22 is capable of flying over 2,100 nautical miles, with a single refueling, giving the services the advantage of a vertical/short take-off and landing aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development for correction of deficiencies and includes Block B upgrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision as well as Block C suitability and effectiveness development upgrades. Currently converting all Block B to Block C configuration. Capability Development Document interoperability requirements were addressed through a spiral upgrade acquisition strategy. It was the first spiral upgrade providing Key Enabling Department of Defense mandated open systems architecture upgrades for the mission computer hardware and software while simultaneously addressing required interoperability common avionics upgrades and current avionics obsolescence issues. Future development efforts will include pre-planned-product-improvements in the capability development document and re-design efforts to correct critical Reliability, Maintainability and Availability issues in support of readiness Operational Safety Improvement Program as prioritized by the United States Marine Corps (USMC) or an Urgent Universal Needs Statement.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604262N / V-22A			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	105.729	125.233	136.158	-	136.158
Current President's Budget	89.448	125.233	137.597	-	137.597
Total Adjustments	-16.281	0.000	1.439	-	1.439
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-13.498	0.000			
• SBIR/STTR Transfer	-2.783	0.000			
• Program Adjustments	0.000	0.000	0.623	-	0.623
• Rate/Misc Adjustments	0.000	0.000	0.816	-	0.816
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: 9999: Congressional Adds					
Congressional Add: V-22 oil coolers					
					</

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604262N / V-22A	
<p>4. Open Systems Architecture / Cyber Security - Schedule updated to reflect the rephasing of the Joint Avionics Reconfigurable Virtual Information System (JARVIS) program. JARVIS Phase 1 was completed in FY-21 and Phase II began in FY-22.</p> <p>4. Degraded Visual Environment/Helmet Mounted Display - DVE/HMD is dependent on the Platform Data Service (PDS) / Ethernet Expansion Device (EED) schedule which has slipped. Schedule updated to reflect the delay in the PDS/EED program. A/C Testing has been deleted and Developmental and Operational Testing have been added. Test Readiness Review and Fleet Incorporation have been deleted.</p> <p>Schedule: Project Unit 3090:</p> <p>1. Hardware Development - Schedule updated to reflect testing through FY 2028 and title updated to Airframe Hardware Development.</p> <p>2. Flight Control System Re-design - Schedule updated to reflect a delay in delivery of hardware for the test benches. HW Qual and Fleet Inc. have been deleted as they were in error on the schedule. ECP Step 2 and Kits/Installs have been broken out separately. Test Readiness Review and FT-3 have been added to the schedule.</p> <p>3. Open Systems Architecture/Cyber Security - Schedule updated to reflect current Platform Data Service / Ethernet Expansion Device effort.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 1425 / V-22			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1425: V-22	9,904.583	70.958	98.007	95.569	-	95.569	39.753	32.372	12.417	0.000	0.000	10,253.659
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 212												
A. Mission Description and Budget Item Justification												
<p>The V-22 Osprey is an Acquisition Category IC Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the Carrier Onboard Delivery (COD) needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 is replacing the CH-46E in the Marine Corps with the MV-22; will supplement the H-60 in the Navy with the MV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 is capable of flying over 2,100 nautical miles, with a single refueling, giving the services the advantage of a Vertical/Short Take-off and Landing aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development (EMD) for correction of deficiencies and includes Block B upgrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision as well as Block C suitability and effectiveness development upgrades. Currently converting all Block B to Block C configuration. Capability Development Document interoperability requirements were addressed through a spiral upgrade acquisition strategy. It was the first spiral providing Key Enabling, Department of Defense mandated, open systems architecture upgrades for the mission computer hardware and software while simultaneously addressing required interoperability common avionics upgrades and current avionics obsolescence issues. Future development efforts will include Pre-Planned-Product-Improvements in the Capability Development Document and re-design efforts to correct critical Reliability, Maintainability and Availability issues in support of readiness Operational Safety Improvement Program as prioritized by the United States Marine Corps (USMC) or an Urgent Universal Needs Statement.</p>												
<p>FY 2024 continues Airframe Hardware Development to fund development efforts in support of V-22 Block upgrades, Time on Wing, and Safety Improvement efforts. Continues engineering, logistics, flight test, flight test support and addresses the correction of deficiencies and obsolescence. Continues V-22 software development/mission computer obsolescence initiatives such as transition tech demo and modular avionics mission computer re-design. Continues efforts to resolve Enhanced Standby Flight Instrument (ESFI) and Fuel Cell obsolescence issues. Continues Input Quill Assembly re-design related to Hard Clutch Engagement.</p>												
<p>FY 2024 continues Propulsion/Mission Care Hardware Development to fund the flight/engine hours that are necessary for the design, development, validation and verification of the V-22 propulsion and power systems at the Patuxent River squadron. Rolls-Royce will continue to provide engine support and development of V-22 flight testing.</p>												
<p>FY 2024 continues the CMV-22 Hardware Development efforts which consist of an Engineering Change Proposal (ECP) to modify the MV-22 into the CMV-22 configuration to perform the COD mission. The ECP will add such things as (1) the capability to meet the range requirements that the COD mission demands, (2) a high frequency (HF) radio to transmit/receive beyond line of sight (BLOS) over water, (3) a public address (PA) system for use while transporting passengers, (4) an improved cargo handling system, and (5) enhanced fuel jettison system. CMV-22 will continue developmental testing to include envelope expansion, Electromagnetic Environment</p>												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 1425 / V-22		
Effects testing, HF radio testing, Carrier Suitability and integration testing. CMV-22 will continue to support development efforts such as: Obsolescence, Center Console re-design, Modular Avionics/Cyber Security Implementation and Fuel Cell obsolescence. Continues Input Quill Assembly re-design related to Hard Clutch Engagement.						
FY 2024 continues Open System Architecture/Cyber Security development efforts to provide new capabilities focused on enhancing reliability, survivability, software and hardware modularity, and maturation of robust aircraft data interfaces. Continues risk reduction and development efforts such as Cyber-Resilient interoperability, Modular Avionics/Cyber Security Implementation, Cyber Safe Flight Control improvements,and Cockpit Avionics re-design. Continues research, requirements analysis, and design and development of obsolescence mitigation solutions for aging V-22 Avionics systems to overcome obsolete hardware availability. Replacement systems will be designed to provide compatibility with all legacy interfaces and functions while resolving deficiencies, meeting expanding needs, and leveraging emerging hardware and software technologies to mitigate future obsolescence.						
FY 2024 continues risk reduction and developmental efforts for improved situational awareness and safety in Degraded Visual Environment (DVE) situations. A Digital Helmet Mounted Display (HMD) system integrated with a Synthetic Vision Processor operating in an Ethernet Environment is required to interface and function with the new Enhanced Visual Acuity (EVA) system being developed. The DVE/HMD safety improvement is a Deputy Commandant for Aviation priority.						
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: V-22 Airframe Hardware Development		15.171	28.911	19.527	0.000	19.527
Articles:		-	-	-	-	-
Description: The V-22 Airframe Hardware Development continues to fund development efforts in support of V-22 Block upgrades, electrical system capacity efforts, and Time on Wing/Reliability Improvement efforts such as testing of Additive Manufacturing processes for selected V-22 components. Continues Aircraft Mission Maneuvering Envelope Expansion and Safety Improvement efforts. Continues engineering, logistics, flight test, flight test support and addresses the correction of deficiencies and obsolescence. Continues V-22 software development/sustainment efforts such as transition tech demo and Modular Avionics Mission Computer Obsolescence Initiative re-design. Continues to resolve ESFI obsolescence. Continues development of particle separation solutions that will improve maintainability and reliability which will facilitate improved mission capable rates and long-term operational success.						
FY 2023 Plans:						
Continues V-22 software development efforts. Continues development in support of V-22 Block upgrades, Time on Wing/Reliability Improvements such as testing of Additive Manufacturing processes for selected V-22 components. Continues Aircraft Mission Maneuvering Envelope Expansion and Safety Improvement efforts such as Condition Based Maintenance. Continues engineering, logistics, flight test and flight test support. Addresses						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 1425 / V-22		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
correction of deficiencies and obsolescence efforts, Air Data Unit, cockpit interface units, training upgrades and developments and in addition ESFI. Continues reliability improvement efforts as well as re-design efforts to correct critical Reliability, Maintainability and Availability issues in support of readiness Operational Safety Improvement Program, to include Planetary Pinion and Zinc Nickel . Begin Primary Lightning Control Unit re-design.  <b>FY 2024 Base Plans:</b> Continues V-22 software development efforts. Continues development in support of V-22 Block upgrades, Time on Wing/Reliability Improvements such as testing of Additive Manufacturing processes for selected V-22 components. Continues Aircraft Mission Maneuvering Envelope Expansion and Safety Improvement efforts. Continues engineering, logistics, flight test and flight test support. Addresses correction of deficiencies and obsolescence efforts such as air data unit, cockpit interface units, training upgrades and developments, fuel cell and ESFI. Continues reliability improvement efforts as well as re-design efforts to correct critical Reliability, Maintainability and Availability issues in support of readiness Operational Safety Improvement Program to include Input Quill Assembly re-design related to Hard Clutch Engagement. Continues Planetary Pinion and Zinc Nickel.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease in FY 2024 for Airframe Hardware Development reallocates funding from PU 1425 to PU 3090 to fund Flight Control System re-design in FY 2024.						
Title: V-22 Propulsion / Mission Care Hardware Development  <div>Articles:</div> <b>Description:</b> Propulsion/Mission Care Hardware Development funds the flight/engine hours that are necessary for the design, development, validation and verification of the V-22 propulsion and power systems at the Patuxent River squadron. In addition, it pays for Rolls Royce to provide engine support and development of the V-22 flight testing.  <b>FY 2023 Plans:</b>		0.623 -	1.886 -	1.924 -	0.000 -	1.924 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 1425 / V-22		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continues flight/engine hours that are necessary for the design, development, validation, and verification of the V-22 propulsion and power systems at the Patuxent River squadron. Rolls Royce will continue to provide engine support and development of V-22 flight testing. <b>FY 2024 Base Plans:</b> Continues flight/engine hours that are necessary for the design, development, validation, and verification of the V-22 propulsion and power systems at the Patuxent River squadron. Rolls Royce will continue to provide engine support and development of V-22 flight testing. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase in FY 2024 for Propulsion/Mission Care Hardware Development is due to inflation.						
Title: V-22 CMV Development <div>Articles:</div> <b>Description:</b> Funding supports the implementation of an ECP to incorporate the new systems required for the CMV-22 configuration to perform the COD mission. The ECP will add (1) the capability to meet the range requirements that the COD mission demands (2) a HF radio to transmit/receive BLOS over water, (3) a PA system for use while transporting passengers, (4) an improved cargo handling system, and (5) enhanced fuel jettison system. CMV-22 will execute developmental testing to include things such as envelope expansion, Electromagnetic Environment Effects testing, HF radio testing and begin Carrier Suitability and Integration testing. Continue Obsolescence, CMV-22 Center Console re-design, Flight Control System (FCS) re-design and Modular Avionics/Cyber Security Implementation.  <b>FY 2023 Plans:</b> Continues funding for the CMV-22 Development effort to perform the COD mission. Support the development of Functional Test Plans for the HF radio to transmit/receive BLOS over water and the PA system. Development of the Joint Vertical Experimental Application System Software will continue. Continue the developmental testing for the CMV-22 preliminary envelope expansion and Electromagnetic Environment Effects. Continue Modular Avionics software development/sustainment efforts such as Mission Computer obsolescence initiative re-design and modular software. Continue developmental efforts such as electrical system re-design, IRS re-design, and Cyber Security implementation. Continue the Carrier Suitability and Integration testing. Continue Operational testing. Continue Interoperability development for additional critical capabilities such as Link-16, Terrain Avoidance Warning System II, Mobile Users Objective System, Mobile Expeditionary Communications		11.798 -	16.521 -	22.746 -	0.000 -	22.746 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 1425 / V-22		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
System and secondary BLOS. Continue the spiral development of the Required Navigation Performance / Area Navigation capability to upgrade to full precision approach capability and coupled approach. Continue integration of Joint Precision Approach and Landing System (JPALS). Support the Future Readiness Initiative to fully automate data ingestion of all applicable data sources to include conditioning, cleansing, transformation, persistence and retrieval from a unified data repository in an organized, ready for use format.						
FY 2024 Base Plans: Continues funding for the CMV-22 Development effort to perform the COD mission. Development of the Joint Vertical Experimental Application System Software will continue. Continue Modular Avionics software development/sustainment efforts such as Mission Computer obsolescence initiative re-design and modular software. Continue developmental efforts such as Flight Control System re-design, Central Display Unit/ Keyboard Unit obsolescence re-design, Primary Lighting Control Unit re-design, Input Quill Assembly re-design related to Hard Clutch Engagement and Cyber Security implementation. Continue Interoperability development for additional critical capabilities such as Link-16, Terrain Avoidance Warning System II and Mobile Users Objective System. Continue the spiral development of the Required Navigation Performance/Area Navigation capability to upgrade the full precision approach capability and coupled approach. Continue development and integration of JPALS. Support the Future Readiness Initiative to fully automate data ingestion of all applicable data sources to include conditioning, cleansing, transformation, persistence and retrieval from a unified data repository in an organized, ready for use format. Begin Fuel Cell obsolescence re-design and Next Generation Mission Planning development.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 for CMV Development is additional funding for Fuel Cell obsolescence re-design and JPALS to fully fund the CMV scope of work planned in FY 2024.						
Title: V-22 Infrared Suppressor (IRS) Re-design		0.000	0.500	0.000	0.000	0.000
Articles:		-	-	-	-	-
Description: IRS re-design and reliability improvement efforts mask the infrared signature of the V-22 aircraft, which increases the operational survivability. The current IRS system fails to meet reliability requirements and continues to be a readiness degrader. V-22 IRS system includes funds for EMD and instrumented flight test of IRS system solutions.						
FY 2023 Plans:						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A	Project (Number/Name) 1425 / V-22			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Funding continues the integration of the new IRS system for the V-22. The IRS system masks the infrared signature of an aircraft which increases the survivability. <b>FY 2024 Base Plans:</b> N/A <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease in FY 2024 for Infrared Suppressor (IRS) is due to the completion of the development effort. Any remaining efforts will be completed with FY 2023 funding.						
Title: V-22 Development Support, Test and Evaluation <div>Articles:</div>		26.995 -	25.176 -	25.859 -	0.000 -	25.859 -
Description: Funds Government Engineering and Contractor Engineering, including Follow-On Test & Evaluation (FOT&E), Developmental Test & Engineering (DT&E), and Operational Test & Evaluation (OT&E) for the V-22 flight events. Perform Government oversight. Execute test program risk reduction efforts. <b>FY 2023 Plans:</b> Funds provided for continued support of FOT&E, DT&E and OT&E to include vehicle flight control software updates, mission systems software and hardware updates, inlet distortion, environmental control systems, structural fatigue, high density altitude envelope expansion, Nacelle Improvements, Integrated Aircraft Survivability Equipment, Sea Trials, communication systems, navigation systems, weapons systems, Degraded Visual Environment/Helmet Mounted Display (DVE/HMD), and CMV Developmental Test and Communications upgrades. <b>FY 2024 Base Plans:</b> Funds provided for continued support of FOT&E, DT&E and OT&E to include vehicle flight control software updates, mission systems software and hardware updates, inlet distortion, environmental control systems, structural fatigue, Nacelle improvements, Integrated Aircraft Survivability Equipment, Sea Trials, communication systems, navigation systems, weapons systems, DVE/HMD, Joint Avionics Reconfigurable Virtual Information System Mission Computer and CMV developmental upgrades. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 1425 / V-22		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase in FY 2024 for Development Support, Test and Evaluation is due to inflation and NWCF rate adjustments.						
Title: V-22 Open Systems Architecture / Cyber Security		10.571	11.995	12.235	0.000	12.235
Articles:		-	-	-	-	-
Description: Open System Architecture/Cyber Security provides non-proprietary hardware and software agnostic architecture and interfaces, focused on enhancing survivability, maturation of software and hardware modularity, rapid technology and capability insertion, obsolescence mitigation, and maturation of aircraft interfaces to support robust, Cyber-Resilient interoperability and data transfer, storage and routing. The project includes risk reduction and development efforts such as Modular Avionics Architecture, Cyber Security Implementation, and Cyber Safe Flight Control improvements for Control Display Units, Standby Flight Indicators, Keyboard Units, Engine Instrument Crew Alerting System, Primary Lighting Control Unit, Remote Frequency Indicator Selector, Heads-Up Displays, and Flight Director Panel. Provides integrated solutions for Mission Computer Obsolescence mitigation, functional upgrades, Ethernet backbone (High speed Ethernet communication), Ethernet switches and routing functions (Ethernet Expansion Devices) to enable distributed processing. Joint Avionics Reconfigurable Virtual Information System (JARVIS) along with associated JARVI modules and Ethernet connectivity for distributed modular processing are the current open system architecture efforts being developed.						
FY 2023 Plans:						
Continues requirements analysis, integration studies, integrated designs, risk reduction testing and developmental efforts for Modular Avionics Architecture, Cockpit Avionics obsolescence mitigation, Ethernet backbone, Ethernet switches and routing functions. Continues development of JARVIS Mission Computer System, associated JARVI modules, Ethernet switches and routing functions for distributed modular processing. Begins the Cockpit Avionics re-design.						
FY 2024 Base Plans:						
Continues requirements analysis, integration studies, integrated designs, risk reduction testing and developmental efforts for Modular Avionics Architecture, Cockpit Avionics obsolescence mitigation, Ethernet backbone, Ethernet Expansion device switches and routing functions. Continues development of JARVIS Mission Computer system and associated JARVI modules for distributed modular processing. Continues the Cockpit Avionics re-design.						
FY 2024 OCO Plans:						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604262N / V-22A		<b>Project (Number/Name)</b> 1425 / V-22	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A					
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase in FY 2024 for Open Systems Architecture/Cyber Security is due to inflation.					
<b><i>Title:</i></b> V-22 Degraded Visual Environment/Helmet Mounted Display (DVE/HMD)	5.800	13.018	13.278	0.000	13.278
<b><i>Articles:</i></b>	-	-	-	-	-
<b><i>Description:</i></b> The V-22 Digital HMD will reduce heads down time and provide better situational awareness and crew coordination to improve safety in DVE. A digital HMD is required to provide host power and digital video interface for the EVA system being developed. The DVE/HMD safety improvement is a Deputy Commandant for Aviation priority.					
<b><i>FY 2023 Plans:</i></b> Continues DVE developmental efforts to improve safety when conducting reduced visibility landings which will include requirements analysis, risk reduction and developmental efforts. Begin Flight Test.					
<b><i>FY 2024 Base Plans:</i></b> Continues DVE development and system integration efforts to improve safety when conducting reduced visibility landings. Efforts will include requirements analysis, risk reduction and developmental test and qualification efforts in System Integration Labs and on DT aircraft. Begin Operational Flight Test.					
<b><i>FY 2024 OCO Plans:</i></b> N/A					
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase in FY 2024 is for inflation.					
<b>Accomplishments/Planned Programs Subtotals</b>	70.958	98.007	95.569	0.000	95.569

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN 0164: V-22	1,098.263	508.700	27.216	-	27.216	59.986	50.735	0.000	0.000	0.000	35,284.344
• APN 0590: V-22 Series	250.512	233.128	215.997	-	215.997	248.410	279.337	306.218	335.243	1,956.086	6,230.568
• APN 0605/J0164: V-22 Initial Spares	15.627	26.461	30.562	-	30.562	47.519	62.957	39.862	41.254	830.459	1,094.701

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy							<b>Date:</b> March 2023				
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604262N / V-22A			<b>Project (Number/Name)</b> 1425 / V-22				

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 1160403BB: <i>CV-22 Special Operations, Aviation Systems</i>	6.655	11.695	21.619	-	21.619	21.289	28.069	23.445	19.834	Continuing	Continuing
• RDTE BA07 0401318F: <i>CV-22 USAF BA07</i>	17.189	10.121	18.086	-	18.086	16.348	20.241	17.061	17.658	Continuing	Continuing
• OPN 4213: <i>CMV-22 SCD</i>	176.387	272.044	162.273	-	162.273	117.925	97.652	97.973	98.420	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The V-22 is a post Milestone III ACAT-IC program. As a result of mishaps during and subsequent to V-22 Operational Evaluation (Apr and Dec 00), the program was restructured employing a phased approach to return to flight and tactical introduction. The Contractor and Government defined deficient areas within the program/ aircraft requiring correction prior to return to flight. A Block Upgrade approach was planned, with required efforts identified in Block "A", "B", and "C". Block "A" included those efforts necessary to return the V-22 to safe and operational fleet operations. Block "B" included those efforts necessary to improve the effectiveness and suitability of the aircraft. Block "C" includes mission enhancements like weather radar, cabin effectiveness suitability improvements, i.e., Environmental Control System, and Forward Firing ALE-47. Non-recurring development activities will be initiated and completed for all efforts identified in Block "A", "B", and "C". The Contractor will develop specific statements of work and preliminary specification change notices required to integrate the block upgrade efforts into the baseline Program. A Systems Requirements Review, Initial Design Review, and Final Design Review was held for each of the block efforts so the design maturity could be reviewed and the Government could redirect activities as appropriate. The CV-22 EMD program is also structured in Blocks to define an evolutionary approach to achieving full operational capability. Block "0" is the initial baseline CV-22 variant. Block "10" enhances mission capability with the addition of terrain following radar, additional fuel tanks, additional radios, and Block "20" includes capabilities such as radio frequency and infrared countermeasures improvements. Additional Blocks are in the planning stages to continue the growth process throughout the operational life of the weapon system. The CMV-22 will add (1) the capability to meet the range requirements that the COD mission demands (2) a HF radio to transmit/receive BLOS over water, (3) a PA system for use while transporting passengers in support of the COD mission, (4) an improved cargo handling system, and (5) enhanced fuel jettison system.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604262N / V-22A	<b>Project (Number/Name)</b> 1425 / V-22
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 Airframe Hardware Dev	Various	Various : Various	180.589	15.171	Jan 2022	28.911	Jan 2023	19.527	Jan 2024	-		19.527	8.597	252.795	-
V-22 Propulsion Hardware Dev	SS/CPIF	Rolls-Royce Corp. : Indianapolis, IN	200.158	0.623	Nov 2021	1.886	Nov 2022	1.924	Nov 2023	-		1.924	2.209	206.800	205.551
V-22 CMV Development	Various	Various : Various	219.273	11.798	Jan 2022	16.521	Jan 2023	22.746	Jan 2024	-		22.746	8.077	278.415	-
V-22 IRS Re-design	SS/CPFF	Honeywell : Tempe, AZ	6.392	0.000	Jul 2022	0.500	Jul 2023	0.000		-		0.000	0.000	6.892	7.254
V-22 Open Systems Architecture / Cyber Security	Various	Various : Various	19.293	10.571	Mar 2022	11.995	Mar 2023	12.235	Mar 2024	-		12.235	12.784	66.878	-
V-22 Degraded Visual Environment/Helmet Mounted Display	C/CPIF	Various : Various	12.993	5.800	Sep 2022	13.018	Jul 2023	13.278	Jul 2024	-		13.278	5.595	50.684	-
Prior year Prod Dev no longer funded in FYDP	Various	Various : Various	5,319.094	0.000		0.000		0.000		-		0.000	0.000	5,319.094	-
<b>Subtotal</b>			5,957.792	43.963		72.831		69.710		-		69.710	37.262	6,181.558	N/A

**Remarks**

Airframe Hardware Development: Decrease in FY 2024 reallocates funding from PU 1425 to PU 3090 to fund Flight Control System.  
 Propulsion Hardware Development: Increase in FY 2024 is due to inflation.  
 CMV Development: Increase in FY 2024 is additional funding for Fuel Cell obsolescence re-design and Joint Precision Approach and Landing System to fully fund the CMV scope of work planned for FY 2024.  
 IRS Re-design: Decrease in FY 2024 is due to the completion of developmental efforts.  
 Open Systems Architecture: Increase in FY 2024 is due to inflation.  
 Degraded Visual Environment/Helmet Mounted Display: Increase in FY 2024 is due to inflation.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 MV Govt Engineering Sppt	WR	Various : Pax River, MD	1,127.121	4.628	Nov 2021	3.805	Nov 2022	4.024	Nov 2023	-		4.024	7.228	1,146.806	-
V-22 CMV Govt Engineering Sppt	WR	Various : Pax River, MD	49.329	2.628	Nov 2021	2.591	Nov 2022	2.704	Nov 2023	-		2.704	5.907	63.159	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604262N / V-22A	<b>Project (Number/Name)</b> 1425 / V-22
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Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support no longer funded in the FYDP	Various	Various : Various	189.718	0.000		0.000		0.000		-		0.000	0.000	189.718	-
<b>Subtotal</b>			1,366.168	7.256		6.396		6.728		-		6.728	13.135	1,399.683	N/A

**Remarks**

MV Government Engineering Support: Increase in FY 2024 is due to inflation and NWCF rate adjustments.  
 CMV Government Engineering Support: Increase in FY 2024 is due to inflation and NWCF rate adjustments.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	1,115.561	12.163	Nov 2021	12.184	Nov 2022	12.428	Nov 2023	-		12.428	6.790	1,159.126	-
Operational Test & Evaluation (OT&E)	WR	OT&E Force : Norfolk, VA	71.235	1.725	Dec 2021	3.786	Dec 2022	4.000	Dec 2023	-		4.000	9.182	89.928	-
Live Fire Test & Evaluation (LFT&E)	WR	NAWCWD : China Lake, CA	2.877	0.470	Nov 2021	0.155	Nov 2022	0.000	Nov 2023	-		0.000	7.851	11.353	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	48.200	0.000		0.000		0.000		-		0.000	0.000	48.200	-
<b>Subtotal</b>			1,237.873	14.358		16.125		16.428		-		16.428	23.823	1,308.607	N/A

**Remarks**

Development Test & Evaluation: Increase in FY 2024 is due to inflation.  
 Operational Test & Evaluation: Increase in FY 2024 is due to inflation.  
 Live Fire Test & Evaluation: Decrease in FY 2024 is due to completion of the effort.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 Engineering Tech Sppt	Various	Various : Various	1,051.300	1.001	Dec 2021	0.767	Dec 2022	0.782	Dec 2023	-		0.782	3.060	1,056.910	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy	Date: March 2023
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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604262N / V-22A	Project (Number/Name) 1425 / V-22
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Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 Management Sppt Svc	Various	Various : Various	159.399	0.446	Mar 2022	0.292	Jan 2023	0.298	Jan 2024	-		0.298	3.000	163.435	-
V-22 Program Mgmt Support	WR	NAWCAD : Pax River, MD	71.705	3.761	Nov 2021	0.890	Nov 2022	0.908	Nov 2023	-		0.908	3.000	80.264	-
V-22 CMV Engineering Tech Sppt	Various	Various : Various	1.463	0.000	Jan 2022	0.461	Jan 2023	0.470	Jan 2024	-		0.470	0.527	2.921	-
V-22 Travel	WR	Various : Various	17.453	0.114	Sep 2022	0.185	Sep 2023	0.185	Sep 2024	-		0.185	0.555	18.492	-
V-22 CMV Travel	WR	Various : Various	0.343	0.059	Sep 2022	0.060	Sep 2023	0.060	Sep 2024	-		0.060	0.180	0.702	-
Prior Year Mgmt Svcs no longer funded in the FYDP	Various	Various : Various	41.087	0.000		0.000		0.000		-		0.000	0.000	41.087	-
<b>Subtotal</b>			1,342.750	5.381		2.655		2.703		-		2.703	10.322	1,363.811	N/A

**Remarks**

All increases to Management Services in FY 2024 are due to inflation.

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	9,904.583	70.958	98.007	95.569	-	95.569	84.542	10,253.659	N/A

**Remarks**

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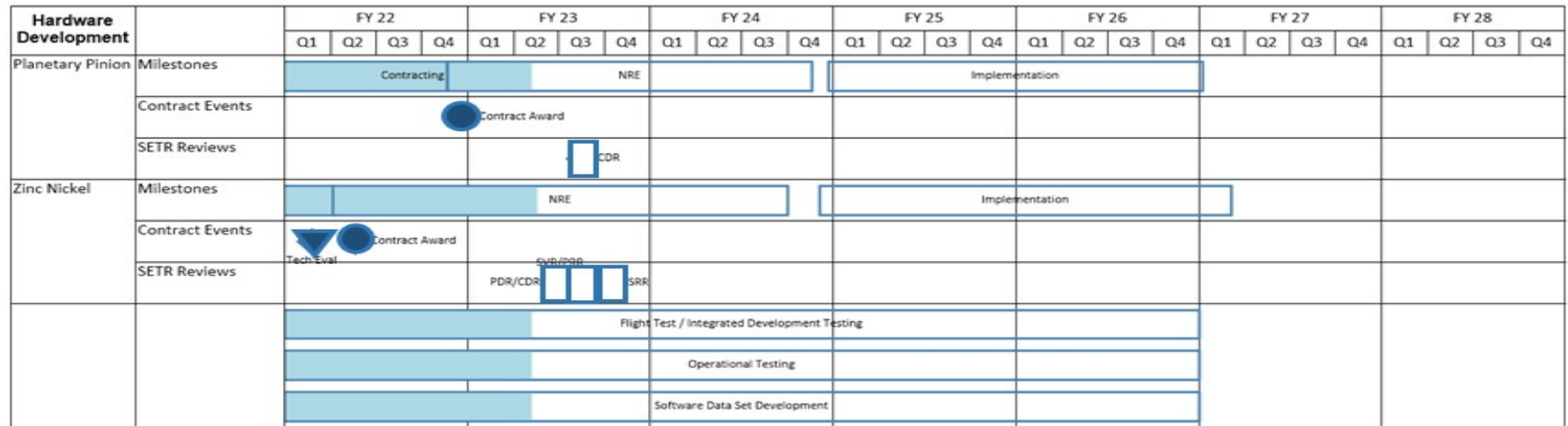
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

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R-1 Program Element (Number/Name)  
PE 0604262N / V-22A

Project (Number/Name)  
1425 / V-22





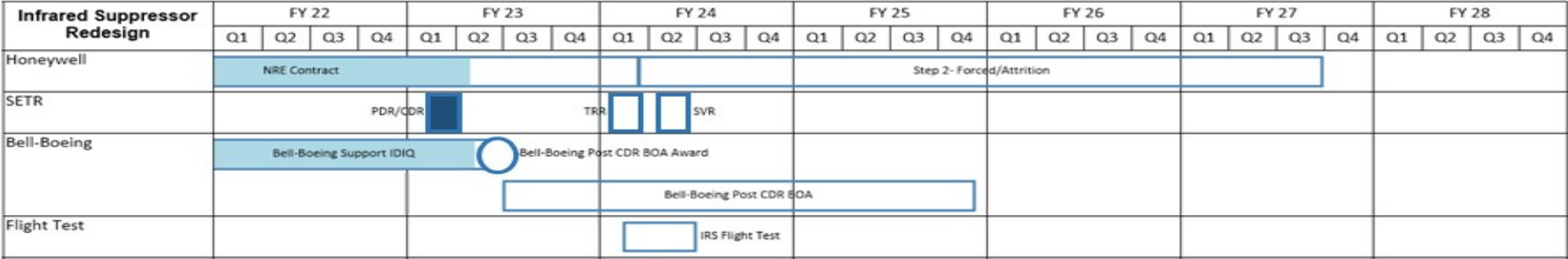
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity										R-1 Program Element (Number/Name)					Project (Number/Name)				
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CMV Development	FY 22				FY 23				FY 24				FY 25				FY 26				FY 27				FY 28			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Contract Events	CMV ECP																											
	DT								Capability FOT&E																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
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PE 0604262N: V-22A  
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**R-1 Program Element (Number/Name)**  
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**Appropriation/Budget Activity**  
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**R-1 Program Element (Number/Name)**  
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**Project (Number/Name)**  
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DVE/HMD	FY 22				FY 23				FY 24				FY 25				FY 26				FY 27				FY 28			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestones																	IOC 											
SETR Reviews	PDR 				HW CDR  SW CDR 				Drawing Delivery 				ECP Delivery 															
									Logistics Product Data Delivery 								DMSMS Delivery 											
Test Events									DT 				OT 															
									Test Procedures 								Deliver Training Supp Documentation 											

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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R-1 Program Element (Number/Name)

PE 0604262N / V-22A

Project (Number/Name)

1425 / V-22

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>V-22 Hardware Development</i></b>				
Reviews: Reviews: Program Design Review / Critical Design Review	2	2023	2	2023
Reviews: Reviews: System Verification Review / Program Requirements Review	3	2023	3	2023
Test & Evaluation: Development Test: Flight Test / Integrated Development Testing	1	2022	4	2026
Test & Evaluation: Operational Evaluation: Operational Testing	1	2022	4	2026
Contract Award: Contract Award: Planetary Pinion	4	2022	4	2022
Contract Award: Contract Award: Zinc Nickel	2	2022	2	2022
<b><i>V-22 CMV Development</i></b>				
Test & Evaluation: Development Test: Developmental Test (DT)	1	2022	4	2022
Test & Evaluation: Operational Evaluation: Follow-On Operational Test and Evaluation	1	2023	4	2025
<b><i>V-22 Infrared Suppressor (IRS) Re-design</i></b>				
Reviews: Reviews: Preliminary Design Review / Critical Design Review	1	2023	1	2023
Reviews: Reviews: Test Readiness Review	1	2024	1	2024
Reviews: Reviews: System Verification Review	2	2023	2	2023
Test & Evaluation: Operational Evaluation: Flight Testing	1	2024	2	2024
Contract Award: Contract Award: Bell Boeing	2	2023	2	2023
<b><i>V-22 Open System Architecture / Cyber Security</i></b>				
Reviews: Reviews: Test Readiness Review	2	2022	2	2022
Reviews: Reviews: Functional Configuration Audit / Physical Configuration Audit	1	2025	1	2025
Reviews: Reviews: Program Requirements Review	2	2025	2	2025
Test & Evaluation: Development Test: Highly Accelerated Life Test	3	2023	3	2023
Test & Evaluation: Development Test: Integration and Test	4	2023	1	2028

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604262N / V-22A	<b>Project (Number/Name)</b> 1425 / V-22
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Contract Award: Contract Award: Joint Avionics Reconfigurable Virtual Information System Contract Award (JARVIS)	2	2023	2	2023
Production Milestones: Production Milestones: Production Contract Award	2	2027	2	2027
Production Milestones: Production Milestones: Production Option Contract Award	2	2028	2	2028
Production Milestones: Production Milestones: Kit Procurement	3	2028	4	2028
<b><i>V-22 Degraded Visual Environment / Helmet Mounted Display Development</i></b>				
Reviews: Reviews: System Requirement Review	1	2022	1	2022
Reviews: Reviews: Preliminary Design Review	3	2022	3	2022
Reviews: Reviews: Critical Design Review	1	2023	1	2023
Reviews: Reviews: SW Critical Design Review	3	2023	3	2023
Reviews: Reviews: Initial Operational Capability	3	2026	3	2026
Test & Evaluation: Development Test: Development Testing	4	2024	3	2025
Test & Evaluation: Operational Evaluation: Operational Testing	4	2025	3	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 3090 / V-22 Improvement Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3090: V-22 Improvement Program	11.512	14.387	27.226	42.028	-	42.028	77.992	95.807	91.330	112.708	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The V-22 Osprey provides a dual-piloted, multi-engine, Vertical/Short Takeoff and Landing, medium lift aircraft for worldwide combat, combat support, combat service support, and Special Operations missions. V-22 Product Improvements addresses requirements necessary to meet the aircraft capabilities specified in the approved Capability Development Document. Efforts included in this Project provide near and long-term improvements to the fleet, addressing deficiencies, systems safety, obsolescence, readiness, reliability, supportability, and relevance in any designated battlespace. Efforts include hardware and software development associated with increased performance capability, avionics upgrades and improvements, increased system processing capability, and the integration with other organic and non-organic systems.

FY 2024 continues Hardware Development in support of V-22 Block upgrades, electrical system capacity efforts, Time on Wing/Reliability Improvements efforts, Aircraft Mission Maneuvering Envelope Expansion and Safety Improvement efforts. Continues engineering, logistics, flight test, flight test support and addresses the correction of deficiencies and obsolescence.

FY 2024 continues Flight Control System re-design, which will address obsolescence issues, mitigate deficiencies and provide improved capabilities through hardware and software upgrades.

FY 2024 continues Open Systems Architecture/Cyber Security research, requirements analysis and development of obsolescence mitigation solutions for aging V-22 Avionics systems to overcome obsolete hardware availability. Replacement systems will be designed to provide compatibility with all legacy interfaces and functions while resolving deficiencies, meeting expanding needs, and leveraging emerging hardware and software technologies to mitigate future obsolescence.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> V-22 Airframe Hardware Development	2.842	7.374	7.696	0.000	7.696
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The V-22 Airframe Hardware Development funds development efforts in support of V-22 Block upgrades, electrical system capacity efforts, Time on Wing/Reliability Improvements efforts, Aircraft Mission Maneuvering Envelope Expansion, and Safety Improvement efforts. Continues engineering, logistics, flight test, flight test support, and addresses the correction of deficiencies and obsolescence.					
<b>FY 2023 Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A	Project (Number/Name) 3090 / V-22 Improvement Program			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Continues development in support of V-22 Block upgrades, Time on Wing/Reliability Improvements such as testing of Additive Manufacturing processes for selected V-22 components, Aircraft Mission Maneuvering Envelope Expansion, and Safety Improvement efforts such as Condition Based Maintenance. Continues engineering, logistics, flight test, flight test support, and addresses correction of deficiencies and obsolescence efforts. Continues reliability improvement efforts as well as re-design efforts to correct critical Reliability, Maintainability, and Availability issues in support of readiness such as Pitch Change Link Bearing re-design.</p> <p><b>FY 2024 Base Plans:</b> Continues development in support of V-22 Block upgrades, Time on Wing/Reliability Improvements such as testing of Additive Manufacturing processes for selected V-22 components, Aircraft Mission Maneuvering Envelope Expansion, and Safety Improvement efforts. Continues engineering, logistics, flight test, flight test support, and addresses correction of deficiencies and obsolescence efforts. Continues reliability improvement efforts as well as re-design efforts to correct critical Reliability, Maintainability, and Availability issues in support of readiness such as Pitch Change Link Bearing re-design.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase in FY 2024 for Airframe Hardware Development is due to inflation and fuel pricing.</p>						
<p><b>Title:</b> V-22 Flight Control System (FCS) Re-Design</p> <p><b>Articles:</b></p> <p><b>Description:</b> The FCS re-design will address obsolescence issues, mitigate current system deficiencies and provide a foundation for improved aircraft handling qualities through hardware and software upgrades. The re-design will correct critical Reliability and Maintainability issues to increase mission effectiveness, provide additional safety, and improve readiness.</p> <p><b>FY 2023 Plans:</b> Continues development of hardware and software architecture upgrades to mitigate obsolescence and data throughput constraints to include Flight Control Computer, Cockpit Interface Unit, and Flight Test Interface Panel. Software language upgrade development in the Cross Channel Data Link and Flight Control Computer Operational Flight program from assembly language to a Higher Order Language for future software</p>		2.053 -	13.101 -	21.102 -	0.000 -	21.102 -



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 3090 / V-22 Improvement Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
maintenance efficiency and capability. Continues Non-Recurring Engineering to complete the Critical Design Review.  <b>FY 2024 Base Plans:</b> Continues development of hardware and software architecture upgrades to mitigate obsolescence and data throughput constraints to include Flight Control Computer, Cockpit Interface Unit, and Flight Test Interface Panel. Software language upgrade development in the Cross Channel Data Link and Flight Control Computer Operational Flight program from assembly language to a Higher Order Language for future software maintenance efficiency and capability. Continues Non-Recurring Engineering to implement Critical Design Review functions, mature box level design and validate all technical requirements in the lab leading up to Test Readiness Review to go to aircraft developmental test.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase in FY 2024 for Flight Control System (FCS) Re-Design funds the MV scope of work planned for FY 2024.						
Title: V-22 Open Systems Architecture/Cyber Security  <b>Articles:</b>  <b>Description:</b> Open System Architecture/Cyber Security provides non-proprietary hardware and software agnostic architecture and interfaces, focused on enhancing survivability, maturation of software and hardware modularity, rapid technology and capability insertion, obsolescence mitigation, and maturation of aircraft interfaces to support robust, Cyber-Resilient interoperability and data routing/transfers. The project includes risk reduction and development efforts such as Modular Avionics Architecture, Cyber Security Implementation, and Cyber Safe Flight Control improvements for Control Display Units, Standby Flight Indicators, Keyboard Unit, Engine Instrument Crew Alerting System, Remote Frequency Indicator Selector, Heads-Up Displays, and Flight Director Panel. Provides integrated solutions for Mission Computer Obsolescence mitigation, functional upgrades, Ethernet backbone (High speed Ethernet communication), Ethernet switches and routing functions to enable distributed processing. Joint Avionics Reconfigurable Virtual Information System (JARVIS) along with associated JARVI modules and Ethernet connectivity for distributed modular processing are the current open system architecture efforts being developed.  <b>FY 2023 Plans:</b>		7.137 -	5.759 -	11.461 -	0.000 -	11.461 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 3090 / V-22 Improvement Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continues requirements analysis, integration studies, integrated designs, risk reduction testing and developmental efforts for Modular Avionics Architecture, Cockpit Avionics obsolescence mitigation, Ethernet backbone, Ethernet switches and routing functions. Begin the Cockpit Avionics re-design.  <b>FY 2024 Base Plans:</b> Continues requirements analysis, integration studies, integrated designs, risk reduction testing and developmental efforts for Modular Avionics Architecture, Cockpit Avionics obsolescence mitigation, Ethernet backbone, Ethernet Expansion device switches and routing functions. Complete Standby Flight Instrument qualification and integration testing.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase in FY 2024 for Open Systems Architecture/Cyber Security is due to the escalation of Non-Recurring Engineering work leading up to the Critical Design Review.						
Title: V-22 Development Support, Test, and Evaluation  <div>Articles:</div> <b>Description:</b> Funds Government Engineering and Contractor Engineering, including Follow-On Test & Evaluation (FOT&E), Developmental Test & Engineering (DT&E), and Operational Test & Evaluation (OT&E) for the V-22 Flight events. Perform Government oversight. Execute test program risk reduction efforts.  <b>FY 2023 Plans:</b> Funds provided for continued support of FOT&E, DT&E and OT&E to include vehicle flight control updates, mission systems software and hardware updates, and high density altitude envelope expansion/verification.  <b>FY 2024 Base Plans:</b> Funds provided for continued support of FOT&E, DT&E and OT&E to include vehicle flight control updates, mission systems software and hardware updates and Sea Trials envelope expansion.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>		2.355 -	0.992 -	1.769 -	0.000 -	1.769 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 3090 / V-22 Improvement Program				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
FY 2024 Increase for Development Support, Test and Evaluation fully funds Flight Control System for the scope of work planned in FY 2024.												
Accomplishments/Planned Programs Subtotals							14.387	27.226	42.028	0.000	42.028	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• APN 0164: V-22	1,098.263	508.700	27.216	-	27.216	59.986	50.735	0.000	0.000	0.000	35,284.344	
• APN 0590: V-22 Series	250.512	233.128	215.997	-	215.997	248.410	279.337	306.218	335.243	1,956.086	6,230.568	
• APN 0605/J0164: V-22 Initial Spares	15.627	26.461	30.562	-	30.562	47.519	62.957	39.862	41.254	830.459	1,094.701	
• RDTE 1160403BB: CV-22 Special Operations, Aviation Systems	6.655	11.695	21.619	-	21.619	21.289	28.069	23.445	19.834	Continuing	Continuing	
• RDTE BA07 0401318F: CV-22 USAF BA07	17.189	10.121	18.086	-	18.086	16.348	20.241	17.061	17.658	Continuing	Continuing	
• OPN 4213: CMV-22 SCD	176.387	272.044	162.273	-	162.273	117.925	97.652	97.973	98.420	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
V-22 Product Improvements will include design and engineering studies, cost-benefit analyses, and risk-reduction efforts to address improvements for readiness, aircraft capability, safety, component reliability, maintainability, software, and obsolescence.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 3090 / V-22 Improvement Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 Airframe Hardware Development	Various	Various : Various	0.000	2.842	Mar 2022	7.374	Jan 2023	7.696	Jan 2024	-		7.696	Continuing	Continuing	Continuing
V-22 Flight Control System Re-Design	SS/BOA	Bell Boeing : Ridley Park, PA	11.512	2.053	May 2022	13.101	Jun 2023	21.102	Jun 2024	-		21.102	Continuing	Continuing	Continuing
V-22 Open Systems Architecture/Cyber Security	Various	Various : Various	0.000	7.137	Jun 2022	5.759	Mar 2023	11.461	Mar 2024	-		11.461	Continuing	Continuing	Continuing
Subtotal			11.512	12.032		26.234		40.259		-		40.259	Continuing	Continuing	N/A
Remarks															
Hardware Development: Increase in FY 2024 is due to inflation and fuel pricing.															
Flight Control System: Increase in FY 2024 funds the MV scope of work planned for FY 2024.															
Open Systems Architecture/Cyber Security: Increase in FY 2024 is due to the escalation of Non-Recurring Engineering work leading up to the Critical Design Review.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 Gov't Engineering Support	WR	NAWCAD : Pax River, MD	0.000	1.272	Oct 2021	0.721	Nov 2022	1.259	Nov 2023	-		1.259	Continuing	Continuing	Continuing
Subtotal			0.000	1.272		0.721		1.259		-		1.259	Continuing	Continuing	N/A
Remarks															
Government Engineering Support: Increase in FY 2024 funds Flight Control System for the scope of work planned in FY 2024.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 Program Mgmt Support	WR	NAWCAD : Pax River, MD	0.000	1.083	Oct 2021	0.261	Nov 2022	0.500	Nov 2023	-		0.500	Continuing	Continuing	Continuing
V-22 Travel	WR	Various : Various	0.000	0.000		0.010	Sep 2023	0.010	Sep 2024	-		0.010	Continuing	Continuing	Continuing
Subtotal			0.000	1.083		0.271		0.510		-		0.510	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604262N / V-22A						Project (Number/Name) 3090 / V-22 Improvement Program					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Remarks																	
Program Mgmt Support: Increase in FY 2024 funds Flight Control System for the scope of work planned in FY 2024.																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			11.512	14.387		27.226		42.028		-		42.028	Continuing	Continuing	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
1319 / 5								PE 0604262N / V-22A								3090 / V-22 Improvement Program			






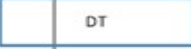



Hardware Development	FY 22				FY 23				FY 24				FY 25				FY 26				FY 27				FY 28			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Airframe Hardware Development									Flight Test / Integrated Developmental Testing																			
									Operational Testing																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 3090 / V-22 Improvement Program	

Flight Control System Redesign	FY 22				FY 23				FY 24				FY 25				FY 26				FY 27				FY 28			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
FCS Redesign ECP Step 1 NRE	CA (BB)				NRE: Step 1																							
					PDR				CDR				TRR				FT-1 FT-2								FT-3			
FCS Redesign ECP Step 2 NRE													CA				Remaining NRE											
FCS: Upgrade Kits and Installs (Step 2)																	SW Mitigation											
Kits & Installs																	CA				Kit Procurements							

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023			
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0604262N / V-22A								Project (Number/Name) 3090 / V-22 Improvement Program			

Open Sys Architecture: Cyber Security		FY 22				FY 23				FY 24				FY 25				FY 26				FY 27				FY 28			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
PDS/EED	Milestones	 Phase 2 Proof of Concept																 IOC											
	SETR Reviews					SRR  PDR  CDR								TRR 															
	Test Events									 DT				 OT															
	Contract Events					Phase 3 CA 												 Kit Production CA											



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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R-1 Program Element (Number/Name)

PE 0604262N / V-22A

Project (Number/Name)

3090 / V-22 Improvement Program

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Hardware Development</b>				
Test & Evaluation: Developmental Testing: Flight Test / Integrated Development Testing	1	2022	4	2028
Operational Evaluation: Operational Testing	1	2022	4	2028
<b>Flight Control System Re-Design</b>				
Reviews: Reviews: Preliminary Design Review	1	2023	1	2023
Reviews: Reviews: Critical Design Review	1	2024	1	2024
Reviews: Reviews: Test Readiness Review	2	2025	2	2025
Test & Evaluation: Operational Evaluation: Flight Test - 1	1	2026	1	2026
Test & Evaluation: Operational Evaluation: Flight Test - 2	3	2026	3	2026
Test & Evaluation: Operational Evaluation: Flight Test - 3	3	2028	3	2028
Contract Award: Contract Award: Step 2 Contract Award	1	2026	1	2026
Production Milestones: Production Milestones: Contract Award	2	2027	2	2027
Production Milestones: Production Milestones: Kit Procurements	3	2027	4	2028
<b>Open Systems Architecture / Cyber Security</b>				
Reviews: Reviews: Systems Requirements Review	2	2023	2	2023
Reviews: Reviews: Preliminary Design Review	3	2023	3	2023
Reviews: Reviews: Critical Design Review	2	2024	2	2024
Reviews: Reviews: Test Readiness Review	3	2025	3	2025
Reviews: Reviews: Initial Operational Capability	2	2026	2	2026
Test & Evaluation: Developmental Testing: Developmental Testing	2	2025	4	2025
Contract Award: Contract Award: Platform Data Service / Ethernet Expansion Device	1	2023	1	2023
Production Milestones: Production Milestones: Kit Production Contract Award	1	2026	1	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	4.103	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.103
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Develop Air-Oil heat exchanger that is resistant to fouling and easy to clean on-wing for V-22 operations in sand/dust environment. Fouled heat exchangers can lead to gearbox overheat in flight and potential for catastrophic consequences. New oil cooler will reduce maintenance burden and improve performance in sand/dust environment to prevent overheating of gearbox, hydraulic, and generator oil.

Based on demonstrated system performance, the V-22 program does not intend to award a contract or obligate any of the \$4.103 million FY22 Navy RDT&E Oil Cooler program increase. The proposed Oil Cooler failed to satisfy V-22 performance requirements.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2022	FY 2023
<b>Congressional Add:</b> V-22 oil coolers	4.103	0.000
<b>FY 2022 Accomplishments:</b> Based on demonstrated system performance, the V-22 program does not intend to award a contract or obligate any of the \$4.103 million FY22 Navy RDT&E Oil Cooler program increase. The proposed Oil Cooler failed to satisfy V-22 performance requirements.		
<b>FY 2023 Plans:</b> N/A		
<b>Congressional Adds Subtotals</b>	4.103	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
Continue with Small Business Innovative Research (SBIR).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604262N / V-22A						Project (Number/Name) 9999 / Congressional Adds			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
V-22 Oil Coolers	SS/FFP	International Mezzo Technologies : Baton Rouge, LA	0.000	4.103	Sep 2023	0.000		0.000		-		0.000	0.000	4.103	4.000
Subtotal			0.000	4.103		0.000		0.000		-		0.000	0.000	4.103	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	4.103		0.000		0.000		-		0.000	0.000	4.103	N/A
Remarks															

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PE 0604262N / V-22A

<b>Project (Number/Name)</b>	9999 / Congressional Adds
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604262N / V-22A	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Development Milestones</i>				
V-22 Oil Coolers: Contract Award	4	2023	4	2023
V-22 Oil Coolers: Requirements deveopment	2	2022	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0604264N / <i>Air Crew Systems Development</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	195.552	20.271	50.282	42.155	-	42.155	10.216	7.850	7.696	7.862	Continuing	Continuing
0606: <i>Aircrew System Development</i>	190.747	17.212	35.802	34.327	-	34.327	3.258	2.448	2.453	2.513	Continuing	Continuing
9099: <i>Physiological Episodes</i>	4.805	3.059	7.480	7.828	-	7.828	6.958	5.402	5.243	5.349	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	0.000	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.000

## **A. Mission Description and Budget Item Justification**

The Aircrew Systems Development program provides Engineering and Manufacturing Development of Aviation Life Support Systems to protect aircrew and flight deck personnel from current and future threats including: directed energy weapons, chemical/biological/radiological agents/fallout, ballistic projectiles, temperature extremes, heat/fire, low concentration oxygen environments, high dynamic forces during emergency egress, hearing loss, and high "G" forces. The program also provides development for the following capabilities: night vision capability, hearing and head protection, aircrew endurance, aircrew performance, man mounted data display, communications, clothing, in flight restraint and stability, emergency egress and descent, escape and evasion, survival and rescue, crash protection, and anthropometric sizing for small aircrew. Acquisition initiatives include: competition, the application of streamlining initiatives, use of non-developmental items, joint and tri-service developments, and the pursuit of NATO/allied cooperative ventures, which expedite introduction of new products into Navy and Marine Corps fixed and rotary wing aircraft, reduce costs, and promote commonality.

Physiological Monitoring: This program provides funding to assure pilot performance integrity by developing and fielding a system that monitors pilot physiological parameters and warns of state of health or performance degradation that may result in loss of consciousness or the ability to safely conduct flight. There are several solutions undergoing evaluation.

Helmet Mask Regulator (HMR): The Physiological Episode (PE) Root Cause & Corrective Action (RCCA) determined that an improved mask/regulator system was required to mitigate PE. This program determines what improvements are needed and develops the material solution.

### **JUSTIFICATION FOR BUDGET ACTIVITY:**

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production decision.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604264N / Air Crew Systems Development			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	20.746	43.282	25.647	-	25.647
Current President's Budget	20.271	50.282	42.155	-	42.155
Total Adjustments	-0.475	7.000	16.508	-	16.508
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	7.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.475	0.000			
• Program Adjustments	0.000	0.000	16.430	-	16.430
• Rate/Misc Adjustments	0.000	0.000	0.078	-	0.078
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: 9999: Congressional Adds					
Congressional Add: Aircrew systems development					



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification: PB 2024 Navy</b>		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604264N / <i>Air Crew Systems Development</i>
<p>1. Enhanced Visual Acuity (EVA) CDR has been delayed from Q4FY22 to Q4FY23 due to redesign of the Electronic Assembly (EA) to meet temperature specifications. IOC has also been delayed from Q2FY26 to Q4FY26 due to technical maturity of the Micro-LED. The following schedule changes were made based on time required for resolution of issues identified during Preliminary Design Review (PDR) and delays in achieving required technical maturity:</p> <ul style="list-style-type: none"> <li>-EVA Milestone C moved from Q4FY24 to Q2FY25</li> <li>-EVA IOC moved from Q2FY26 to Q4FY26</li> <li>-EVA FRP DR moved from Q3FY26 to Q1FY27</li> <li>-EVA EMD Phase moved from Q1FY21 through Q4FY24 to Q1FY21 through Q2FY25</li> <li>-EVA Design and Development contract moved from Q1FY21 through Q4FY24 to Q1FY22 through Q2FY25</li> <li>-EVA CDR moved from Q4FY22 to Q4FY23</li> <li>-EVA TRR moved from Q1FY24 to Q4FY24</li> <li>-EVA SVR/PRR moved from Q3FY24 to Q1FY25</li> <li>-EVA OTRR moved from Q4FY24 to Q2FY25</li> <li>-EVA PCA moved from Q4FY25 to Q3FY26</li> <li>-EVA DT-B1 moved from Q2FY23 through Q4FY23 to Q2FY23 through Q4FY24</li> <li>-EVA IT-B2 moved from Q1FY24 through Q3FY24 to Q4FY24 through Q1FY25</li> <li>-EVA IT-C2 moved from Q3FY26 through Q4FY26 to Q1FY27 through Q3FY27</li> <li>-EVA IT-C3 moved from Q2FY27 through Q3FY27 to Q3FY28 through Q4FY28</li> <li>-EVA OT-C1 moved from Q2FY25 through Q4FY25 to Q2FY25 through Q2FY26</li> <li>-EVA LRIP 1 Award moved from Q4FY24 to Q3FY25</li> <li>-EVA LRIP 2 Award moved from Q1FY26 to Q3FY26</li> <li>-EVA FRP Award moved from Q1FY27 to Q3FY27</li> <li>-EVA EDM (QTY 8) Delivery moved from Q2FY23 through Q3FY23 to Q1FY24 through Q2FY24</li> <li>-EVA EDM (QTY 4) Delivery moved from Q2FY24 to Q1FY25</li> <li>-EVA LRIP 1 Delivery moved from Q1FY26 through Q1FY27 to Q3FY26 through Q2FY27</li> <li>-EVA LRIP 2 Delivery moved from Q1FY27 through Q4FY27 to Q3FY27 through Q3FY28</li> </ul> <p>2. Accelerated developmental efforts under the MH-60R/S Head &amp; Neck Injury Mitigation (HNIM) program allowed for an expedited delivery of test units, but also necessitated a change to contracting strategy that will result in a later Design and Development Contract award. The following major changes were made accordingly:</p> <ul style="list-style-type: none"> <li>-HNIM Test Units Delivery moved from Q4FY23 to Q1FY23</li> <li>-HNIM Design and Development Contract Award moved from Q1FY23 to Q4FY23</li> </ul> <p>3. The following major changes were made to the Improved Joint Helmet Mounted Cueing System (IJHMCS) program based on refinement of requirements leading to changes in the acquisition strategy:</p> <ul style="list-style-type: none"> <li>-IJHMCS Milestone B moved from Q1FY24 to Q3FY23</li> </ul>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	PE 0604264N / Air Crew Systems Development	
<div>-IJHMCS RFP Release moved from Q3FY22 to Q1FY23</div> <div>-IJHMCS EMD Phase moved from Q1FY24 through Q1FY26 to Q3FY23 through Q4FY25</div> <div>-IJHMCS FRPDR moved from Q2FY27 to Q3FY26</div> <div>-IJHMCS FRP 1 Award moved from Q2FY27 to Q3FY26</div> <div>-IJHMCS FRP 1 POP moved from Q2FY27 through Q4FY28 to Q3FY26 through Q4FY28</div> <div>-IJHMCS Kickoff moved from Q1FY23 to Q3FY23</div> <div>-IJHMCS System Design/Development &amp; Aircraft Integration Award moved from Q1FY24 to Q3FY23</div> <div>Technical:</div> <div>Not Applicable</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 0606 / Aircrew System Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0606: Aircrew System Development	190.747	17.212	35.802	34.327	-	34.327	3.258	2.448	2.453	2.513	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

AIRCREW SYSTEMS: Aircrew Systems include Enhanced Visual Acuity (EVA), MH-60R/S Head and Neck Injury Mitigation (HNIM), Improved Joint Helmet Mounted Cueing System (IJHMCS), and Next Generation Survival Radio (NGSR). EVA provides advanced day/night vision/Head Up Display (HUD) capability to address critical capability gaps in low and no light illumination levels (night vision). EVA will be integrated on current aircraft through a common interface allowing an incremental, modular approach to fielding full capability and future upgrades. Future increments will provide enhanced aircrew situational awareness in degraded visual environments. HNIM will leverage work conducted during the Gunner Seat replacement program to reduce aircraft vibrations through incorporation of active and passive vibration damping into MH-60 R/S cockpit seats to reduce fatigue and enhance mission endurance. IJHMCS (previously identified as "JHMCS" on the 2023 President's Budget submission) will integrate onto the Lift or GENTEX helmet solutions, which were down-selected by the US Air Force Next-Generation Fixed Wing Helmet (NGFWH) program. IJHMCS will mitigate aircrew back and neck strain/fatigue and replace the JHMCS Helmet Mounted Day Display and Night Vision Cueing Device (NVCD) with a single day/night, digital color-capable helmet-mounted display. NGSR will address communication security (COMSEC) modernization directives and current obsolescence issues, providing a secure two-way Beyond Line-of-Sight (BLOS) communications capability between isolated personnel and rescue coordination and recovery forces. The RW/TR Aircrew Vest Program provides for an improved RW/TR Aircrew Survival Vest for MH-60S, MH-60R, CH-53E, and CMV-22 aircrew to address safety and performance issues with the currently fielded solution.

SAFETY AND SURVIVAL SYSTEMS: Safety and Survival Systems include Aircrew Safety Improvement Program (ASIP, FY24 start) and State of the Art (SOA). ASIP provides agile response to high-priority, near-term aircrew systems deficiencies and capability gaps to address critical safety and performance issues. SOA provides for the yearly evaluation of survival systems, addresses capability gaps, and executes developmental efforts to increase endurance, safety, and survivability. SOA also rapidly qualifies Commercial Off-the-Shelf (COTS) and non-developmental items (NDI) as solutions to enhance safety and survivability. This R-2 category was previously known as "AIRCRAFT SYSTEMS" on the 2023 President's Budget submission, but has been renamed to more precisely describe work being performed. SOA efforts previously categorized under "AIRCREW SYSTEMS" have been re-aligned to "SAFETY AND SURVIVAL SYSTEMS" to document these efforts more accurately.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Aircrew System Development	11.850	32.801	30.726	0.000	30.726
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Aircrew Systems include Enhanced Visual Acuity (EVA), MH-60R/S Head and Neck Injury Mitigation (HNIM), Improved JHMCS (IJHMCS), and Next Generation Survival Radio (NGSR).					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development		Project (Number/Name) 0606 / Aircrew System Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>FY 2023 Plans:</b> Enhanced Visual Acuity (EVA): Deliver four Engineering Mass Models for crash load testing. MH-60R/S Head and Neck Injury Mitigation (HNIM): Begin development and engineering of vibration-damping into cockpit seats on MH-60R/S leveraging prior work conducted on Gunner Seat replacement program to reduce fatigue and enhance mission endurance. Improved Joint Helmet Mounted Cueing System (IJHMCS): Complete Milestone B, award EMD contract, and begin development efforts for IJHMCS to mitigate aircrew back and neck strain/fatigue for F/A-18 E/F and EA-18G platforms. Next Generation Survival Radio (NGSR): Begin development and design to modify, test, qualify, and field NGSR in order to ensure secure two-way Beyond Line-of-Sight (BLOS) communications capability between isolated personnel and rescue coordination and recovery forces.</p> <p><b>FY 2024 Base Plans:</b> Enhanced Visual Acuity (EVA): Deliver eight Engineering Development Models, conduct Developmental Testing DT-B1, and hold Technology Readiness Review and Flight Readiness Review. MH-60R/S Head and Neck Injury Mitigation (HNIM): Complete Critical Design Review (CDR) and Technical Readiness Review (TRR). Continue development to modify, test, qualify and field vibration-damping systems for the cockpit seats on the MH-60R/S. Improved Joint Helmet Mounted Cueing System (IJHMCS): Complete CDR, take delivery of Mass Models and Engineering Development Models, and begin developmental testing. Next Generation Survival Radio (NGSR): Continue development and design to modify, test, qualify, and field NGSR in order to ensure secure two-way Beyond Line-of-Sight (BLOS) communications capability between isolated personnel and rescue coordination and recovery forces. RW/TR Aircrew Vest Program: Continue to develop improvements to Survival Vest System.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 reflects planned acquisition life cycles for NGSR and EVA programs.</p>						
Title: Safety and Survival Systems		5.362	3.001	3.601	0.000	3.601
Articles:		-	-	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604264N / Air Crew Systems Development		<b>Project (Number/Name)</b> 0606 / Aircrew System Development	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p><b>Description:</b> Safety and Survival Systems includes ASIP and SOA.</p> <p><b>FY 2023 Plans:</b> State of the Art (SOA): Continue to enhance safety and survivability by providing for technology pacing through continuing evaluation of survival items, clothing, and other aircrew systems in order to fill capability gaps and increase aircrew safety, endurance, and performance. Aircrew Safety Improvement Program (ASIP): Continue to provide for response to high-priority, near-term aircrew systems deficiencies and capability gaps to address safety and performance issues.</p> <p><b>FY 2024 Base Plans:</b> State of the Art (SOA): Continue to enhance aircrew safety and survivability by monitoring Commercial Off-the-Shelf (COTS) and Non-Developmental Items (NDI) technology and solution improvements that afford superior protection to legacy products in areas of survival gear, clothing and mission performance equipment. Selection and qualification of SOA candidates will be prioritized according to latest Fleet operator demand signals. Aircrew Safety Improvement Program (ASIP): Continue to provide development and qualification in response to high-priority, near-term aircrew systems deficiencies and capability gaps to address critical safety and performance issues.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase from FY23 to FY24 reflects addition of Department-approved funding provided to support ASIP efforts.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	17.212	35.802	34.327	0.000	34.327

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/4268: Aviation Life Support	34.451	41.564	36.046	-	36.046	68.894	80.652	82.260	76.424	Continuing	Continuing
• APN/0575: Aviation Life Support Mods	2.416	1.143	0.000	-	0.000	9.793	11.607	12.140	8.570	Continuing	Continuing

<b>Remarks</b>											
Note: Aviation Life Support is only a portion of OPN Line Item 4268.											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
<p><b>D. Acquisition Strategy</b></p> <p>Leverage Commercial-Off-The-Shelf/Non-Developmental Items where possible. Full and open competition, utilizing negotiated best value procedures, was utilized for the EVA engineering, development and manufacturing contract. Due to the technical complexity and uncertainty associated with design and development, EVA is utilizing a cost plus fixed fee contract.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 0606 / Aircrew System Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Eng EVA	C/CPFF	NAVAIR : Patuxent River, MD	11.600	8.712	Nov 2021	10.869	Nov 2022	12.681	Nov 2023	-		12.681	Continuing	Continuing	Continuing
Systems Eng EVA	WR	NAWCAD : Patuxent River, MD	28.304	3.088	Nov 2021	1.965	Nov 2022	2.734	Nov 2023	-		2.734	Continuing	Continuing	Continuing
Systems Eng HNIM	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.650	Nov 2022	2.800	Nov 2023	-		2.800	0.400	4.850	-
Systems Eng IJHMCS	C/CPFF	TBD : TBD	0.000	0.000		8.643	May 2023	4.400	Dec 2023	-		4.400	0.000	13.043	-
Systems Eng IJHMCS	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.157	Nov 2022	1.500	Nov 2023	-		1.500	0.000	2.657	-
Systems Eng NGSR	C/CPFF	TBD : TBD	0.000	0.000		8.000	Nov 2022	3.000	Nov 2023	-		3.000	0.000	11.000	-
Systems Eng ASIP	WR	Various : Various	0.000	0.000		0.000		1.170	Nov 2023	-		1.170	Continuing	Continuing	Continuing
Systems Eng SOA	WR	Various : Various	71.047	4.862	Dec 2021	2.501	Dec 2022	1.688	Dec 2023	-		1.688	Continuing	Continuing	Continuing
Systems Eng Vest Program	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		1.053	Nov 2023	-		1.053	0.000	1.053	-
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	65.647	0.000		0.000		0.000		-		0.000	0.000	65.647	-
Subtotal			176.598	16.662		34.785		31.026		-		31.026	Continuing	Continuing	N/A
Remarks															
- Increase of \$1.812M from FY23 to FY24 under Systems Eng EVA (C/CPFF) is due to increased engineering requirements in preparation for Milestone C decision. - Increase of \$1.15M from FY23 to FY24 under Systems Eng HNIM (G/WR) is due to increased engineering requirements in preparation for Milestone C decision. - Decrease from FY23 to FY24 under Systems Eng IJHMCS (C/CPFF) is due to transition out of the design/development phase into the government qualification phase of EMD. - Decrease of \$5M under Systems Eng NGSR (TBD) reflects planned acquisition life cycles for that program and transition to procurement phase. - Increase of \$1.170M from FY23 to FY24 under Systems Eng ASIP (G/WR) is to fund Department-approved requirements for Safety and Survivability ASIP efforts. - Increase of \$1.053M from FY23 to FY24 under Systems Eng Vest (G/WR) is to fund Department-approved requirements for the RW/TR Aircrew Vest System.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 0606 / Aircrew System Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	0.000	0.000	Oct 2021	0.000	Oct 2022	2.225	Nov 2023	-		2.225	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	Various : Patuxent River, MD	0.758	0.000		0.467	Oct 2022	0.525	Nov 2023	-		0.525	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NAWCAD : Patuxent River, MD	0.000	0.500	Oct 2021	0.500	Oct 2022	0.500	Nov 2023	-		0.500	0.000	1.500	-
Subtotal			0.758	0.500		0.967		3.250		-		3.250	Continuing	Continuing	N/A
Remarks															
- Developmental T&E being performed by NAWCAD is in support of IJHMCS (\$2.0M in FY24) and ASIP (\$225k in FY24).															
- Developmental T&E being performed by Various activities at Patuxent River, MD is in support of EVA (\$467k in FY23 and \$525k in FY24).															
- Operational T&E being performed by NAWCAD is in support of SOA (\$500k each FY from FY22-FY24).															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	Various : Various	1.468	0.050	Oct 2021	0.050	Oct 2022	0.051	Oct 2023	-		0.051	Continuing	Continuing	Continuing
Prior year Mgmt Svcs no longer funded in the FYDP	Various	Various : Various	11.923	0.000		0.000		0.000		-		0.000	0.000	11.923	-
Subtotal			13.391	0.050		0.050		0.051		-		0.051	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			190.747	17.212		35.802		34.327		-		34.327	Continuing	Continuing	N/A
Remarks															



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PE 0604264N: *Air Crew Systems Development*  
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PE 0604264N / Air Crew Systems Development

0606 / Aircrew System Development

EVA Program	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028								
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
Milestones Phases													MS C							★ IOC	△ FRP DR												
Program Management	Engineering and Manufacturing Development												Production and Deployment																				
Contracts	Design and Development												AWD △	LRIP 1 (OPN) POP										LRIP 2 (OPN) POP									
														AWD △										Full Rate Production									
														AWD △										A-kit Modification CH-53E									
														RFP △										A-kit Modification H-60									
Deliveries	Mass Models (4)												8 EDM units				4 Optional EDM units				LRIP 1				LRIP 2								
Engineering	PDR				CDR				TRR/ FRR				SVR/ PRR				PCA																
													OTRR																				
Logistics	LCSP												LCSP ILA				M-Demo				ILA												
Test and Evaluation													DT-B1				IT-B2				OT-C1				IT-C2 (H-53)				IT-C3 (H60)				
													Lab/SIL/Ground				Flight																

**Note: EVA Prime Contractor is currently undergoing Over Target Baseline and Over Target Schedule proceedings that will likely result in corresponding schedule adjustments. An updated schedule will be provided at the next budget cycle. If deemed operationally representative, EDM assets will be used for OPEVAL.**

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

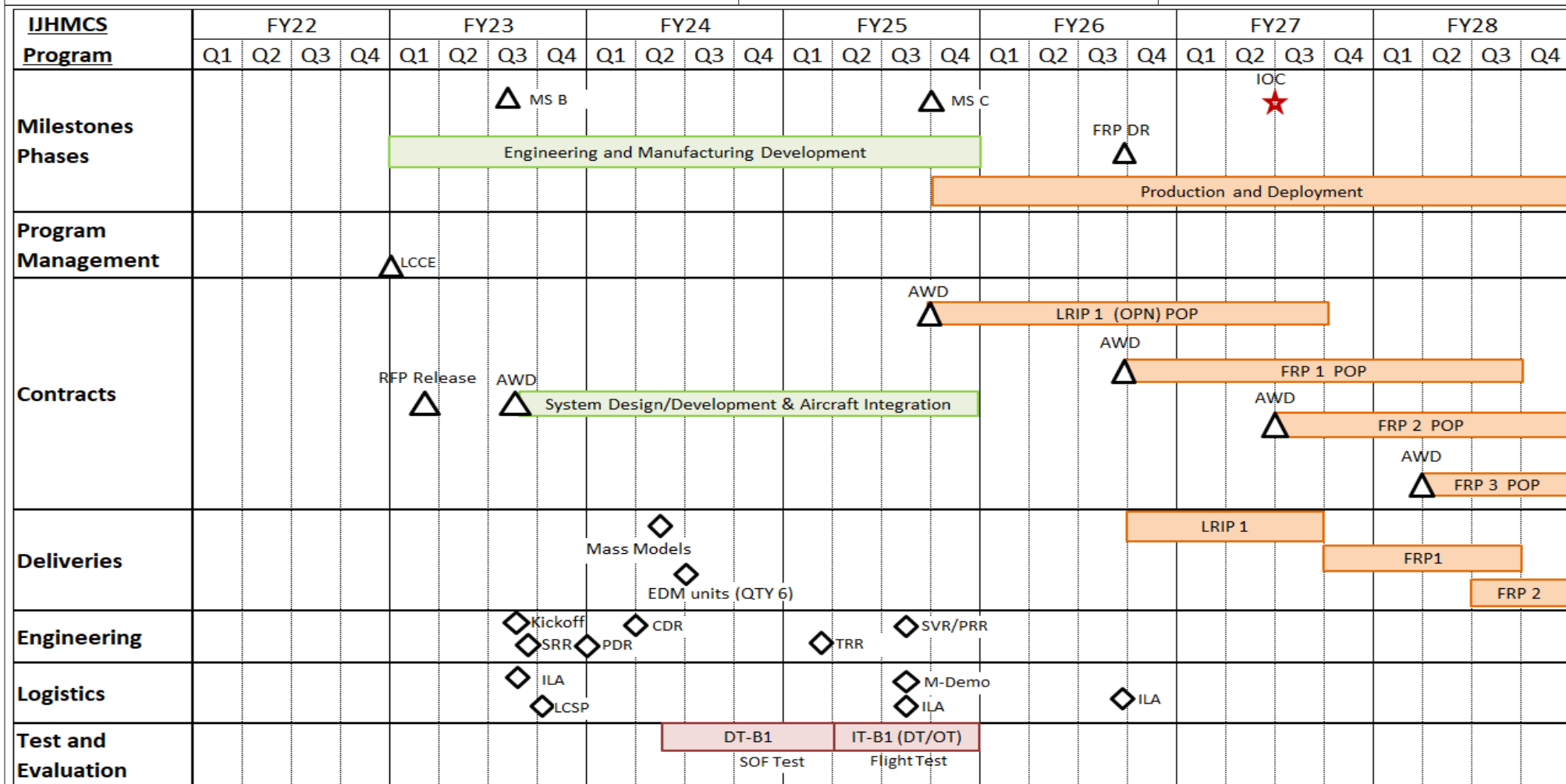
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604264N / Air Crew Systems Development	<b>Project (Number/Name)</b> 0606 / Aircrew System Development
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HNIM Program	FY22				FY23				FY24				FY25				FY26				FY27				FY28				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Milestones														Δ MS C			★ IOC				Δ FRP DR								
Phases					Engineering and Manufacturing Development								Production and Deployment																
Program Management					Δ IBR																								
Contracts								AWD Δ Design and Development						AWD Δ LRIP 1															
																	AWD Δ LRIP 2												
																					AWD Δ FRP								
Deliveries					4 Test Units												LRIP 1 (OPN, QTY 150)					LRIP 2 (OPN, QTY 150)					FRP (OPN, QTY 240)		
Engineering								◇ PDR	◇ CDR	TRR	◇																		
Logistics								◇ LCSP									◇ ILA												
Test and Evaluation								DT-B1 Lab/SIL/ Ground				Flight IT-B2																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

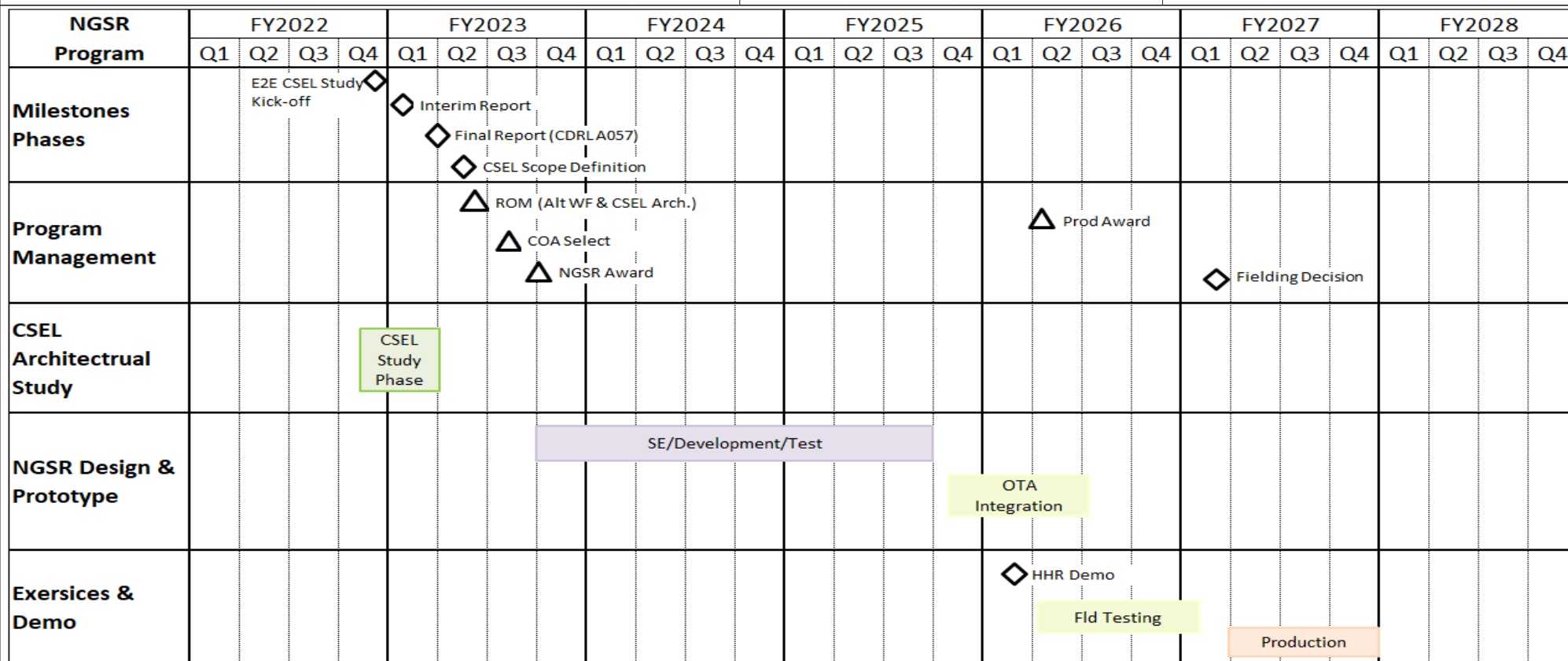
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604264N / Air Crew Systems Development	<b>Project (Number/Name)</b> 0606 / Aircrew System Development
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604264N / Air Crew Systems Development	<b>Project (Number/Name)</b> 0606 / Aircrew System Development
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**Note:** This schedule has been furnished by the United States Air Force (USAF). The Next Generation Survival Radio (NGSR) program is managed by the Joint Program Management Office (JPMO), with the USAF as the lead integrator. As a stakeholder, the funding provided by the USN represents a commitment to address Communication Security (COMSEC) modernization directives and current obsolescence issues. Funding will augment and expedite USAF's efforts to engineer, develop, modify, test, qualify, and field NGSR to ensure Beyond Line-of-Site (BLOS) communications capability to allow downed aviators to be expeditiously located, identified, and recovered.

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

Project (Number/Name)

0606 / Aircrew System Development

Safety and Survival Systems	FY22				FY23				FY24				FY25				FY26				FY27				FY28			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestones Phases																												
Program Management				SOA Catalog Update △				SOA Catalog Update △				SOA Catalog Update △				SOA Catalog Update △				SOA Catalog Update △				SOA Catalog Update △				SOA Catalog Update △
				SOA/ASIP Requirements Identification △				SOA/ASIP Requirements Identification △				SOA/ASIP Requirements Identification △				SOA/ASIP Requirements Identification △				SOA/ASIP Requirements Identification △				SOA/ASIP Requirements Identification △				SOA/ASIP Requirements Identification △
Contracts	RFI △			Procure Test Assets △	RFI △			Procure Test Assets △	RFI △			Procure Test Assets △	RFI △			Procure Test Assets △	RFI △			Procure Test Assets △	RFI △			Procure Test Assets △	RFI △			Procure Test Assets △
Deliveries	Test Asset Deliveries △				Test Asset Deliveries △				Test Asset Deliveries △				Test Asset Deliveries △				Test Asset Deliveries △				Test Asset Deliveries △				Test Asset Deliveries △			
Engineering																												
Logistics																												
Test and Evaluation																												
	Developmental Testing				Developmental Testing				Developmental Testing				Developmental Testing				Developmental Testing				Developmental Testing				Developmental Testing			
	Operational Testing				Operational Testing				Operational Testing				Operational Testing				Operational Testing				Operational Testing				Operational Testing			
	Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing			

Note: SOA provides for the yearly evaluation of survival systems, addresses capability gaps, and executes developmental efforts to increase endurance, safety, and survivability. ASIP provides agile response to high-priority, near-term aircrew systems deficiencies and capability gaps to address critical safety and performance issues.

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

## Project (Number/Name)

0606 / Aircrew System Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Enhanced Visual Acuity (EVA)</b>				
Acquisition Milestones: Milestones: EVA Milestone C	2	2025	2	2025
Acquisition Milestones: Milestones: EVA IOC	4	2026	4	2026
Acquisition Milestones: Milestones: EVA FRP DR	2	2027	2	2027
Acquisition Milestones: Phases: EVA Engineering & Manufacturing Development Phase	1	2022	2	2025
Acquisition Milestones: Phases: EVA Production & Deployment Phase	2	2025	4	2028
System Development: Reviews: EVA PDR	1	2022	1	2022
System Development: Reviews: EVA CDR	4	2023	4	2023
System Development: Reviews: EVA TRR	4	2024	4	2024
System Development: Reviews: EVA SVR/PRR	1	2025	1	2025
System Development: Reviews: EVA OTRR	2	2025	2	2025
System Development: Reviews: EVA PCA	3	2026	3	2026
Test and Evaluation: EVA Developmental Testing DT-B1	2	2023	4	2024
Test and Evaluation: EVA Integrated Testing IT-B2	4	2024	1	2025
Test and Evaluation: EVA Integrated Testing IT-C2	1	2027	3	2027
Test and Evaluation: EVA Integrated Testing IT-C3	3	2028	4	2028
Test and Evaluation: EVA Operational Testing OT-C1	2	2025	2	2026
Production Milestones: Contract Awards: EVA LRIP 1 (OPN)	3	2025	3	2025
Production Milestones: Contract Awards: EVA LRIP 2 (OPN)	3	2026	3	2026
Production Milestones: Contract Awards: EVA FRP (OPN)	3	2027	3	2027
Deliveries: EVA Mass Models	2	2023	2	2023

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

## Project (Number/Name)

0606 / Aircrew System Development

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: EVA EDM (QTY 8)	1	2024	2	2024
Deliveries: EVA EDM (QTY 4)	1	2025	1	2025
Deliveries: EVA LRIP 1	3	2026	2	2027
Deliveries: EVA LRIP 2	3	2027	3	2028
<b><i>MH-60 R/S Head &amp; Neck Injury Mitigation (HNIM)</i></b>				
Acquisition Milestones: Milestones: HNIM Milestone C	2	2025	2	2025
Acquisition Milestones: Milestones: HNIM IOC	1	2026	1	2026
Acquisition Milestones: Milestones: HNIM FRP DR	1	2027	1	2027
Acquisition Milestones: Phases: HNIM Engineering & Manufacturing Development Phase	1	2023	1	2025
Acquisition Milestones: Phases: HNIM Production & Deployment Phase	2	2025	4	2028
System Development: Reviews: HNIM PDR	4	2023	4	2023
System Development: Reviews: HNIM CDR	1	2024	1	2024
System Development: Reviews: HNIM TRR	4	2024	4	2024
Test and Evaluation: HNIM Developmental Testing DT-B1	4	2023	2	2024
Test and Evaluation: HNIM Integrated Testing IT-B2	3	2024	1	2025
Test and Evaluation: HNIM Operational Testing OT-C1	2	2025	3	2025
Test and Evaluation: HNIM Integrated Testing IT-C2	1	2026	2	2026
Production Milestones: Contract Awards: HNIM Design and Development Contract	1	2023	1	2023
Production Milestones: Contract Awards: HNIM LRIP 1 (OPN)	1	2025	1	2025
Production Milestones: Contract Awards: HNIM LRIP 2 (OPN)	2	2026	2	2026
Production Milestones: Contract Awards: HNIM A-Kit Mod H-60 Award	3	2026	3	2026
Production Milestones: Contract Awards: HNIM FRP 1 (OPN)	2	2027	2	2027
Deliveries: HNIM Test Units	1	2023	1	2023
Deliveries: HNIM LRIP 1	1	2026	4	2026
Deliveries: HNIM LRIP 2	1	2027	4	2027

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

## Project (Number/Name)

0606 / Aircrew System Development

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: HNIM FRP	1	2028	2	2028
<b>Improved Joint Helmet Mounted Cueing System (IJHMCS)</b>				
Acquisition Milestones: Milestones: IJHMCS Milestone B	3	2023	3	2023
Acquisition Milestones: Milestones: IJHMCS Milestone C	4	2025	4	2025
Acquisition Milestones: Milestones: IJHMCS FRP DR	3	2026	3	2026
Acquisition Milestones: Milestones: IJHMCS IOC	3	2027	3	2027
Acquisition Milestones: Phases: IJHMCS Engineering & Manufacturing Development Phase	1	2023	4	2025
Acquisition Milestones: Phases: IJHMCS Production & Deployment Phase	4	2025	4	2028
System Development: Reviews: IJHMCS Kickoff	3	2023	3	2023
System Development: Reviews: IJHMCS SRR	3	2023	3	2023
System Development: Reviews: IJHMCS PDR	1	2024	1	2024
System Development: Reviews: IJHMCS CDR	2	2024	2	2024
System Development: Reviews: IJHMCS TRR	1	2025	1	2025
System Development: Reviews: IJHMCS SVR/PRR	3	2025	3	2025
Test and Evaluation: IJHMCS Developmental Testing DT-B1	2	2024	2	2025
Test and Evaluation: IJHMCS Integration Testing IT-B1	2	2025	4	2025
Production Milestones: Contract Awards: IJHMCS System Design/Development & Aircraft Integration	3	2023	3	2023
Production Milestones: Contract Awards: IJHMCS LRIP 1 (OPN)	4	2025	4	2025
Production Milestones: Contract Awards: IJHMCS FRP 1 (OPN)	3	2026	3	2026
Production Milestones: Contract Awards: IJHMCS FRP 2 (OPN)	3	2027	3	2027
Deliveries: IJHMCS Mass Models	2	2024	2	2024
Deliveries: IJHMCS EDM Units	4	2024	4	2024
Deliveries: IJHMCS LRIP 1	4	2026	3	2027
Deliveries: IJHMCS FRP 1	4	2027	3	2028



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development		Project (Number/Name) 0606 / Aircrew System Development	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Deliveries: IJHMCS FRP 2		4	2028	4	2028
Next Generation Survival Radio (NGSR)					
Acquisition Milestones: Milestones: NGSR Milestone C		4	2024	4	2024
Acquisition Milestones: Phases: NGSR Systems Engineering/Developmental/Test Phase		3	2023	3	2025
Production Milestones: Contract Awards: NGSR Design and Development Contract Award		4	2023	4	2023
Safety and Survival Systems					
Program Management: Milestones: SOA FY22 Catalog Update		4	2022	4	2022
Program Management: Milestones: SOA FY23 Catalog Update		4	2023	4	2023
Program Management: Milestones: SOA FY24 Catalog Update		4	2024	4	2024
Program Management: Milestones: SOA FY25 Catalog Update		4	2025	4	2025
Program Management: Milestones: SOA FY26 Catalog Update		4	2026	4	2026
Program Management: Milestones: SOA FY27 Catalog Update		4	2027	4	2027
Program Management: Milestones: SOA FY28 Catalog Update		4	2028	4	2028
Program Management: Milestones: SOA/ASIP FY22 Requirements Identification		4	2022	4	2022
Program Management: Milestones: SOA/ASIP FY23 Requirements Identification		4	2023	4	2023
Program Management: Milestones: SOA/ASIP FY24 Requirements Identification		4	2024	4	2024
Program Management: Milestones: SOA/ASIP FY25 Requirements Identification		4	2025	4	2025
Program Management: Milestones: SOA/ASIP FY26 Requirements Identification		4	2026	4	2026
Program Management: Milestones: SOA/ASIP FY27 Requirements Identification		4	2027	4	2027
Program Management: Milestones: SOA/ASIP FY28 Requirements Identification		4	2028	4	2028
Contracts: Milestones: SOA FY22 RFI		1	2022	1	2022
Contracts: Milestones: SOA FY23 RFI		1	2023	1	2023
Contracts: Milestones: SOA FY24 RFI		1	2024	1	2024
Contracts: Milestones: SOA FY25 RFI		1	2025	1	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development		Project (Number/Name) 0606 / Aircrew System Development	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Contracts: Milestones: SOA FY26 RFI	1	2026	1	2026
Contracts: Milestones: SOA FY27 RFI	1	2027	1	2027
Contracts: Milestones: SOA FY28 RFI	1	2028	1	2028
Contracts: Milestones: SOA FY22 Procure Test Assets	2	2022	2	2022
Contracts: Milestones: SOA FY23 Procure Test Assets	2	2023	2	2023
Contracts: Milestones: SOA FY24 Procure Test Assets	2	2024	2	2024
Contracts: Milestones: SOA FY25 Procure Test Assets	2	2025	2	2025
Contracts: Milestones: SOA FY26 Procure Test Assets	2	2026	2	2026
Contracts: Milestones: SOA FY27 Procure Test Assets	2	2027	2	2027
Contracts: Milestones: SOA FY28 Procure Test Assets	2	2028	2	2028
Deliveries: Milestones: SOA FY22 Test Assets Delivery	2	2022	2	2022
Deliveries: Milestones: SOA FY23 Test Assets Delivery	2	2023	2	2023
Deliveries: Milestones: SOA FY24 Test Assets Delivery	2	2024	2	2024
Deliveries: Milestones: SOA FY25 Test Assets Delivery	2	2025	2	2025
Deliveries: Milestones: SOA FY26 Test Assets Delivery	2	2026	2	2026
Deliveries: Milestones: SOA FY27 Test Assets Delivery	2	2027	2	2027
Deliveries: Milestones: SOA FY28 Test Assets Delivery	2	2028	2	2028
Test & Evaluation: SOA FY22 Developmental Testing	1	2022	4	2022
Test & Evaluation: SOA FY22 Operational Testing	1	2022	4	2022
Test & Evaluation: SOA FY22 Flight Clearance Testing	1	2022	4	2022
Test & Evaluation: SOA FY23 Developmental Testing	1	2023	4	2023
Test & Evaluation: SOA FY23 Operational Testing	1	2023	4	2023
Test & Evaluation: SOA FY23 Flight Clearance Testing	1	2023	4	2023
Test & Evaluation: SOA FY24 Developmental Testing	1	2024	4	2024
Test & Evaluation: SOA FY24 Operational Testing	1	2024	4	2024

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

## Project (Number/Name)

0606 / Aircrew System Development

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluation: SOA FY24 Flight Clearance Testing	1	2024	4	2024
Test & Evaluation: SOA FY25 Developmental Testing	1	2025	4	2025
Test & Evaluation: SOA FY25 Operational Testing	1	2025	4	2025
Test & Evaluation: SOA FY25 Flight Clearance Testing	1	2025	4	2025
Test & Evaluation: SOA FY26 Developmental Testing	1	2026	4	2026
Test & Evaluation: SOA FY26 Operational Testing	1	2026	4	2026
Test & Evaluation: SOA FY26 Flight Clearance Testing	1	2026	4	2026
Test & Evaluation: SOA FY27 Developmental Testing	1	2027	4	2027
Test & Evaluation: SOA FY27 Operational Testing	1	2027	4	2027
Test & Evaluation: SOA FY27 Flight Clearance Testing	1	2027	4	2027
Test & Evaluation: SOA FY28 Developmental Testing	1	2028	4	2028
Test & Evaluation: SOA FY28 Operational Testing	1	2028	4	2028
Test & Evaluation: SOA FY28 Flight Clearance Testing	1	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 9099 / Physiological Episodes			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9099: Physiological Episodes	4.805	3.059	7.480	7.828	-	7.828	6.958	5.402	5.243	5.349	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Proj 9099 PHYSIOLOGICAL EPISODES: Physiological Episodes includes Physiological Monitoring (PhysMon) and Helmet Mask Regulator (HMR). PhysMon: This program provides funding to assure pilot performance integrity by developing and fielding a system that monitors pilot physiological parameters and warns of state of health or performance degradation that may result in loss of consciousness or the ability to safely conduct flight. There are several solutions undergoing evaluation. HMR: An improved helmet mask/regulator system is required to mitigate PE. This program determines what improvements are needed and develops the material solution. Through RCCA, it has been determined that measuring the gas contents and pressure within the oxygen mask is a key part to understanding a sub-set of physiological conditions of Naval Aviators in flight. The integration of a single piece of hardware containing an oxygen sensor, a carbon dioxide sensor, and a mask pressure sensor into the Navy's existing MBU-23 oxygen mask assembly to collect data will inform a helmet mask/regulator system redesign, and improvements covered under this issue. The closeout of RCCA action items is paramount to the Naval Aviation Enterprise's efforts in mitigating PE, restoring confidence in the aircraft, and most importantly, keeping our USN and USMC aircrew safe.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Physiological Episodes  Articles:								3.059	7.480	7.828	0.000	7.828
								-	-	-	-	-
FY 2023 Plans: PhysMon: Award integration contract and begin development of integrated system. Award LRIP 2 production contract. HMR: Award EMD contract for an improved mask, regulator, and helmet system to comply with the RCCA recommendations and mitigate Physiological Episodes.												
FY 2024 Base Plans: PhysMon: Hold PMR, award LRIP 3 production contract, and begin delivery of LRIP 2 units. HMR: Hold PMR, begin delivery of test assets, hold TRR, and start lab/ground and flight testing.												
FY 2024 OCO Plans: N/A												
FY 2023 to FY 2024 Increase/Decrease Statement:												

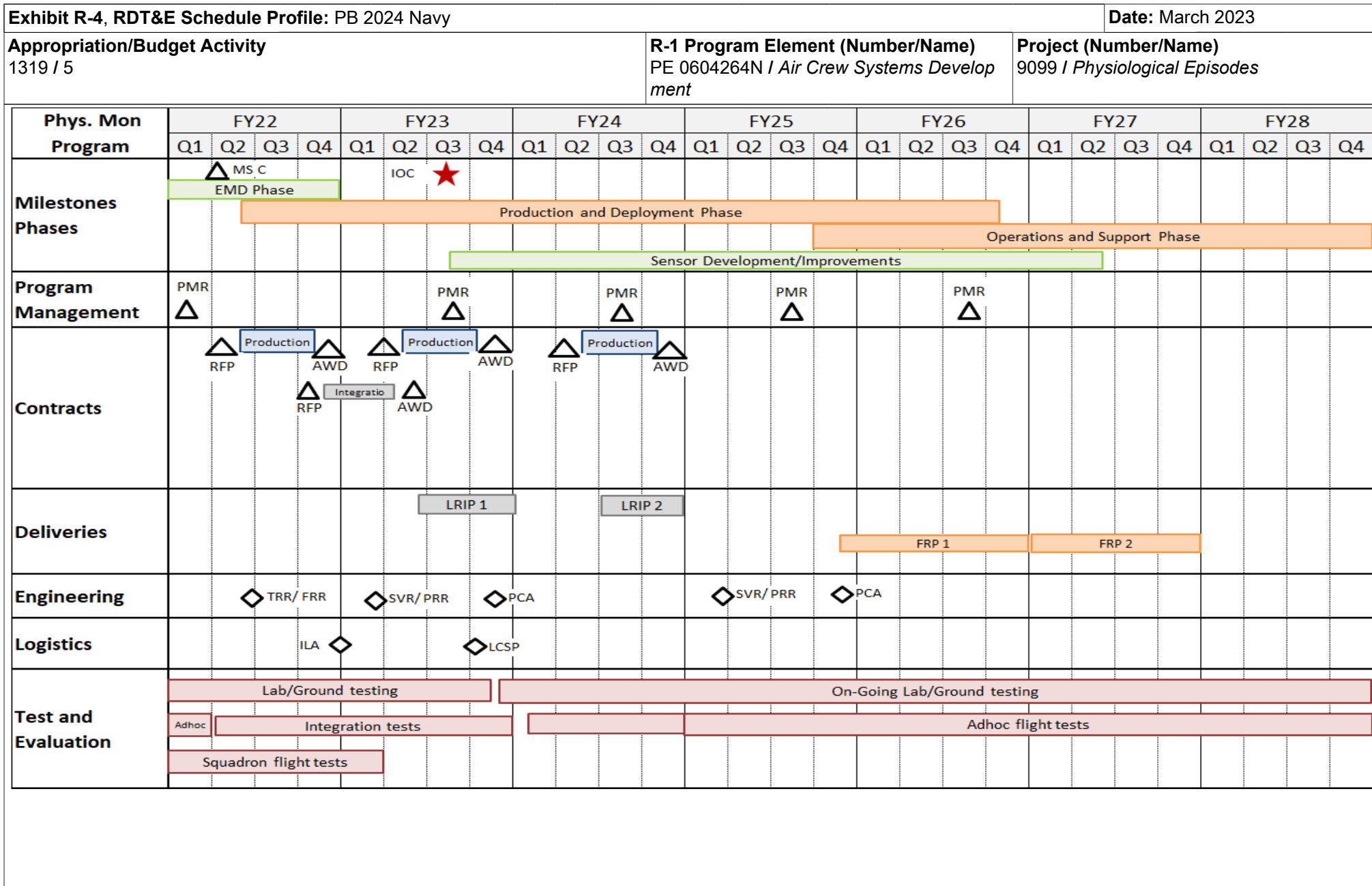
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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 9099 / Physiological Episodes						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase from FY23 to FY24 is due to changes in support and working capital fund rates.														
Accomplishments/Planned Programs Subtotals										3.059	7.480	7.828	0.000	7.828
C. Other Program Funding Summary (\$ in Millions)														
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost			
• OPN/4268: Aviation Life Support	3.600	4.300	9.900	-	9.900	9.987	21.818	25.550	21.850	Continuing	Continuing			
Remarks														
Note: Physiological Monitoring and Helmet Mask Regulator is only a portion of Aviation Life Support, LI 4268.														
D. Acquisition Strategy														
PhysMon: Of the six prototyping contracts awarded using Other Transaction Authority (OTA) through the Army Contracting Command (ACC NJ) via the Defense Innovation Unit (DIU), four OTAs remain as candidates for integration and production follow-on; strategy will depend on further prototyping results.														
HMR: An EMD contract will succeed the Cooperative Research and Development Agreement (CRADA) with the purpose of developing an in-mask sensor as part of the new helmet/mask/regulator program.														

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 9099 / Physiological Episodes					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Eng Physiological Episodes	WR	Various : Various	0.207	0.146	Dec 2021	0.220	Dec 2022	0.243	Dec 2023	-		0.243	Continuing	Continuing	Continuing
Systems Eng Physiological Episodes	WR	NAWCAD : Patuxent River, MD	4.598	2.468	Nov 2021	2.202	Nov 2022	2.673	Nov 2023	-		2.673	Continuing	Continuing	Continuing
Systems Eng Physiological Episodes	C/CPFF	TBD : TBD	0.000	0.000		4.760	Feb 2023	4.312	Aug 2024	-		4.312	0.000	9.072	-
Subtotal			4.805	2.614		7.182		7.228		-		7.228	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	0.000	0.445	Nov 2021	0.298	Nov 2022	0.600	Nov 2023	-		0.600	Continuing	Continuing	Continuing
Subtotal			0.000	0.445		0.298		0.600		-		0.600	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4.805	3.059		7.480		7.828		-		7.828	Continuing	Continuing	N/A
Remarks															

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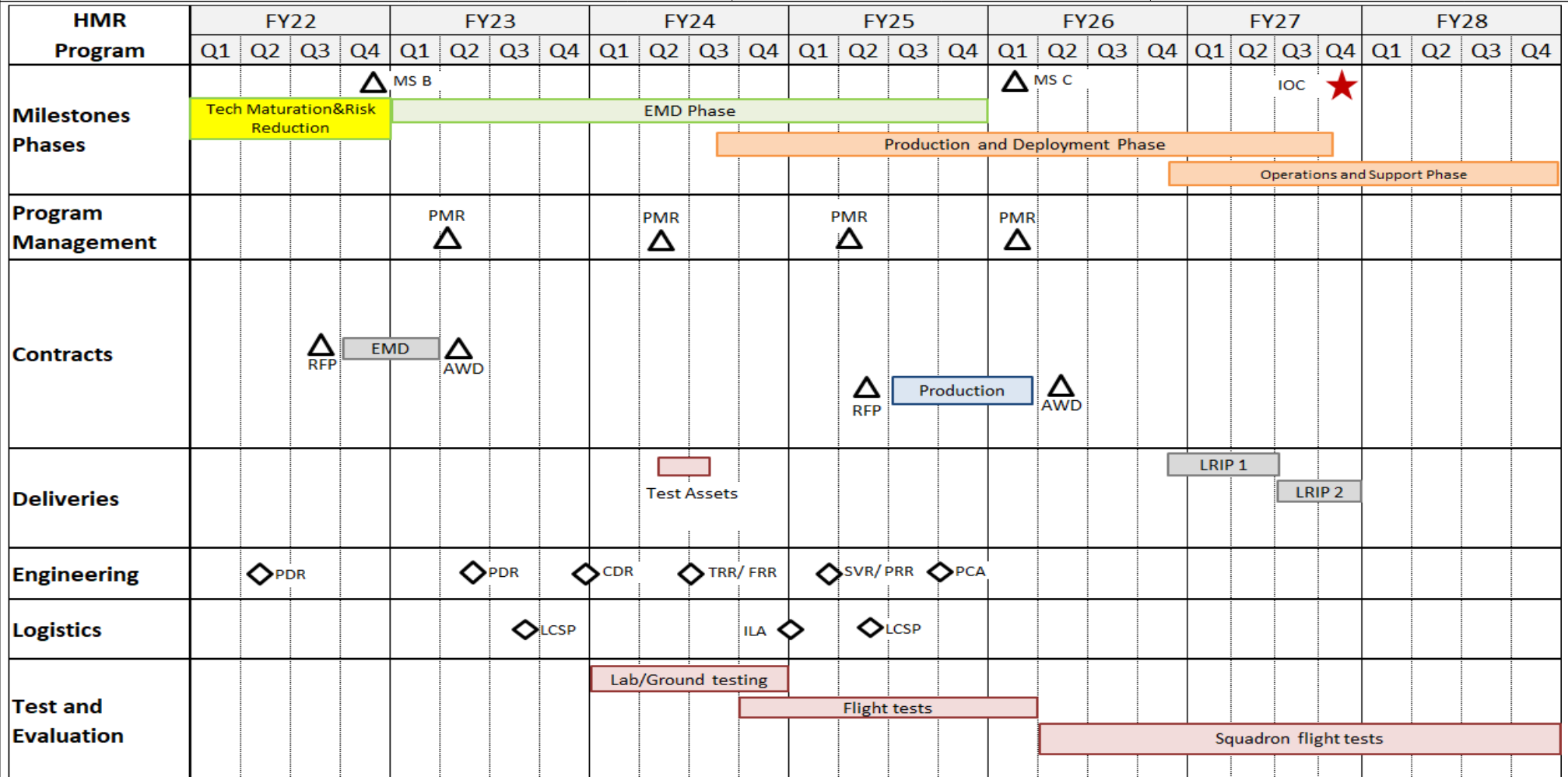
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604264N / Air Crew Systems Development

Project (Number/Name)  
9099 / Physiological Episodes





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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

## Project (Number/Name)

9099 / Physiological Episodes

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Physiological Monitoring</b>				
Acquisition Milestones: Milestones: PM Milestone C	2	2022	2	2022
Acquisition Milestones: Milestones: PM IOC	3	2023	3	2023
Acquisition Milestones: Phases: PM Engineering & Manufacturing Development Phase	1	2022	4	2022
Acquisition Milestones: Phases: PM Production & Deployment Phase	2	2022	4	2026
Acquisition Milestones: Phases: PM Operations & Support Phase	3	2025	4	2028
System Development: Reviews: PM TRR/FRR	2	2022	2	2022
System Development: Reviews: PM SVR/PRR 1	1	2023	1	2023
System Development: Reviews: PM SVR/PRR 2	1	2025	1	2025
System Development: Reviews: PM PCA 1	4	2023	4	2023
System Development: Reviews: PM PCA 2	4	2025	4	2025
Test & Evaluation: PM Lab/Ground Testing	1	2022	4	2023
Test & Evaluation: PM Adhoc Flight Tests	1	2022	1	2022
Test & Evaluation: PM Squadron Flight Tests	1	2022	1	2023
Test & Evaluation: PM Integration Tests	2	2022	4	2023
Test & Evaluation: PM Ongoing Lab/Ground Testing	4	2023	4	2028
Test & Evaluation: PM Ongoing Adhoc Flight Tests	1	2024	4	2028
Production Milestones: Contract Award: PM Integration Contract Award	2	2023	2	2023
Production Milestones: Contract Award: PM Production Contract Award 1	4	2022	4	2022
Production Milestones: Contract Award: PM Production Contract Award 2	4	2023	4	2023
Production Milestones: Contract Award: PM Production Contract Award 3	4	2024	4	2024
Deliveries: PM LRIP 1 (OPN)	2	2023	1	2024

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

## Project (Number/Name)

9099 / Physiological Episodes

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: PM LRIP 2 (OPN)	3	2024	4	2024
Deliveries: PM FRP 1	4	2025	4	2026
Deliveries: PM FRP 2	1	2027	4	2027
<b>Helmet and Mask Regulator Program</b>				
Acquisition Milestones: Milestones: HMR Milestone B	4	2022	4	2022
Acquisition Milestones: Milestones: HMR Milestone C	1	2026	1	2026
Acquisition Milestones: Milestones: HMR IOC	4	2027	4	2027
Acquisition Milestones: Phases: HMR Tech Maturation & Risk Reduction Phase	1	2022	4	2022
Acquisition Milestones: Phases: HMR Engineering & Manufacturing Development Phase	1	2023	4	2025
Acquisition Milestones: Phases: HMR Production & Deployment Phase	3	2024	4	2027
Acquisition Milestones: Phases: HMR Operations & Support Phase	4	2026	4	2028
System Development: Reviews: HMR PDR 1	2	2022	2	2022
System Development: Reviews: HMR PDR 2	2	2023	2	2023
System Development: Reviews: HMR CDR	4	2023	4	2023
System Development: Reviews: HMR TRR/FRR	3	2024	3	2024
System Development: Reviews: HMR SVR/PRR	1	2025	1	2025
System Development: Reviews: HMR PCA	4	2025	4	2025
Test & Evaluation: HMR Lab/Ground Testing	1	2024	4	2024
Test & Evaluation: HMR Flight Tests	4	2024	1	2026
Test & Evaluation: HMR Squadron Flight Tests	2	2026	4	2028
Production Milestones: Contract Award: HMR EMD Contract Award	2	2023	2	2023
Production Milestones: Contract Award: HMR Production Contract Award	2	2026	2	2026
Deliveries: HMR Test Assets	2	2024	3	2024
Deliveries: HMR LRIP 1 (OPN)	4	2026	3	2027
Deliveries: HMR LRIP 2 (OPN)	3	2027	4	2027

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604264N / Air Crew Systems Development				<b>Project (Number/Name)</b> 9999 / Congressional Adds			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: Congressional Adds	0.000	0.000	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Congressional Add: RW/TR Survival Vest Improvement Program

The RW/TR Aircrew Vest System is required to be worn on over-land and over-water missions. It provides flotation, mobile aircrew restraint, hoisting capability, and serves as carriage for survival equipment and ballistic projectile armor. This funding provides for an improved RW/TR Aircrew Survival Vest to address safety and performance issues with the currently fielded solution. The new Aircrew Survival Vest System will improve the safety and performance of flight crews by providing improvements to flotation, mobility, thermal burden, emergency egress survivability, and overall weight and bulk.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Congressional Add:</b> Aircrew systems development	0.000	7.000
<b>FY 2022 Accomplishments:</b> N/A		
<b>FY 2023 Plans:</b> Perform System Requirements Review, evaluate potential design changes to existing DoD system components, perform developmental testing, award contract to procure additional test assets		
<b>Congressional Adds Subtotals</b>	0.000	7.000

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0604264N/0606: Air Crew Systems Development	0.000	0.000	1.053	-	1.053	0.000	0.000	0.000	0.000	0.000	1.053

**Remarks**

FY23 RDTE funding in support of Vest Program received through Congressional Add and budgeted FY24 RDTE funding received under PE 0604264N/PU 0606. FY24-27 OPN funding to support this program is currently being allocated.

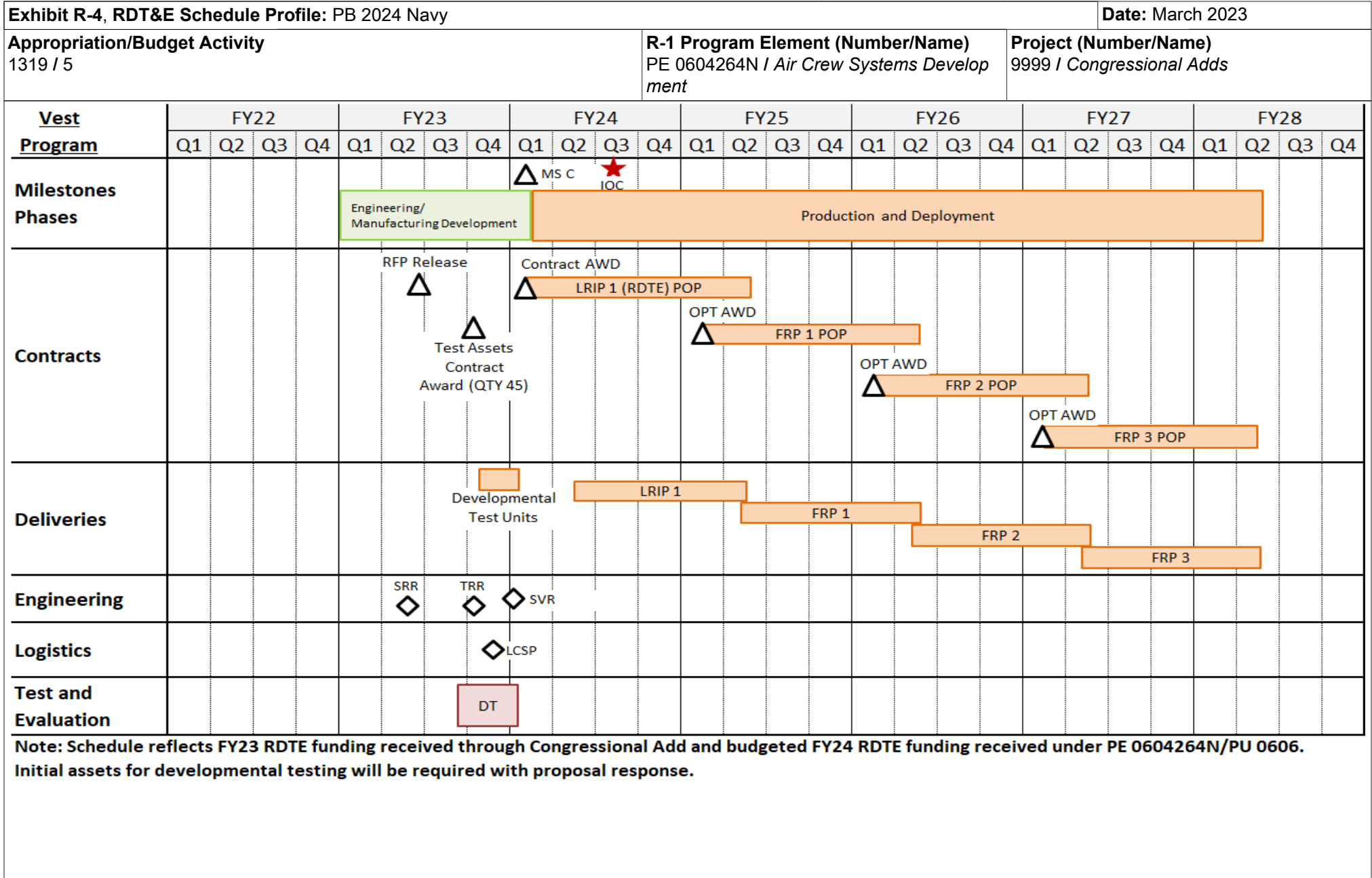
**D. Acquisition Strategy**

Commercial as well as DoD products will be evaluated in order to field a safe and effective system as soon as practical. The acquisition strategy includes competition for commercial solutions, the use of partnership intermediary agreements to improve existing DoD component designs, and the application of streamlining initiatives.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development						Project (Number/Name) 9999 / Congressional Adds			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Eng Vest Program	MIPR	USAF/AFMC : Dayton, Ohio	0.000	0.000		2.385	Jun 2023	0.000		-		0.000	0.000	2.385	-
Systems Eng Vest Program	WR	NAWCAD : Patuxent River, MD	0.000	0.000		2.747	Mar 2023	0.000		-		0.000	0.000	2.747	-
Systems Eng Vest Program	Various	Various : Various	0.000	0.000		1.312	Dec 2023	0.000		-		0.000	0.000	1.312	-
Subtotal			0.000	0.000		6.444		0.000		-		0.000	0.000	6.444	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.556	Mar 2023	0.000		-		0.000	0.000	0.556	-
Subtotal			0.000	0.000		0.556		0.000		-		0.000	0.000	0.556	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		7.000		0.000		-		0.000	0.000	7.000	N/A
Remarks															

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems Development

## Project (Number/Name)

9999 / Congressional Adds

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Vest Program</b>				
Acquisition Milestones: Milestones: Vest Milestone C	1	2024	1	2024
Acquisition Milestones: Milestones: Vest IOC	3	2024	3	2024
Acquisition Milestones: Phases: Vest Engineering & Manufacturing Development Phase	1	2023	1	2024
Acquisition Milestones: Phases: Vest Production & Deployment Phase	1	2024	2	2028
Systems Development: Reviews: Vest SRR	2	2023	2	2023
Systems Development: Reviews: Vest TRR	4	2023	4	2023
Systems Development: Reviews: Vest SVR	1	2024	1	2024
Test and Evaluation: Vest Developmental Testing	3	2023	1	2024
Production Milestones: Contract Awards: Vest Test Assets Contract Award	4	2023	4	2023
Production Milestones: Contract Awards: Vest LRIP 1 (RDTE) Contract Award	1	2024	1	2024
Production Milestones: Contract Awards: Vest FRP 1 (Option) Contract Award	1	2025	1	2025
Production Milestones: Contract Awards: Vest FRP 2 (Option) Contract Award	1	2026	1	2026
Production Milestones: Contract Awards: Vest FRP 3 (Option) Contract Award	1	2027	1	2027
Deliveries: Vest Developmental Test Units Delivery	4	2023	1	2024
Deliveries: Vest LRIP 1 Delivery	2	2024	2	2025
Deliveries: Vest FRP 1 Delivery	2	2025	2	2026
Deliveries: Vest FRP 2 Delivery	2	2026	2	2027
Deliveries: Vest FRP 3 Delivery	2	2027	2	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	2,487.787	58.692	116.589	172.507	-	172.507	244.741	149.179	109.740	142.615	117.780	3,599.630
3063: EA-18G Development	2,487.787	58.692	116.589	172.507	-	172.507	244.741	149.179	109.740	142.615	117.780	3,599.630
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 378												
A. Mission Description and Budget Item Justification												
<p>The EA-18G Growler is the primary Airborne Electronic Attack (AEA) platform supporting the Joint Force and the sole tactical AEA aircraft in the DoD inventory. The Growler is an asymmetric force multiplier that increases the survivability and lethality of the Joint Force within a non-permissive environment, while enabling all-domain superiority for the Electromagnetic Spectrum (EMS). The centrality of EMS dominance to the CNO's Maritime Strategy further necessitates EA-18G modernization as a strategic pursuit to secure EMS superiority for the Navy's Carrier Strike and Joint Expeditionary operations. Due to the rapid advancements of the adversary's capabilities, the EA-18G will be called upon in future engagements to operate at increased ranges from the threat which far exceed the current capability to effectively deliver kinetic and non-kinetic effects. The Growler Block II is a foundational spiral upgrade that will implement the incremental and innovative capability improvements required for Naval Aviation to regain and sustain an advantage in the EMS until the EA-18G replacement.</p>												
<p>The onboard sensors of the EA-18G, namely the ALQ-218, require improved sensitivity and processing to detect, identify, and locate advanced complex threats at longer ranges. The ALQ-218 Airborne Electronic Attack Systems Enhancement (ASE) is a combination hardware/software upgrade that provides incremental capability improvement and enables the transition to Growler Block II. An Electronic Attack Unit (EAU) upgrade, coupled with the Reactive Electronic Attack Measures (REAM) capability greatly enhances the EA-18G's ability to autonomously process and respond to unknown signals in an extremely dense EMS environment. Capabilities of the EA-18G weapon system and ancillary equipment can be upgraded to accommodate and incorporate new or enhanced weapons as well as advances in technology to respond effectively to emerging and future threats. EA-18G "Flight Plan" spiral capability development is critical to the baseline of the EA-18G next generation mission system capability and to maintaining tactical relevance in support of the Air Wing of the Future.</p>												
<p>Development continues for design and integration of avionics systems, integration of Jamming Techniques Optimization (JATO) improvements, evolutionary software upgrades via the System Configuration Set (SCS) block builds and Agile software developments, as well as related testing. Through FY2028, EA-18G Growler efforts will focus on developing quality components, with concurrent recurring modification; continuing advanced development engineering; and improving reliability and maintainability. These collective efforts will enhance availability of critical assets to the fleet and maximize lifetime total cost of ownership benefits.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604269N / EA-18 Squadrons			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	59.674	116.589	100.765	-	100.765
Current President's Budget	58.692	116.589	172.507	-	172.507
Total Adjustments	-0.982	0.000	71.742	-	71.742
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.982	0.000			
• Program Adjustments	0.000	0.000	-1.454	-	-1.454
• Rate/Misc Adjustments	0.000	0.000	73.196	-	73.196
<b>Change Summary Explanation</b>					
Technical: Not Applicable					
Cost: The Department added FY2024 funding in the amount of \$75.000 million for EA-18G Growler Block II Beowulf efforts. The FY2024 funding request was decreased by \$3.258 million for miscellaneous adjustments.					
Schedule: Not applicable.					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons				Project (Number/Name) 3063 / EA-18G Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3063: EA-18G Development	2,487.787	58.692	116.589	172.507	-	172.507	244.741	149.179	109.740	142.615	117.780	3,599.630
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 378												

**A. Mission Description and Budget Item Justification**

The EA-18G development program upgrades the Airborne Electronic Attack (AEA) capability to detect, identify, locate and suppress hostile emitters; provides enhanced connectivity to National, Theater and Strike assets; and provides passive organic precision emitter targeting for employment of precision strike weapons and onboard suppression weapons (High-speed Anti-Radiation Missile family) to fulfill operational requirements. The performance of the aircraft is compatible with the primary strike/ fighter aircraft projected to be in the inventory, allowing it to be fully integrated into specific strike packages.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> EA-18G AEA System Enhancements (ASE) and Integrated Capability Package (ICP-3)	25.570	13.732	9.137	0.000	9.137
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The EA-18G can operate autonomously or as a major node in a network-centric operation and is being designed to perform a range of Electronic Warfare/Electronic Attack functions either simultaneously or independently. Funding will be utilized for design and integration of avionics systems into the EA-18G.					
<b>FY 2023 Plans:</b> Continuation of the H16 and H18 plan with OT activities and integration of improvements developed through the JATO teams. Work includes engineering, flight hours and test efforts for ALQ-218 ASE upgrade requirements to improve low band geolocation, signal detection, and identification capabilities necessary for complex emitter geo-location and identification. Funds will support a combined hardware/software solution to address evolving threats and provide significant capability enhancements to the ALQ-218, such as the LBDR and capacity improvements. To incorporate those ALQ-218 ASE upgrades with the SCS fleet releases on EA-18G, FY23 funding supports engineering, system integration, H-18 SCS development, Agile software development, Operational Flight Program re-hosting, test planning, materials, lab equipment, and lab/flight testing. Funding also continues to support development (hardware and software) of test and integration efforts for H16 & H18 SCS builds and Agile software developments, such as: DTP-N capabilities, TDOA, NCCT and Wingman Compatibility improvements. Funding will support the final incorporation of LBDR under the H18 build.					
<b>FY 2024 Base Plans:</b> Continuation of the H18 plans, with OT activities and integration of improvements developed through the JATO teams. Work includes engineering, flight hours and test efforts for ALQ-218 ASE upgrade requirements to					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons		Project (Number/Name) 3063 / EA-18G Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
improve low band geolocation, signal detection, and identification capabilities necessary for complex emitter geo-location and identification. Funds will support a combined hardware/software solution to address evolving threats and provide significant capability enhancements to the ALQ-218, such as the LBDR and capacity improvements. To incorporate those ALQ-218 ASE upgrades with the SCS fleet releases on EA-18G, FY24 funding supports engineering, system integration, H-18 SCS development, Operational Flight Program re-hosting, test planning, materials, lab equipment, and lab/flight testing. Funding also continues to support development (hardware and software) of test and integration efforts for H18 SCS and Agile software builds, such as DTP-N capabilities, TDOA, NCCT and Wingman Compatibility improvements. Funding will support the final incorporation of LBDR under the H18 build.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY2023 to FY2024 of \$4.595M due to completion of H16-related test activities for H16/GCM+, with the remainder of AEA testing shifting to H18.						
<b>Title:</b> EA-18G System Configuration Set (SCS) Development & Integration  <b>Articles:</b>  <b>Description:</b> Enhancements to improve the EA-18G Airborne Electronic Attack capabilities are predominantly realized through evolutionary software upgrades. Funding will be utilized to develop improved software capabilities for the EA-18G through SCS block and Agile software updates.  <b>FY 2023 Plans:</b> Continue SCS block software development and integration for the EA-18G, specifically SCS H18 and H20 builds. Funding also continues to support engineering efforts for integration of active and passive kill chain capabilities and sensors. Funding for Multi Source Integration algorithm and sensor developmental efforts also increase for test activities for ongoing modeling and simulation upgrades such as Net Enabled Weapon Controller Interface Model interoperability software and equipment, and Live Virtual Constructive interoperability.  <b>FY 2024 Base Plans:</b> Continue SCS block and Agile software development and integration for the EA-18G, specifically SCS and Agile software builds supporting H18 and H20. Funding also continues to support engineering efforts for integration of active and passive kill chain capabilities and sensors. Funding for Multi Source Integration algorithm and sensor developmental efforts also increase for test activities for ongoing modeling and simulation upgrades such		4.542 -	5.305 -	2.000 -	0.000 -	2.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons	Project (Number/Name) 3063 / EA-18G Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
as Net Enabled Weapon Controller Interface Model interoperability software and equipment, and Live Virtual Constructive interoperability. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY2023 to FY2024 of \$3.305 million due to a ramp-down of H18 System Configuration Set (SCS) efforts as the system nears fleet release.					
<b>Title:</b> EA-18G Flight Plan Engineering <div>Articles:</div> <b>Description:</b> EA-18G "Flight Plan" spiral capability development is critical to the evolution of the Growler next generation mission system capability. Funding will support the development, test and integration efforts required to maintain tactical relevance in support of Navy Aviation Plan 2030. <b>FY 2023 Plans:</b> Continue Flight Plan Engineering efforts to include EA-18G improvements necessary for Growler relevance and tactical supremacy; Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements, beyond line of sight communications and enhance EA-18G Cooperative Engagement Capability. Conduct dedicated Low Band Dedicated Receiver (LBDR) and NGJ Mid Band flight testing events. <b>FY 2024 Base Plans:</b> Continue Flight Plan Engineering efforts to include EA-18G improvements necessary for Growler relevance and tactical supremacy; Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements, beyond line of sight communications and enhance EA-18G Cooperative Engagement Capability. Conduct dedicated Low Band Dedicated Receiver (LBDR) and NGJ Mid Band flight testing events. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY2023 to FY2024 of \$1.236 million due to completion of H16 Growler Capability Modification (GCM and GCM+) test events.	15.014 -	35.311 -	34.075 -	0.000 -	34.075 -
<b>Title:</b> EA-18G Growler Block II	13.566	62.241	127.295	0.000	127.295

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons		Project (Number/Name) 3063 / EA-18G Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:		-	-	-	-	-
<p><b>Description:</b> The Growler Block II (GB2) upgrade will implement innovative capability improvements required for Naval Aviation to regain and sustain an advantage in the EMS until the EA-18G replacement. GB2 is the first major upgrade to the Growler weapons system since IOC in 2009. GB2 will utilize a phased approach for spiral development of AEA capabilities. Phase 1 will include an upgraded Next Generation Electronic Attack Unit (NGEAU) and Reactive Electronic Attack Measures (REAM). The NGEAU will support an Open Mission Systems (OMS) processor architecture, include Multi Level Security (MLS), and include a Multi-Tier Resource Management (MTRM) framework. Additionally, the NGEAU addresses Diminishing Manufacturing Sources and Material Shortages (DMSMS) concerns with the current EAU. REAM uses Cognitive Electronic Warfare machine learning algorithms to provide the warfighter with capabilities to counter advanced Integrated Air Defense System (IADS) by detecting and identifying unknown Complex Emitters. GB2 Phase 2, Beowulf, will include an advanced Multi-Function Array (MFA) in the Inboard Leading Edge Flaps (ILEF) augmenting the ALQ-218 functionality and capability. The GB2 MFA serves as technology development and risk reduction for the incorporation of MFAs on multiple future platforms. The Office of Naval Research (ONR) Future Naval Capability (FNC) Electromagnetic Maneuver Warfare Resource Allocation Management (EMW RAM) is a software algorithm development planned for GB2 implementation that will provide an enhanced communication, sensor, and jamming resource management capability. GB2 modernization and added capability aligns to the overall Growler roadmap.</p> <p><b>FY 2023 Plans:</b> Continue GBII Phase 1 from post CDR development towards a Test Readiness Review (TRR) and begin lab test and integration of Engineering and Manufacturing Development (EMD) units of the upgraded EAU with REAM capability. Initial GBII Phase 2 efforts will include a prototype of the advanced Multi-Function Array (MFA) in the Inboard Leading Edge Flap (ILEF) and EMW RAM software development targeted for H22 integration and fielding.</p> <p><b>FY 2024 Base Plans:</b> Complete developmental testing and integration of GB2 Phase 1, in preparation for Operational Test Readiness Review (OTRR), Initial Operational Test and Evaluation (IOT&amp;E), Low Rate Initial Production (LRIP), and fielding. Continue GB2 Phase 2 efforts to include early development and integration of the Beowulf Inboard Leading Edge Flap (ILEF) Multi-Function Array and Sensor Control Unit (SCU). Continue maturation of the EMW RAM software development targeted for GB2 spiral integration and fielding.</p> <p><b>FY 2024 OCO Plans:</b></p>						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604269N / EA-18 Squadrons	<b>Project (Number/Name)</b> 3063 / EA-18G Development	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A					
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase from FY2023 to FY2024 of \$65.054 million due to funding of Growler Block II Phase 2 Beowulf Multi-Function Array (MFA) development, integration, and test efforts. Beowulf MFA classification and development funding previously existed in an enhanced security environment prior to FY24.					
<b>Accomplishments/Planned Programs Subtotals</b>	58.692	116.589	172.507	0.000	172.507

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN/0505: F-18E/F and EA-18G Modernization and Sustainment	445.721	552.849	605.416	-	605.416	531.235	573.367	592.884	771.385	5,457.277	9,916.539
• RDTEN/1662: F/A-18 Improvement	134.252	173.710	323.420	-	323.420	320.717	278.449	225.610	231.078	464.249	6,911.302

**Remarks**

**D. Acquisition Strategy**

The program achieved Full Rate Production in November 2009. Studies are underway for Growler Block II capabilities and those efforts will be integrated into the overall EA-18G plan/roadmap as resources permit. EA-18G software upgrades are incrementally developed, integrated and fielded. Software development and integration are coordinated efforts between government activities and industry partners to field capability upgrades to the EA-18G fleet.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons				Project (Number/Name) 3063 / EA-18G Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering (ASE/ICP-3)	Various	Various : Various	2.470	3.580	Dec 2021	0.000		4.449	Dec 2023	-		4.449	0.615	11.114	-
System Engineering (ASE / ICP3 (ALQ-218))	WR	NAWCWD : Pt. Mugu, CA	90.831	0.566	Dec 2021	0.000		0.000		-		0.000	0.000	91.397	-
System Engineering (ASE / ICP3 (ALQ-218))	C/IDIQ	Northrop Grumman : Various	115.845	2.880	Feb 2022	0.361	Apr 2023	0.000		-		0.000	0.000	119.086	119.086
Systems Engineering (Flight Plan)	WR	ONR : Arlington, VA	0.000	0.000	Nov 2021	1.800	Nov 2022	0.000		-		0.000	0.000	1.800	-
Systems Engineering (Flight Plan)	Various	Various : Various	0.000	5.077	Dec 2021	23.800	Mar 2023	24.204	Dec 2023	-		24.204	82.045	135.126	-
Systems Engineering (ASE / ICP3 (DTP-N))	WR	SPAWAR : Various	1.990	1.025	Apr 2022	0.000		0.000		-		0.000	0.000	3.015	-
Software Development (ASE / ICP3 (ALQ-218))	WR	NAWCWD : China Lake, CA	38.532	2.080	Nov 2021	0.000		0.000		-		0.000	0.000	40.612	-
Software Development (ASE / ICP3 (ALQ-218))	C/IDIQ	Northrop Grumman : Various	18.158	9.857	Feb 2022	4.783	Dec 2022	0.000		-		0.000	0.000	32.798	32.798
Primary Hardware Development (ALQ-218 ASE)	C/CPFF	Boeing : St. Louis, MO	2.919	0.000		0.000		0.000		-		0.000	0.000	2.919	2.919
SCS Software Development & Integration	C/IDIQ	Northrop Grumman : Various	41.935	0.923	Dec 2021	0.085	Dec 2022	0.000		-		0.000	0.000	42.943	42.943
SCS Software Development & Integration	WR	NAWCWD : China Lake, CA	1.182	0.591	Dec 2021	0.061	Dec 2022	0.000		-		0.000	0.000	1.834	-
SCS Software Development & Integration	WR	NAWCWD : Pt. Mugu, CA	3.494	0.157	Dec 2021	5.159	Dec 2022	0.000		-		0.000	0.000	8.810	-
Primary Hardware Development (Growler Block 2/REAM)	WR	NAWCWD : China Lake, CA	11.263	1.837	Dec 2021	9.435	Nov 2022	21.467	Nov 2023	-		21.467	69.687	113.689	-
Primary Hardware Development (Growler Block 2/REAM)	WR	NAWCWD : Pt. Mugu, CA	4.433	5.617	Nov 2021	11.055	Nov 2022	12.375	Nov 2023	-		12.375	51.173	84.653	-
Primary Hardware Development (Growler Block 2/REAM)	WR	NAWCAD : Pax River, MD	6.102	1.565	Nov 2021	15.661	Nov 2022	12.257	Nov 2023	-		12.257	69.110	104.695	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604269N / EA-18 Squadrons	<b>Project (Number/Name)</b> 3063 / EA-18G Development
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development (Growler Block 2/REAM)	WR	NSWC : Crane, IN	0.000	0.000		0.000		7.156	Nov 2023	-		7.156	50.885	58.041	-
Primary Hardware Development (Growler Block 2/REAM)	C/IDIQ	Boeing : St. Louis, MO	89.914	2.976	Dec 2021	22.922	Dec 2022	55.404	Dec 2023	-		55.404	270.886	442.102	442.127
Systems Engineering (Growler Block 2/REAM)	Various	Various : Various	0.000	0.000		0.138	Dec 2022	0.000		-		0.000	0.000	0.138	-
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	1,397.702	0.000		0.000		0.000		-		0.000	0.000	1,397.702	-
<b>Subtotal</b>			1,826.770	38.731		95.260		137.312		-		137.312	594.401	2,692.474	N/A

**Remarks**

Increase from FY2023 to FY2024 due to Growler Block II Phase 2 development and integration efforts to include Beowulf.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SCS Development Support (ASE/ICP-3 (ALQ-218))	WR	NAWCWD : Pt. Mugu	8.867	2.871	Dec 2021	2.016	Dec 2022	2.000	Dec 2023	-		2.000	10.181	25.935	-
SCS Development & Integration Support	C/IDIQ	Northrop Grumman : Various	0.000	0.000		0.600	Jan 2023	0.000		-		0.000	0.000	0.600	0.600
Development Support (ASE/ICP-3 (ALQ-218))	WR	NAWCAD : Patuxent River, MD	5.745	2.665	Dec 2021	1.066	Dec 2022	2.693	Dec 2023	-		2.693	15.917	28.086	-
Development Support (Flight Plan)	Various	Various : Various	39.568	1.530	Dec 2021	0.421	Dec 2022	1.907	Dec 2023	-		1.907	10.453	53.879	-
Development Support (Growler Block 2)	WR	NSWC : Crane	3.413	1.571	Nov 2021	2.970	Nov 2022	18.294	Nov 2023	-		18.294	49.325	75.573	-
Development Support (ASE/ICP-3 (DTP-N))	WR	NAWCWD : China Lake, CA	15.123	0.000		0.000		0.000		-		0.000	0.000	15.123	-
Development Support (ASE/ICP-3 (DTP-N))	Various	NSMA : Various	8.960	1.130	Dec 2021	2.250	Dec 2022	1.592	Dec 2023	-		1.592	3.280	17.212	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons				Project (Number/Name) 3063 / EA-18G Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CDS Accrediation (DTP-N)	Various	Various : Various	0.000	0.000		0.752	Nov 2022	0.000		-		0.000	0.000	0.752	-
Technical Data (Flight Plan)	Various	Various : Various	2.517	0.596	Dec 2021	0.000		0.635	Dec 2023	-		0.635	4.446	8.194	-
Prior Year Support no longer funded in FYDP	Various	Various : Various	212.073	0.000		0.000		0.000		-		0.000	0.000	212.073	-
Subtotal			296.266	10.363		10.075		27.121		-		27.121	93.602	437.427	N/A
Remarks															
Increase from FY2023 to FY2024 due to increased support to Flight Plan Engineering for beyond line of sight communication and Beowulf development efforts.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	NAWCWD : China Lake, CA	17.025	0.000		0.000		3.282	Dec 2023	-		3.282	0.000	20.307	-
Operational Test & Evaluation (OT&E)	WR	COTF : China Lake, CA	0.790	2.260	Dec 2021	3.551	Dec 2022	0.000		-		0.000	29.125	35.726	-
Operational Test & Evaluation (OT&E)	WR	NAWCAD : Patuxent River, MD	25.612	4.361	Dec 2021	5.844	Dec 2022	2.870	Dec 2023	-		2.870	34.931	73.618	-
Operational Test & Evaluation (OT&E)	WR	Various : Various	0.344	1.000	Jan 2022	0.000		0.000		-		0.000	0.000	1.344	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	Various	Various : Various	197.338	0.000		0.000		0.000		-		0.000	0.000	197.338	-
Subtotal			241.109	7.621		9.395		6.152		-		6.152	64.056	328.333	N/A
Remarks															
Decrease from FY2023 to FY2024 due to completion of H16 operational test events for Low Band Dedicated Receiver (LBDR).															

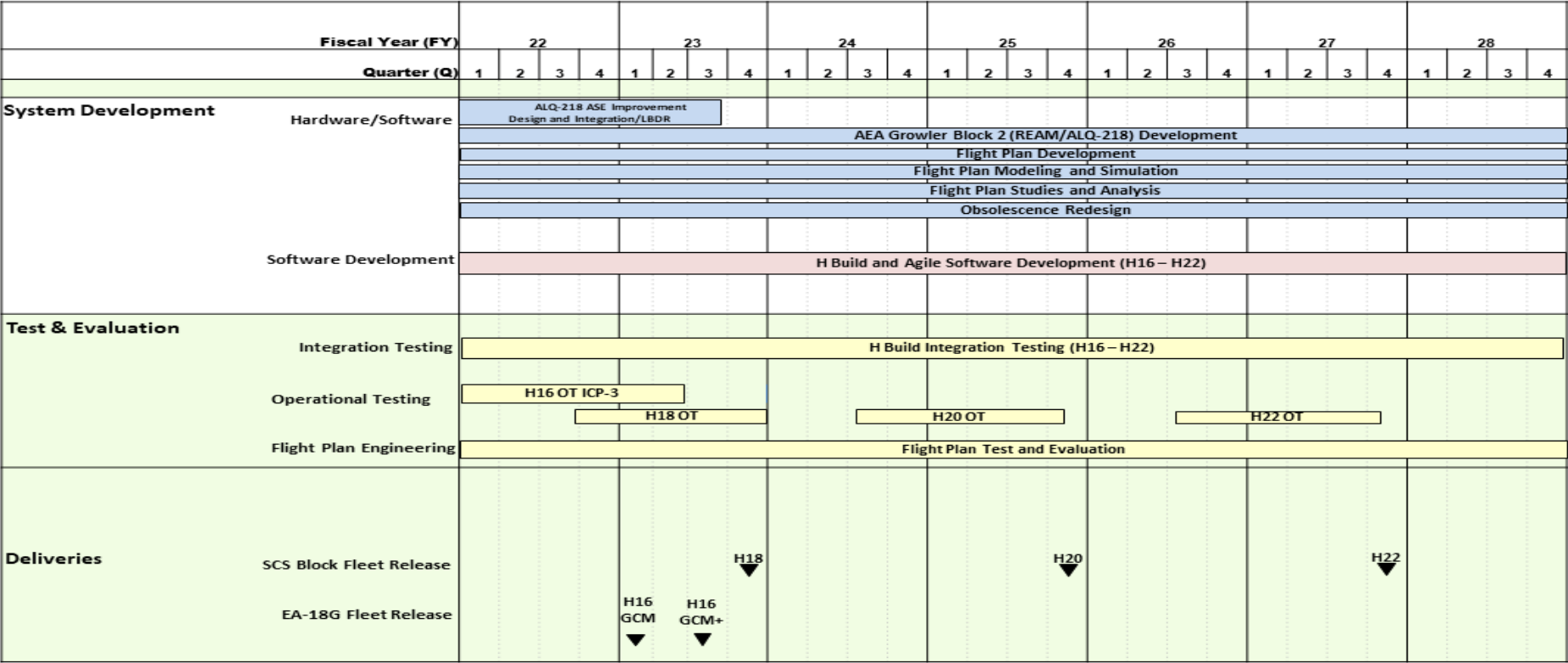


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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons				Project (Number/Name) 3063 / EA-18G Development					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMMAC Contract	C/CPFF	Tekla : Pax River, MD	1.972	0.758	Apr 2022	0.349	Apr 2023	0.316	Apr 2024	-		0.316	2.701	6.096	5.780
Program Management Support (ASE/ICP-3 (TAC))	WR	Various : Various	0.040	0.005	Dec 2021	0.400	Dec 2022	0.403	Dec 2023	-		0.403	0.209	1.057	-
Program Engineering Support (Flight Plan)	WR	NAWCWD : China Lake	1.691	0.587	Dec 2021	0.383	Dec 2022	0.484	Dec 2023	-		0.484	3.670	6.815	-
Program Engineering Support (Flight Plan)	C/CPFF	Boeing : St. Louis, MO	39.396	0.604	Feb 2022	0.707	Feb 2023	0.694	Feb 2024	-		0.694	5.263	46.664	46.664
Travel	WR	Various : Various	3.153	0.023	Dec 2021	0.020	Dec 2022	0.025	Dec 2023	-		0.025	0.153	3.374	-
Prior Year Mgmt Svcs no longer funded in FYDP	Various	Various : Various	77.390	0.000		0.000		0.000		-		0.000	0.000	77.390	-
Subtotal			123.642	1.977		1.859		1.922		-		1.922	11.996	141.396	N/A
Remarks															
Increase from FY2023 to FY2024 for necessary management support and travel required for Beowulf and beyond line of sight efforts.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2,487.787	58.692		116.589		172.507		-		172.507	764.055	3,599.630	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 5		PE 0604269N / EA-18 Squadrons		3063 / EA-18G Development	



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604269N / EA-18 Squadrons

Project (Number/Name)

3063 / EA-18G Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>EA-18G Development</b>				
Systems Development: Hardware/Software: ALQ-218 ASE Improvement Design and Integration	1	2022	3	2023
Systems Development: Hardware/Software: Growler Block 2 AEA Development	1	2022	4	2028
Systems Development: Hardware/Software: Flight Plan Development	1	2022	4	2028
Systems Development: Hardware/Software: Flight Plan Modeling and Simulation	1	2022	4	2028
Systems Development: Hardware/Software: Flight Plan Studies and Analysis	1	2022	4	2028
Systems Development: Hardware/Software: Obsolescence Redesign Development and Testing	1	2022	4	2028
Systems Development: Software Development: H Build and Agile Software Development	1	2022	4	2028
Test & Evaluation: Integration Testing: H Build Integration Testing	1	2022	4	2028
Test & Evaluation: Operational Testing: H16 Operational Testing - EOC	1	2022	2	2023
Test & Evaluation: Operational Testing: H16 Operational Test - ICP-3	1	2022	2	2023
Test & Evaluation: Operational Testing: H18 Operational Testing	3	2022	4	2023
Test & Evaluation: Operational Testing: H20 Operational Testing	3	2024	4	2025
Test & Evaluation: Operational Testing: H22 Operational Testing	3	2026	4	2027
Test & Evaluation: Flight Plan Engineering: Developmental, Integration and Operational Testing	1	2022	4	2028
Deliveries: H16 Fleet Release	1	2023	1	2023
Deliveries: H16 GCM	1	2023	1	2023
Deliveries: H16 GCM+	3	2023	3	2023
Deliveries: H18 Fleet Release	4	2023	4	2023
Deliveries: H20 Fleet Release	4	2025	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604269N / EA-18 Squadrons		Project (Number/Name) 3063 / EA-18G Development	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Deliveries: H22 Fleet Release		4	2027	4	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604270N / Electronic Warfare (EW) Dev							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,355.954	126.373	144.471	171.384	-	171.384	152.044	131.516	122.334	119.036	Continuing	Continuing
0556: EW Counter Response	600.577	21.666	21.886	22.168	-	22.168	20.532	47.416	48.171	49.139	Continuing	Continuing
1742: EW Technical Development and T&E	10.420	1.506	1.732	1.777	-	1.777	1.804	1.836	1.867	1.904	Continuing	Continuing
2175: Tactical Air Electronic Warfare	640.809	59.431	45.547	50.911	-	50.911	16.299	1.358	0.300	0.310	0.000	814.965
3308: Technology Development	21.844	8.353	13.127	20.399	-	20.399	27.825	19.558	21.510	22.008	Continuing	Continuing
3309: Assault Survivability Optimization	12.857	23.393	37.058	61.548	-	61.548	70.590	46.043	34.678	29.220	Continuing	Continuing
3327: MAGTF EW Aviation Development	69.447	12.024	15.121	14.581	-	14.581	14.994	15.305	15.808	16.455	Continuing	Continuing
9999: Congressional Adds	0.000	0.000	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 418												
A. Mission Description and Budget Item Justification												
<p>This program element includes development of Electronic Warfare (EW) systems for the United States Navy (USN), United States Marine Corps (USMC), and United States Army tactical aircraft, USMC helicopters, surface combatants, data link vulnerability assessments, precision targeting, USN and USMC radio frequency jammers, and development and testing of electronic warfare devices for emerging threats and emergency contingencies. This element also includes: development of hardware/software solutions that link on-board integrated Aircraft Survivability Equipment (iASE) that are compatible with mission planning information and systems; studies, analysis and evaluations of current and future aircraft threats and Advanced EW Suite capabilities; modeling and simulation for improved countermeasure capabilities, and development and testing to address new and emerging threats. The projects in this element improve the ability of the Joint Force to strike diverse targets inside adversary air and missile defense networks to destroy mobile power-projection platforms and enhance close combat lethality in complex terrain.</p> <p>This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604270N / Electronic Warfare (EW) Dev			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	136.593	141.138	162.664	-	162.664
Current President's Budget	126.373	144.471	171.384	-	171.384
Total Adjustments	-10.220	3.333	8.720	-	8.720
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.667			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-7.235	0.000			
• SBIR/STTR Transfer	-2.985	0.000			
• Program Adjustments	0.000	0.000	7.851	-	7.851
• Rate/Misc Adjustments	0.000	0.000	0.869	-	0.869
Congressional Add Details (\$ in Millions, and Includes General Reductions)				FY 2022	FY 2023
Project: 9999: Congressional Adds					
Congressional Add: Filter technology for elctronic warfare mitigation				0.000	10.000
Congressional Add Subtotals for Project: 9999				0.000	10.000
Congressional Add Totals for all Projects				0.000	10.000
Change Summary Explanation					
The FY24 funding request was increased by \$8.720M for continued development of Electronic Warfare (EW) systems.					
Project Unit 0556 / EW Counter Response: FY2024 funding request was increased by \$0.194M for various rate adjustments.					
Project Unit 1742 / EW Technical Development and T&E: FY2024 funding request was increased by \$0.005M for working capital fund rate adjustments.					
Project Unit 2175 / Tactical Air Electronic Warfare: FY2024 funding request was decreased by \$14.601M due to \$12.000M being realigned to PE0604272N Tactical Air Distributed Aperture Infrared Countermeasure (TADIRCM) development program, and various rate adjustments.					
Project Unit 3308 / Technology Development: FY2024 funding request was decreased by \$0.034M for various rate adjustments.					
Project Unit 3309 / Assault Survivability Optimization: FY2024 funding request was increased by \$23.319M to incorporate Common Carriage into P-8 and CMV-22 aircraft, provide additional iASE framework to rapidly incorporate advanced expendable countermeasures and software applications, and develop					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Dev</i>
<p>advanced radio frequency (RF) free fall expendable decoys. Common Carriage is required to standardize countermeasures across services and increase capability/lethality/survivability. iASE offers improved shared situational awareness of threat detection/identification and advanced expendable tactical employment capabilities. Active Expendable Device (AED) and RR-203 (passive) RF decoy replaces current legacy chaff inventory with modern threat protection capability and offers a tailored response option integrated with onboard and off board solutions.</p> <p>Project Unit 3327 / MAGTF EW Aviation Development: FY2024 funding request was decreased by \$0.163M for various rate adjustments.</p> <p>Schedule:</p> <p>Project Unit 2175 / Tactical Air Electronic Warfare:</p> <p>Acquisition Milestones: FY22 Dual Band Decoy (DBD) EMD contract award moved from 1st Qtr. FY2022 to 2nd Qtr. FY2023.</p> <p>Systems Development: ALQ-214 SWIP Development Award 1 extended from 3QFY21 to 1QFY23 to align with ALQ-214 SWIP Test &amp; Evaluation. IDECM ARC Support for Development, Integration and Test continues through 2nd QTR FY2026.</p> <p>Production Milestones: ALQ-214 SRA Retrofit contract awards and deliveries updated to align with procurement budget. DBD EMD Systems Development shifted to the right by three quarters and contract deliveries also shifted to the right by three quarters.</p> <p>Project Unit 3308 / Technology Development: Technology Development plan changed from PB23 to PB24 to account for a developmental strategy adjustment which leverages an alternative Software Development approach rather than proceeding with a traditional electronic warfare (EW) Suite Operational Flight Program/Mission Data File (OFP/MDF) development approach.</p> <p>Program Milestones: ARC Integration OFP Release-Shifted OFP from 2QFY22 to 4QFY22, renamed to Release Build 1 and added Release Builds 2 &amp; 3 to align with program schedule. The ARC Release Build shift from 2QFY22 to 4QFY22 is attributed to developmental delays experienced on the ARC Mainline OFP program. ARC Build 1 moved from Q1FY22 to Q1FY23. Software/Firmware (SW/FW) Development and Integration (DEV/INT) Contract Award milestone 1-5 was added starting in 2QFY23 to 2QFY27. Addition of this program reallocates funding from the PB23 plan to support PB24 planned efforts. Removed ARC Mission Computer (MC) and Display Improvements award milestone. ARC Mission computer work scope no longer resides within PMA272 and has been moved to PMA265 under the ADVEW Program. EW Suite OFP Release and OFP milestones were combined to eliminate duplicate entries on the schedule exhibit. System Development: System Development Reviews, System Development Analysis and Threat Analysis/ECM Technique Optimization milestones were combined to eliminate duplicate entries. Software/firmware (SW/FW) System Requirements Contract Duration and SW/FW Development and Integration Contract Durations were combined. ARC Integration (OFP/MC), MC and Display Improvements and ARC Technique Optimization were removed.</p> <p>Test and Evaluation: Suite Level Electronic Countermeasures (ECM) and Integrated Evaluation rows were consolidated. SW/FW Increment DT/IT/OT beginning in 3QFY24 to support SW/FW Development Effort was added.</p> <p>Project Unit 3309 / Assault Survivability Optimization: Common Carriage EMD award changed from 3QFY22 to 4QFY22 due to additional time required for negotiations with vendor. Program schedule format changed to provide more clarity for all project efforts. ALE-47 MOB/iASE major category removed and</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604270N / Electronic Warfare (EW) Dev	
<p>ALE-47 MOB/iASE milestones and efforts aligned to other categories. Schedule updated to incorporate P-8 and CMV-22 Common Carriage events and advanced RF decoys development, qualification and testing.</p> <p>Project Unit 3327 / MAGTF EW Aviation Development: The MV-22 test timelines have been extended to correct identified deficiencies that require additional DT flights prior to entry into OT. BLK X C130 milestones have been delayed due to extended long lead times and supply chain delays of prototype components and materials. This has stalled prototype development and fabrication, and will subsequently defer start of the test program.</p>		



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 0556 / <i>EW Counter Response</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0556: <i>EW Counter Response</i>	600.577	21.666	21.886	22.168	-	22.168	20.532	47.416	48.171	49.139	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Jammer Techniques Optimization (JATO) organization produces the jamming techniques and Electronic Attack (EA) optimization algorithms that are critical for current and future Airborne Electronic Attack (AEA) systems of the United States Navy (USN) and United States Marine Corps (USMC) to execute the evolving AEA mission. Through Modeling & Simulation (M&S), laboratory testing, and field testing, JATO optimizes parameters for existing EA systems (such as AN/ALQ-99 Tactical Jamming System (TJS) and the AN/ALQ-231(V) Intrepid Tiger II Family of Systems) to best counter existing threats, and applies that knowledge to define the requirements for follow-on AEA systems such as the Next Generation Jammer Mid-Band (NGJ-MB) and Next Generation Jammer Low Band (NGJ-LB) programs. As commercial and military Radio Frequency (RF) threats evolve and proliferate, the JATO organization provides updated tactics, techniques, and procedures to maximize the potency of USN and USMC AEA in meeting the Combatant Command (COCOM) Commanders' Non Kinetic Effects (NKE) priorities, to include highly contested environments, Force Protection, Information Operations, and enhanced communications jamming. (Classified discussion available upon request).

JATO's Advanced Techniques Group (ATG) focuses specifically on electronic countermeasures to advanced threat weapon systems and Command, Control, and Communications (C3) networks that are challenging existing EA approaches, and how to best apply advances in geolocation and unknown threat characterization to EA responses. Additional efforts include risk reduction activities to evaluate and minimize EA interference with US weapons systems, and research/technology studies in support of upgrades to existing AEA systems such as the AN/ALQ-99 TJS.

The AEA Advanced Development project focuses on increasing the Department of the Navy's understanding and utilization of rapidly-evolving technologies that operate in the Electromagnetic spectrum. As commercial and military Radio Frequency (RF) threats evolve and proliferate, this project tracks the relevant technology, intelligence, and tactics to maximize the potency of USN and USMC AEA through the rapid insertion of emergent technologies into existing AEA weapon systems and aircraft platforms.

The Special Capability Pod (SCP) project leverages existing Navy and Joint Service investments and focuses on continued development, test and evaluation of SCPs for highly flexible EW on USN EA-18G aircraft. Initial efforts to develop Navy pod variants were funded by the Air Force in FY18 as an OSD initiative. The SCPs will be specifically designed to address EW capability gaps and counter emerging electronic threats. As an iterative program, the highly modular interior design of the SCPs allows them to be integrated with current technology and upgraded electronics to provide the USN a rapidly adaptable solution against highly specialized and continuously evolving threats. (Classified discussion available upon request.)

The Electromagnetic Maneuver Warfare (EMW) Resource Allocation Management (RAM) project develops a software application to interface with the display in the cockpit of the EA-18G. The software application will provide the aircrew with smart decision aids in flight to enhance EW capability and survivability, optimized flight profiles, and jamming effectiveness in highly contested environments. EMW RAM efforts are being conducted as a collaborative project with Australia under the Airborne Multi-Platform Electronic Warfare Project Arrangement.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) De</i> v		Project (Number/Name) 0556 / <i>EW Counter Response</i>		
The Next Generation Jammer (NGJ) follow-on development project is required for hardware and software development, integration and testing of the NGJ capability within future EA-18G Software Configuration Set (SCS) H build software loads, as well as any potential future aircraft. The project will develop and incorporate incremental capability upgrades to ensure NGJ continues to address Airborne Electronic Attack (AEA) capability gaps against increasingly advanced and rapidly evolving enemy threats throughout the electromagnetic spectrum.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Jammer Techniques Optimization (JATO)		17.167	17.515	17.864	0.000	17.864
Articles:		-	-	-	-	-
FY 2023 Plans: The JATO organization will continue engineering development and test support of existing and emerging systems such as, but not limited to, the EA-18G, AN/ALQ-249 (NGJ-MB) and Next Generation Jammer Low Band (NGJ-LB) to address potential RF and Cyber/EW effects on current and evolving radar/communications threats. JATO will continue to generate tactics, techniques, and procedures to optimize the capabilities of systems such as, but not limited to, the AN/ALQ-99, ALQ-218, ALQ-227, AN/ALQ-231(V), SCP, MALD-N, JSF and UAS payloads. JATO continues to meet COCOM Commanders' EW priorities including support for Overseas Contingency Operations and Force Protection. (Classified discussion available upon request.						
FY 2024 Base Plans: The JATO organization will continue engineering development and test support of existing and emerging systems such as, but not limited to, the EA-18G, NGJ-MB, and NGJ-LB to address potential NKE on current and evolving radar/communications threats. JATO will continue to generate tactics, techniques, and procedures to optimize the capabilities of systems such as, but not limited to, the AN/ALQ-99, AN/ALQ-249 (NGJ-MB), ALQ-218, ALQ-227, AN/ALQ-231(V), SCP, JSF and UAS payloads. JATO continues to meet COCOM Commanders' NKE priorities including support for Overseas Contingency Operations and Force Protection. (Classified discussion available upon request).						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 due to inflation.						
Title: Electronic Warfare (EW) Advanced Development		4.239	4.371	4.304	0.000	4.304
Articles:		-	-	-	-	-
FY 2023 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 0556 / <i>EW Counter Response</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Efforts in FY 2023 will include hardware and software prototyping, engineering, and multi-system effects characterization for integrating capabilities into systems including, but not limited to, the AN/ALQ-99, AN/ALQ-231, AN/ALQ-249, NGJ-LB, Intrepid Tiger II, and Special Capability/SPIN Pods payloads to address existing capability gaps on COCOM Integrated Priority Lists. FY 2023 funding supports research, development, integration and test and evaluation of advanced technologies into current, and future, AEA weapons systems in laboratory and operational environments. (Classified discussion available upon request).						
FY 2024 Base Plans: Efforts in FY 2024 includes continued hardware and software prototyping, engineering, and multi-system effects characterization for integrating capabilities into systems including, but not limited to, the AN/ALQ-99, AN/ALQ-231, AN/ALQ-249, NGJ-LB, Intrepid Tiger II, and Special Capability/SPIN Pods payloads to address existing capability gaps on COCOM Integrated Priority Lists. FY 2024 funding supports research, development, integration and test and evaluation of advanced technologies into current, and future, AEA weapons systems in laboratory and operational environments. (Classified discussion available upon request).						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 due to reduced GTRI UARC support.						
Title: Special Capability Pod (SCP)		0.120	0.000	0.000	0.000	0.000
Articles:		-	-	-	-	-
Description: The Special Capability Pods (SCPs) project leverages other ongoing Navy and Joint Service investments and focuses on continued development, test and evaluation of rapidly repurposable pods for highly flexible Airborne Electronic Attack capability.						
FY 2023 Plans: N/A						
FY 2024 Base Plans: N/A						
FY 2024 OCO Plans: N/A						
Title: Electromagnetic Manuever Warfare (EMW) Resource Allocation Manager (RAM)		0.140	0.000	0.000	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>	<b>Project (Number/Name)</b> 0556 / <i>EW Counter Response</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p align="right"><i>Articles:</i></p> <p><b>Description:</b> The Department of Navy is developing dynamic Electromagnetic Maneuver Warfare (EMW) Resource Allocation Management (RAM) applications to increase operators effectiveness in the Electromagnetic Spectrum (ES).</p> <p><b>FY 2023 Plans:</b> N/A</p> <p><b>FY 2024 Base Plans:</b> N/A</p> <p><b>FY 2024 OCO Plans:</b> N/A</p>	-	-	-	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	21.666	21.886	22.168	0.000	22.168

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN/0513: <i>AEA Systems</i>	20.221	25.058	24.110	-	24.110	19.649	18.652	18.997	19.453	54.400	664.777

**Remarks**

**D. Acquisition Strategy**

The JATO organization, comprised of a partnership between the Government and several University Affiliated Research Centers (UARC), continues to research EW tactics and techniques. The JATO prime delivery order, a cost plus fixed fee contract, was awarded to Johns Hopkins University (JHU).

The AEA Advanced Development project will investigate developmental and existing technologies from commercial and governmental sources for integration into current and emerging USN and USMC EW weapon systems and aircraft. These technologies, once demonstrated to have sufficient maturity, will transition into the applicable acquisition programs. Additionally, the project will pursue technology development and demonstration through rapid acquisition or Speed to Fleet (S2F) initiatives to the greatest extent possible.

The SCP project leverages existing Navy and Joint Service investments and focuses on continued development, test and evaluation of SCPs for highly flexible Non Kinetic Effects on USN EA-18G aircraft. Initial efforts to develop Navy pod variants were funded by the Air Force in FY18 as an OSD initiative. The SCPs will be specifically designed to address EW capability gaps and counter emerging electronic threats. As an iterative program, the highly modular interior design of the

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) De</i> v	Project (Number/Name) 0556 / <i>EW Counter Response</i>
<p>SCPs allows them to be integrated with current technology and upgraded electronics to provide the USN a rapidly adaptable solution against highly specialized and continuously evolving threats. (Classified discussion available upon request.)</p>		

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604270N / *Electronic Warfare (EW) Development*

## Project (Number/Name)

0556 / *EW Counter Response*

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	Naval Research Lab : Maryland	21.518	1.937	Nov 2021	1.909	Nov 2022	2.014	Nov 2023	-		2.014	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : Patuxent River, MD	43.446	0.766	Nov 2021	0.720	Nov 2022	0.735	Nov 2023	-		0.735	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCWD : Point Mugu, CA	109.733	6.090	Nov 2021	6.293	Nov 2022	6.330	Nov 2023	-		6.330	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCWD : China Lake, CA	7.590	0.140	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC Det : Crane, IN	15.068	1.203	Nov 2021	1.199	Nov 2022	1.251	Nov 2023	-		1.251	Continuing	Continuing	Continuing
Systems Engineering	Various	Various : Various	16.918	0.117	Nov 2021	0.119	Nov 2022	0.122	Nov 2023	-		0.122	Continuing	Continuing	Continuing
Prior Year Development cost no longer Funded in the FYDP	Various	Various : Various	269.266	0.000		0.000		0.000		-		0.000	0.000	269.266	-
<b>Subtotal</b>			483.539	10.253		10.240		10.452		-		10.452	Continuing	Continuing	N/A

## Remarks

Funding increases from FY 2023 to FY 2024 due to inflation.

## Support (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support - Jammer Techniques Optimization (JATO)	SS/CPFF	Johns Hopkins Univ : Maryland	60.807	3.900	Dec 2021	3.978	Dec 2022	4.058	Dec 2023	-		4.058	Continuing	Continuing	Continuing
Development Support - EW Advanced Development	SS/CPFF	Johns Hopkins Univ : Maryland	0.750	0.357	Dec 2021	0.364	Dec 2022	0.371	Dec 2023	-		0.371	Continuing	Continuing	Continuing
Development Support - EW Advanced Development	SS/CPFF	GTRI : Atlanta, GA	2.941	1.000	Dec 2021	1.067	Dec 2022	0.952	Dec 2023	-		0.952	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Dev</i>						Project (Number/Name) 0556 / <i>EW Counter Response</i>					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Eng & Tech Srvc (Non FFRDC)	Various	Various : Various	26.047	2.765	Dec 2021	2.956	Dec 2022	2.875	Dec 2023	-		2.875	Continuing	Continuing	Continuing		
Eng & Tech Srvc (FFRDC)	Various	Various : Various	1.982	0.612	Dec 2021	0.658	Dec 2022	0.628	Dec 2023	-		0.628	Continuing	Continuing	Continuing		
Prior year Support costs no longer funded in the FYDP	Various	Various : Various	3.630	0.000		0.000		0.000		-		0.000	0.000	3.630	-		
Subtotal			96.157	8.634		9.023		8.884		-		8.884	Continuing	Continuing	N/A		
Remarks Funding increases from FY 2023 to FY 2024 due to inflation.																	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : Point Mugu, CA	13.790	2.692	Nov 2021	2.611	Nov 2022	2.801	Nov 2023	-		2.801	Continuing	Continuing	Continuing		
Developmental Test & Evaluation (DT&E)	WR	Various : Various	4.253	0.060	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing		
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	0.925	0.000		0.000		0.000		-		0.000	0.000	0.925	-		
Subtotal			18.968	2.752		2.611		2.801		-		2.801	Continuing	Continuing	N/A		
Remarks Funding increases from FY 2023 to FY 2024 due to inflation.																	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)					Project (Number/Name)				
1319 / 5						PE 0604270N / <i>Electronic Warfare (EW) Development</i>					0556 / <i>EW Counter Response</i>				
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	Various : Various	1.348	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Travel	WR	Various : Various	0.565	0.027	Oct 2021	0.012	Oct 2022	0.031	Oct 2023	-		0.031	Continuing	Continuing	Continuing
Subtotal			1.913	0.027		0.012		0.031		-		0.031	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			600.577	21.666		21.886		22.168		-		22.168	Continuing	Continuing	N/A
Remarks															



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023																									
Appropriation/Budget Activity 1319 / 5														R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>								Project (Number/Name) 0556 / <i>EW Counter Response</i>																	
EW Counter Response														FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027		FY 2028													
Acquisition Milestones														1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q						
Milestones																																							
Systems Development																																							
Hardware Development														Electronic Warfare (EW) Advanced Development																									
Software Development														SCP Payload Analysis																									
														EMW RAM SW Development																NGJ Follow-on Development									
Reviews																JATO ESC			JATO ESC			JATO ESC			JATO ESC			JATO ESC			JATO ESC			JATO ESC					
Test & Evaluation																																							
Developmental Test														JATO Ground DT																									
Operational Evaluation														JATO Flight DT																									
														SCP Test																									
														Advanced Development Test																									
																										NGJ Follow-on Test													
																										JATO Ground OT													
Production Milestones																																							
Contract Awards																																							
Deliveries																																							
2024PB - 0604270N - 0556																																							

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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy</b>			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>	<b>Project (Number/Name)</b> 0556 / <i>EW Counter Response</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>EW Counter Response</i></b>				
Systems Development: Hardware Development: Electronic Warfare (EW) Advanced Development	1	2022	4	2028
Systems Development: Hardware Development: Special Capability Pod (SCP) Payload Analysis	1	2022	4	2022
Systems Development: Software Development: Electromagnetic Maneuver Warfare (EMW) Resource Allocation Manager (RAM) Development	1	2022	4	2022
Systems Development: Software Development: Next Generation Jammer Follow-On Development	1	2026	4	2028
Systems Development: Reviews: JATO Executive Steering Committee 2022	3	2022	3	2022
Systems Development: Reviews: JATO Executive Steering Committee 2023	3	2023	3	2023
Systems Development: Reviews: JATO Executive Steering Committee 2024	3	2024	3	2024
Systems Development: Reviews: JATO Executive Steering Committee 2025	3	2025	3	2025
Systems Development: Reviews: JATO Executive Steering Committee 2026	3	2026	3	2026
Systems Development: Reviews: JATO Executive Steering Committee 2027	3	2027	3	2027
Systems Development: Reviews: JATO Executive Steering Committee 2028	3	2028	3	2028
Test & Evaluation: Developmental Test: JATO Ground Developmental Test	1	2022	4	2028
Test & Evaluation: Developmental Test: JATO Flight Developmental Test	1	2022	4	2028
Test & Evaluation: Developmental Test: SCP Test	1	2022	2	2022
Test & Evaluation: Developmental Test: Advanced Development Test	1	2022	4	2028
Test & Evaluation: Developmental Test: Next Generation Jammer Follow-on Test	1	2026	4	2028
Test & Evaluation: Operational Evaluation: JATO Ground Operational Test	1	2022	4	2028
Test & Evaluation: Operational Evaluation: JATO Flight Operational Test	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 1742 / <i>EW Technical Development and T&amp;E</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1742: <i>EW Technical Development and T&amp;E</i>	10.420	1.506	1.732	1.777	-	1.777	1.804	1.836	1.867	1.904	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Provide for quick reaction prototyping of tactical information and electronic warfare systems to counter adversary platforms and Command and Control, Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting (C5ISR). Systems address various requirements across multiple platforms (air, surface, and subsurface), airborne and surface cryptologic operational requirements, and joint missions to research, assess, and develop information warfare and electronic warfare systems and capabilities. (Details held at a higher classification).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Electronic Warfare Technical Development and Test & Evaluation Naval Information Forces (NAVIFOR) <b>Articles:</b>  <b>FY 2023 Plans:</b> *Perform technology maturation and risk reduction on Cyber and Electronic Warfare countermeasures. *Develop increased understanding of new and emerging technology to improve countermeasure development and capability readiness.  <b>FY 2024 Base Plans:</b> *Perform technology maturation and risk reduction on Cyber and Electronic Warfare countermeasures. *Develop increased understanding of new and emerging technology to improve countermeasure development and capability readiness.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$0.045M for development of emerging technology to improve countermeasure development and capability readiness.								1.506	1.732	1.777	0.000	1.777
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								1.506	1.732	1.777	0.000	1.777
C. Other Program Funding Summary (\$ in Millions)												
N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Dev</i>	Project (Number/Name) 1742 / <i>EW Technical Development and T&amp;E</i>

C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

Development of classified prototypes and special capabilities. The Navy is granted streamlined acquisition authority for the development of classified prototypes and special capabilities under the Deputy Assistant Secretary of the Navy (DASN) Information Warfare.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>				<b>Project (Number/Name)</b> 1742 / <i>EW Technical Development and T&amp;E</i>				

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development(1)	C/FP	Classified : Classified	8.210	1.506	Oct 2021	1.732	Nov 2022	1.777	Nov 2023	-		1.777	Continuing	Continuing	Continuing
<b>Subtotal</b>			8.210	1.506		1.732		1.777		-		1.777	Continuing	Continuing	N/A

**Remarks**  
1-Due to classification category, may not be on Defense Message System General Service (GENSER) classified exhibits.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAVSEA : Maryland	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	-
Studies & Analysis(1)	C/CPFF	Classified : Classified	0.653	0.000		0.000		0.000		-		0.000	0.000	0.653	-
<b>Subtotal</b>			1.253	0.000		0.000		0.000		-		0.000	0.000	1.253	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	Classified : Classified	0.957	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.957	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A

			Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			10.420	1.506	1.732	1.777	-	1.777	Continuing	Continuing	N/A

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023																											
Appropriation/Budget Activity 1319 / 5														R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>										Project (Number/Name) 1742 / <i>EW Technical Development and T&amp;E</i>																	
Proj 1742.L60														FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
														1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
														Development Work Database development																											
<div></div>																																									
2024DON - 0604270N - 1742.L60																																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development Work</i>	Project (Number/Name) 1742 / <i>EW Technical Development and T&amp;E</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 1742.L60</i>				
Development Work: Database development	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2175: <i>Tactical Air Electronic Warfare</i>	640.809	59.431	45.547	50.911	-	50.911	16.299	1.358	0.300	0.310	0.000	814.965
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 418												

**A. Mission Description and Budget Item Justification**

Integrated Defensive Electronic Countermeasures (IDECM) Block 4 (IB-4) is an Engineering Change Proposal (ECP) to the ALQ-214 to render it suitable for operation on F/A-18C/D aircraft (replacing the ALQ-126B and significantly improving F/A-18C/D survivability) while retaining all IDECM suite functionality when installed on F/A-18E/F aircraft. The IB-4 acquisition and contract strategy includes development of the Common On-Board Jammer for the F/A-18 C/D/E/F aircraft through sole source contract awards for modifications to the ALQ-214. IB-4, ALQ-214 ECP efforts include hardware and software design, development, integration and testing on the host aircraft. The F/A-18 EW suite includes the ALR-67 Radar Warning Receiver (RWR), the ALE-47 Countermeasures Dispensing Set (CMDS), the mission computer and other avionics.

ALQ-214 software improvement program (SWIP) will provide the ALQ-214 with Digital Radio Frequency Memory (DRFM) technique capability significantly improving F/A-18C/D/E/F survivability. Acquisition and contract strategy includes development, integration and test of the ALQ-214 software improvements through sole-source contract award. Modifications to other F/A-18E/F Block II and Block III aircraft avionics may be required in order to develop and integrate this capability. These other avionics may include, but are not limited to, the ALR-67(V)2, ALR-67(V)3, ALE-47, ALE-50 Advanced Airborne Expendable Decoy (AAED), ALE-55 Fiber Optic Towed Decoy (FOTD), mission computer and fire control radar.

F/A-18 E/F ALQ-214 Adaptive Radar Countermeasures (ARC) will provide the ALQ-214A(V)4 with improved Radio Frequency (RF) threat detection algorithms and jamming against modern threat radars. Modifications to F/A-18E/F Block II and Block III aircraft avionics may be required in order to develop and integrate this capability. These other avionics may include, but are not limited to, the ALR-67(V)3, ALE-47, ALE-50 AAED, ALE-55 FOTD, mission computer and fire control radar. ARC capabilities may be integrated into other DoD platforms with radar warning receivers or countermeasures systems.

The Dual Band Decoy (DBD) will provide expanded RF capability against current and emerging modern RF threat radars, significantly improving the survivability of the F/A-18 E/F and may be further developed and integrated into other Naval platforms. DBD will leverage Science and Technology (S&T) advancements through the Dual Band Intelligent RF Expendable (DIRE) program to accelerate DBD capability development. DBD will replace the current ALE-55 FOTD beginning with fielding of an Initial Operational Capability in FY 2026. Modifications to other F/A-18E/F Block II and Block III aircraft avionics may be required in order to develop and integrate this capability. These other avionics may include, but are not limited to, the ALR-67(V)2, ALR-67(V)3, ALE-47, ALE-50 AAED, ALE-55 FOTD, mission computer and fire control radar.



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy						Date: March 2023					
Appropriation/Budget Activity 1319 / 5			R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) De v</i>			Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>					
This Project also includes/enables integrated Aircraft Survivability Equipment (iASE) which improves situational awareness for own-ship, wingman, and distributed command and control.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
<b>Title:</b> Tactical Air EW  <b>Articles:</b>  <b>FY 2023 Plans:</b> FY23 - IDECM ARC Development, Integration and Test will continue through FY 2023. Dual Band Decoy (DBD) competitively awarded EMD phase including Development, Integration and Test will continue in FY 2023.  <b>FY 2024 Base Plans:</b> FY24 - IDECM ARC Development, Integration and Test is planned to conclude in FY 2024. A release Build 3 deliverable from the development effort will be provided by the OEM and assessed by the USG/OPTEVFOR for fleet introduction. DBD Developmental Test (DT) will continue in FY2024. DBD Integration Test (IT) will begin in FY2024 continuing through FY2025.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$5.364 between FY 2023 and FY 2024 is due to Dual Band Decoy (DBD) Developmental Tests beginning 3Q FY 2024. DBD funding will allow for the EMD contract and efforts related to Developmental Test (DT) and Integration Test (IT) phases to support DBD IOC in FY 2026. IDECM ARC Test and Evaluation efforts to continue in FY 2024.						59.431	45.547	50.911	0.000	50.911	
						66	-	-	-	-	
Accomplishments/Planned Programs Subtotals						59.431	45.547	50.911	0.000	50.911	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0576 004-12: <i>Common On-Board Jammer</i>	22.565	22.833	30.564	-	30.564	13.914	6.906	9.454	3.247	0.000	757.533
• PANMC/0182: <i>Air Expendable CM</i>	0.000	20.153	21.990	-	21.990	40.126	48.339	49.322	50.312	Continuing	Continuing
Remarks											
PANMC 0182 Air Countermeasures (CM) funding represents only a portion of the total PANMC 0182 Air Expendable CM Budget. Dual Band Decoy (DBD) initial procurements begin in FY 2023 to replace the ALE-55 Fiber Optic Towed Decoy (FOTD) whose last procurement was in FY 2020.											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Dev</i> v	Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>

D. Acquisition Strategy

The mainline ARC Integration contract is a sole source contract awarded to Leidos 4th Qtr. FY 2020 and continuing through FY 2024. The ARC program software development is modeled after an agile methodology producing three release builds, which are individually supported by development sprints. DBD development is planned as an evolutionary development approach with competitive prototyping phase which started in FY 2019 continuing through FY 2021, followed by a competitively awarded EMD phase starting in FY 2022 continuing into FY 2025.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>						Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Adaptive Radar Countermeasures (ARC) Development	SS/CPFF	Leidos : Arlington, VA	44.549	29.503	Nov 2021	14.720	Dec 2022	12.381	Dec 2023	-		12.381	3.257	104.410	97.253		
Dual Band Decoy (DBD) Development EMD	C/FFP	TBD : TBD	0.000	12.541	Mar 2023	7.987	Nov 2023	13.119	Apr 2024	-		13.119	5.078	38.725	59.424		
DBD Development EMD Other Software	C/CPFF	TBD : TBD	0.000	0.000		0.000		6.200	Apr 2024	-		6.200	0.000	6.200	-		
Prior Year Prod Dev costs no longer funded in FYDP	Various	Various : Various	379.616	0.000		0.000		0.000		-		0.000	0.000	379.616	-		
Subtotal			424.165	42.044		22.707		31.700		-		31.700	8.335	528.951	N/A		
Remarks																	
IDECM ARC Support for Development, Integration and Test continues through FY 2024. Decrease in FY24 (\$2.339M) in ARC development is due to the transition into ARC Verification testing and correction of deficiencies starting in FY24. Increase in FY24 (\$5.132M) is due to DBD competitive EMD phase to increased developmental testing. Other Software contractual effort for DBD was added in FY24 (\$6.200M).																	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Integrated Log Supt ARC	WR	NAWCAD : Pax River, MD	0.269	0.086	Nov 2021	0.108	Nov 2022	0.117	Nov 2023	-		0.117	0.120	0.700	-		
Engineering Support ARC	WR	Various : Various	4.635	2.180	Nov 2021	2.528	Nov 2022	0.447	Nov 2023	-		0.447	0.265	10.055	-		
Engineering Support ARC	WR	NAWCWD : Point Mugu, CA	0.000	0.000		0.000		1.247	Nov 2023	-		1.247	0.000	1.247	-		
Engineering Support ARC	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		1.134	Nov 2023	-		1.134	0.000	1.134	-		
Program Management Support ARC	WR	NAWCAD : Pax River, MD	0.000	0.900	Nov 2021	0.893	Nov 2022	0.000		-		0.000	0.000	1.793	-		
Engineering Support DBD	WR	Various : Various	5.939	1.863	Nov 2021	1.990	Nov 2022	1.442	Nov 2023	-		1.442	0.310	11.544	-		
Software Dev-ALQ - 214 SW Dev	C/CPFF	GTRI : Atlanta GA	0.810	0.000		0.184	Dec 2022	0.188	Nov 2023	-		0.188	0.000	1.182	1.182		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) De</i> v						Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Software Dev Engineering Support ARC	C/IDDQ	Carnegie Mellon University : Pittsburgh, PA	0.000	0.907	Mar 2022	0.000		0.000		-		0.000	0.000	0.907	0.907		
Management Support Services DBD	C/CPFF	Various : Various	0.000	0.228	Dec 2021	0.000		0.000		-		0.000	0.000	0.228	0.228		
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	55.281	0.000		0.000		0.000		-		0.000	0.000	55.281	-		
Subtotal			66.934	6.164		5.703		4.575		-		4.575	0.695	84.071	N/A		
Remarks																	
IDECM ARC Support for Development, Integration and Test continues through FY 2024. Dual Band Decoy (DBD) Support for Development, Integration and Test continues through FY 2024. Increase in FY24 (\$ .309M) ARC Engineering and Logistics efforts for additional oversight required during flight testing. FY24 Engineering Support various separated into multiple locations. FY24 Program Management Support for ARC moved to Management Services Cost Category. Decrease in FY24 (\$ .279M) DBD support efforts due to the completion of Technical Publications/Trainers effort in FY23. Decrease in FY24 (\$ .269M) DBD support efforts to separate Program Management Support from Engineering Support and moved to Management Services Cost Category. Increase in FY24 (\$ .004M) Software Dev-ALQ-214 SW Dev CSS support is due to escalation.																	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake, CA	3.883	6.199	Nov 2021	3.177	Nov 2022	2.500	Nov 2023	-		2.500	0.000	15.759	-		
Operational Test & Evaluation (OT&E)	SS/CPFF	Various : Various	2.636	0.272	Mar 2022	1.014	Dec 2022	2.488	Mar 2024	-		2.488	4.504	10.914	4.038		
Operational Test & Evaluation (OT&E)	WR	NAWCAD : Pax River, MD	1.059	0.449	Nov 2021	0.541	Nov 2022	0.582	Nov 2023	-		0.582	0.593	3.224	-		
Developmental Test & Evaluation (DT&E)	SS/CPFF	Various : Various	0.000	0.315	Mar 2022	0.000		0.319	Mar 2024	-		0.319	0.000	0.634	0.634		
Operational Test & Evaluation (OT&E)	WR	NAWCWD : Point Mugu, CA	0.000	1.497	Nov 2021	5.004	Nov 2022	2.648	Nov 2023	-		2.648	0.000	9.149	-		
Operational Test & Evaluation (OT&E)	WR	NAWCWD : China Lake, CA	0.000	2.435	Nov 2021	7.345	Nov 2022	3.157	Nov 2023	-		3.157	1.500	14.437	-		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>					Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	0.000	0.000		0.000		1.400	Nov 2023	-		1.400	0.000	1.400	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	52.220	0.000		0.000		0.000		-		0.000	0.000	52.220	-
Subtotal			59.798	11.167		17.081		13.094		-		13.094	6.597	107.737	N/A
Remarks															
IDECM Developmental Test and Evaluation continues through FY 2024. Decrease in Operational Test and Evaluation efforts at NAWCWD Point Mugu (\$2.356M) and China Lake (\$4.188M) in FY 2024 is due to Integrated Test and Evaluation efforts for ARC completing in 1Q FY2024. Increase in Operational Test and Evaluation efforts (\$1.474M) at various activities is due to ARC operational testing efforts beginning early FY2024. Decrease in Developmental Test and Evaluation efforts at NAWCWD China Lake (\$0.677M) in FY 2024 is a result of shifting of support to NAWCAD PAX to assist with the additional test requirements for the DBD EMD program. Increase in Developmental Test and Evaluation at NAWCAD PAX (\$1.400M) and various field activities (\$0.319M) in FY 2024 is due to additional test requirements for the DBD EMD Program. Increase in Operational Test and Evaluation efforts at NAWCAD Pax (\$0.041) are due to MISC rate adjustments.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Allot	NAWCAD : Pax River, MD	0.977	0.056	Oct 2021	0.056	Oct 2022	0.056	Oct 2023	-		0.056	0.058	1.203	-
Program Management Support ARC	WR	NAWCAD : Pax River, MD	0.000	0.000		0.000		0.917	Nov 2023	-		0.917	0.835	1.752	-
Program Management Support DBD	WR	NAWCAD : Pax River, MD	0.000	0.000		0.000		0.269	Nov 2023	-		0.269	0.572	0.841	-
Management Support Services DBD	C/CPFF	Various : Various	0.000	0.000		0.000		0.300	Nov 2023	-		0.300	0.000	0.300	-
Prior Year Mgmt costs no longer funded in FYDP	Various	Various : Various	88.935	0.000		0.000		0.000		-		0.000	0.000	88.935	-
Subtotal			89.912	0.056		0.056		1.542		-		1.542	1.465	93.031	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023													
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Dev</i>						Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>													
Management Services (\$ in Millions)												FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item		Contract Method & Type	Performing Activity & Location		Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract						
<u>Remarks</u> FY24 (\$.917M) Program Management Support for ARC moved from Support Cost Category. FY24 (\$.269M) Program Management Support for DBD separated from Engineering Support DBD and moved from Support Cost Category. FY24 (\$.300) Management Support Services for DBD technical analysis.																									
					Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract								
Project Cost Totals					640.809	59.431		45.547		50.911		-		50.911	17.092	813.790	N/A								
<u>Remarks</u>																									

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

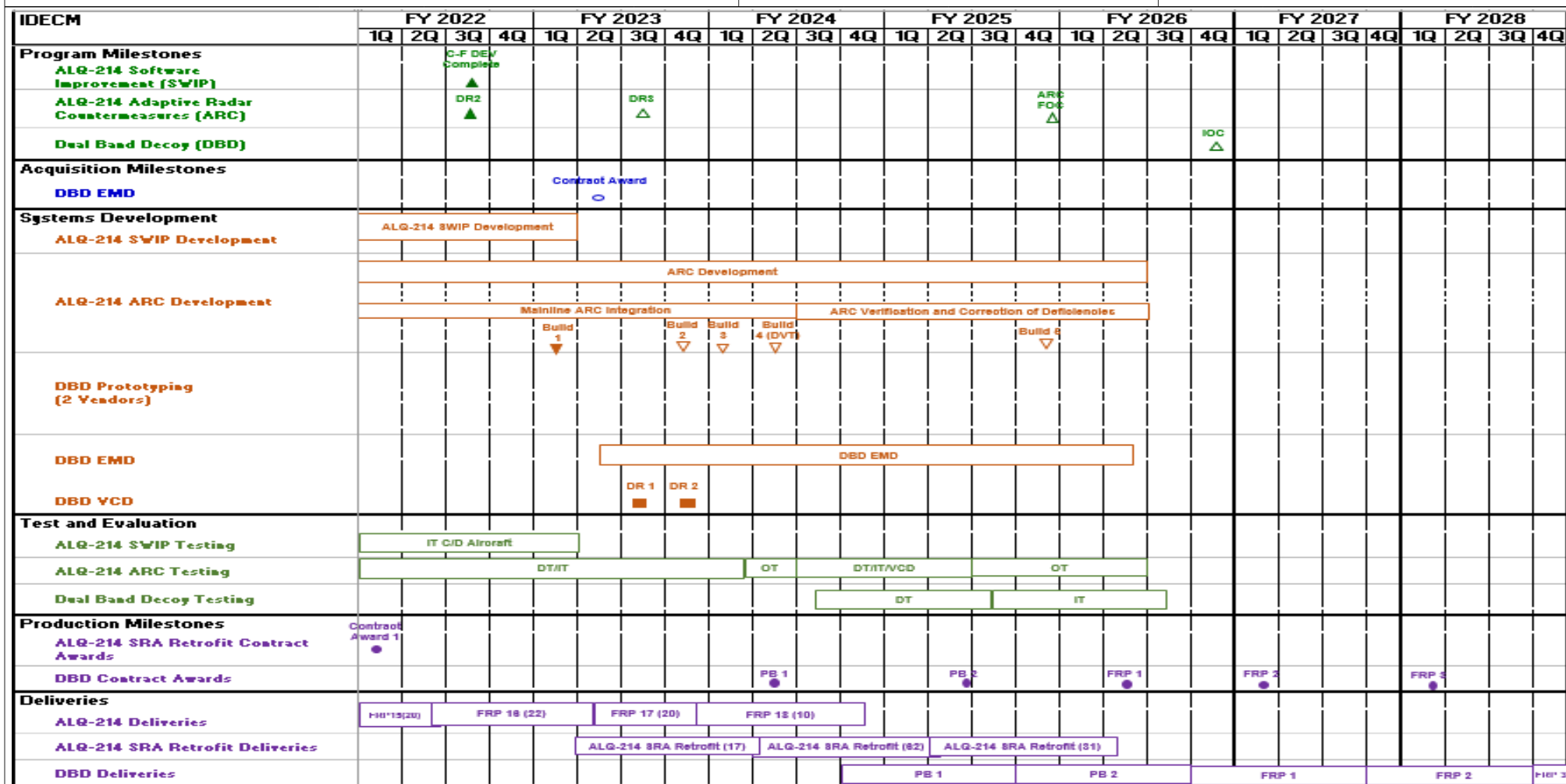
R-1 Program Element (Number/Name)

PE 0604270N / Electronic Warfare (EW) De

v

Project (Number/Name)

2175 / Tactical Air Electronic Warfare



## UNCLASSIFIED

Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604270N / *Electronic Warfare (EW) Development*

## Project (Number/Name)

2175 / *Tactical Air Electronic Warfare*

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>IDECM</b>				
Acquisition Milestones: ALQ-214 SW Improvement: C-F Development	3	2022	3	2022
Acquisition Milestones: ALQ-214 Adaptive Radar Countermeasures (ARC): Design Review 2	3	2022	3	2022
Acquisition Milestones: ALQ-214 Adaptive Radar Countermeasures (ARC): Design Review 3	3	2023	3	2023
Acquisition Milestones: ALQ-214 Adaptive Radar Countermeasures (ARC): ALQ-214 ARC FOC	4	2025	4	2025
Acquisition Milestones: DBD: Initial Operational Capability (IOC)	4	2026	4	2026
Acquisition Milestones: DBD EMD: Contract Award	2	2023	2	2023
Systems Development: ALQ-214 SW Improvement Development: ALQ-214 SW Improvement Development	1	2022	1	2023
Systems Development: ALQ-214 ARC Development: ARC Development	1	2022	2	2026
Systems Development: ALQ-214 ARC Development: ALQ-214 ARC Mainline (ML) Integration	1	2022	2	2024
Systems Development: ALQ-214 ARC Development: ARC Verification and Correction of Deficiencies	3	2024	2	2026
Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 1	1	2023	1	2023
Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 2	4	2023	4	2023
Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 3	1	2024	1	2024
Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 4 (DVT)	2	2024	2	2024
Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 5	4	2025	4	2025
Systems Development: Dual Band Decoy EMD: DBD EMD	2	2023	2	2026
Systems Development: Dual Band Decoy EMD: Design Review 1	3	2023	3	2023



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Systems Development: Dual Band Decoy EMD: Design Review 2	4	2023	4	2023
Test and Evaluation: ALQ-214 SW Improvement Testing: ALQ-214 SW Improvement Integrated Testing (IT) on C/D Aircraft	1	2022	1	2023
Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Developmental and Integrated Testing	1	2022	1	2024
Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Operational Testing	1	2024	2	2024
Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Developmental/Integrated Testing/Verification of Deficiencies	3	2024	2	2025
Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Operational Testing'	3	2025	2	2026
Test and Evaluation: Dual Band Decoy Testing: DBD Developmental Testing	3	2024	3	2025
Test and Evaluation: Dual Band Decoy Testing: DBD Integrated Testing/Operational Testing	3	2025	3	2026
Production Milestones: Shop Replaceable Assembly Contract Awards: Contract Award 1	1	2022	1	2022
Production Milestones: Dual Band Decoy Contract Awards: DBD Production Build (PB 1)	2	2024	2	2024
Production Milestones: Dual Band Decoy Contract Awards: DBD Production Build (PB 2)	2	2025	2	2025
Production Milestones: Dual Band Decoy Contract Awards: DBD Full Rate Production (FRP1)	2	2026	2	2026
Production Milestones: Dual Band Decoy Contract Awards: DBD Full Rate Production (FRP2)	1	2027	1	2027
Production Milestones: Dual Band Decoy Contract Awards: DBD Full Rate Production (FRP3)	1	2028	1	2028
Deliveries: IDECM Block 4: IDECM Block 4 FRP 15 Deliveries (20)	1	2022	2	2022
Deliveries: IDECM Block 4: IDECM Block 4 FRP 16 Deliveries (22)	2	2022	1	2023
Deliveries: IDECM Block 4: IDECM Block 4 FRP 17 Deliveries (20)	2	2023	4	2023
Deliveries: IDECM Block 4: IDECM Block 4 FRP 18 Deliveries (10)	4	2023	4	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 2175 / <i>Tactical Air Electronic Warfare</i>	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Deliveries: Shop Replaceable Assembly: Shop Replaceable Assembly Deliveries (17)		2	2023	1	2024
Deliveries: Shop Replaceable Assembly: Shop Replaceable Assembly Deliveries (62)		2	2024	1	2025
Deliveries: Shop Replaceable Assembly: Shop Replaceable Assembly Deliveries (31)		2	2025	1	2026
Deliveries: DBD: DBD PB 1 Deliveries		4	2024	3	2025
Deliveries: DBD: DBD PB 2 Deliveries		4	2025	3	2026
Deliveries: DBD: DBD FRP 1 Deliveries		4	2026	3	2027
Deliveries: DBD: DBD FRP 2 Deliveries		4	2027	3	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3308 / <i>Technology Development</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3308: <i>Technology Development</i>	21.844	8.353	13.127	20.399	-	20.399	27.825	19.558	21.510	22.008	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

PE 0604279N consolidated to PE 0604270N beginning in FY 2017.

**A. Mission Description and Budget Item Justification**

Project Unit 3308 / Technology Development funds efforts that focus on the quick reaction prototyping and fielding of Tactical Electronic Warfare (EW)/countermeasures solutions for increased resilience and survivability, by improving the active electronic self-defense of tactical aircraft. This self-protection provides friendly forces the ability to deploy, survive, operate, maneuver, and regenerate in all domains while under attack as well as strike diverse targets inside adversary air and missile defense networks to destroy mobile power-projection platforms. This Project also includes/enables integrated Aircraft Survivability Equipment (iASE) which improves situational awareness for own-ship, wingman, and distributed command and control. Significant investments have been made in the modular hardware and reprogrammable software resident in ASE capability which is fielded today. Technology Development makes specific investments towards: countermeasure/jammer/receiver algorithm development, Advanced EW Suite capability studies/investigation/analysis, threat data file and model updates as modern threats continue to evolve. These updated data files and algorithms are required to be deployed within hours of release by squadron maintenance personnel to aircraft while still on the ramp or flight deck. This program directly addresses the operational requirement of Strike Tactical Air platforms for optimization of EW/countermeasure solutions across the Department of Navy.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Technology Development	8.353	13.127	20.399	0.000	20.399
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Perform EW vulnerability studies/analysis, product development and test conducted for the ALQ-214 system on the F/A-18 C/D and E/F for both USMC and Navy aircraft. Develop, model and test advanced electronic countermeasure algorithms for USMC and Navy aircraft to defend against modern threats both inside and outside the currently protected RF spectrum. Provide investments for the continuation and development of emerging RF Threat ECM and T&E Capability					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>		<b>Project (Number/Name)</b> 3308 / <i>Technology Development</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Enhancements, addresses current and future threats on the roadmap that are not in the threat library (new threats not in MDFs). Develops advanced hardware-in-the-loop Modeling and Simulation flight test surrogates to keep pace with modern advanced threats in support of currently fielded systems and development and testing of Adaptive Radar Countermeasures (ARC).</p> <p><b><i>FY 2024 Base Plans:</i></b> Continued EW product development and initiation of tests in support of the ALQ-214 system on the F/A-18 E/F for Navy aircraft. Develop, model and test advanced electronic countermeasure algorithms for Navy aircraft to defend against modern threats both inside and outside the currently protected RF spectrum. Provide investments for the continuation and development of emerging Radio Frequency (RF) Threat, Electronic Countermeasures (ECM) and T&amp;E Capability Enhancements, addresses current and future threats on the roadmap that are not in the threat library (new threats not in MDFs). Develops advanced hardware-in-the-loop Modeling and Simulation flight test surrogates to keep pace with modern advanced threats in support of currently fielded systems.</p> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase of \$7.272M is attributed to requirements associated with continued product development costs, initiation of USG Test and Evaluation and ALQ-214 source code modernization efforts.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		8.353	13.127	20.399	0.000	20.399
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
Electronic Warfare/vulnerability studies/analysis, product development and test conducted for strike aircraft across the Future Years Defense Program (FYDP).						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>						Project (Number/Name) 3308 / <i>Technology Development</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Dev - ALQ-214 SW Dev	SS/CPFF	NSMA : Washington, DC	0.000	0.000		3.295	Mar 2023	14.733	Mar 2024	-		14.733	Continuing	Continuing	Continuing
Software Dev - ALQ-214 SW Dev	C/BA	Leidos : Arlington, VA	2.573	3.900	Nov 2021	7.199	May 2023	2.006	Dec 2023	-		2.006	Continuing	Continuing	Continuing
Software Dev - ALQ-214 SW Dev	C/CPFF	Amentum : Crane, IN	0.000	1.400	Apr 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Dev - ALQ-214 SW Dev	WR	TOYON Research : Goleta, CA	0.000	1.000	Apr 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Production Costs no longer funded in FYDP	Various	Various : Various	12.526	0.000		0.000		0.000		-		0.000	0.000	12.526	-
Subtotal			15.099	6.300		10.494		16.739		-		16.739	Continuing	Continuing	N/A
Remarks															
Contractor SWIP and ARC modeling, simulation, and technique optimization development will continue through FY 2024.															
Product Development includes Threat Characterization efforts continuing into FY 2024. Increase in FY24 (\$11.438M) to Navy Systems Management Activity (NSMA) is in support of a Software/Firmware Development Effort to enhance Aircraft Survivability. Decrease in FY24 (\$5.193M) from Leidos as the Adaptive Radar Countermeasures (ARC)															
Mainline Integration and implementation of optimized ARC Threat Techniques effort ends.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Dev - ALQ-214 SW Dev	WR	NAWCWD : Point Mugu, CA	1.166	0.829	Nov 2021	0.667	Nov 2022	0.674	Nov 2023	-		0.674	Continuing	Continuing	Continuing
Software Dev - ALQ-214 SW Dev	C/CPFF	Johns Hopkins : Baltimore, MD	0.735	0.300	Jun 2022	0.481	Nov 2022	0.481	Nov 2023	-		0.481	Continuing	Continuing	Continuing
Software Dev - ALQ-214 SW Dev	C/CPFF	GTRI : Atlanta, GA	0.000	0.223	Nov 2021	0.000		0.000		-		0.000	0.000	0.223	-
Prior Year Support Costs no longer funded in FYDP	Various	Various : Various	1.075	0.000		0.000		0.000		-		0.000	0.000	1.075	-
Subtotal			2.976	1.352		1.148		1.155		-		1.155	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
1319 / 5						PE 0604270N / <i>Electronic Warfare (EW) Development</i>				3308 / <i>Technology Development</i>					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Remarks</b>															
Contractor and Organic SWIP and ARC modeling, simulation, and technique optimization development will continue into FY 2024. Increase in FY24 (\$.007M) at Point Mugu due to inflation.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : Point Mugu, CA	0.518	0.701	Nov 2021	1.485	Nov 2022	1.500	Nov 2023	-		1.500	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.760	Nov 2023	-		0.760	0.000	0.760	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	3.251	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			3.769	0.701		1.485		2.260		-		2.260	Continuing	Continuing	N/A
<b>Remarks</b>															
Organic SWIP and ARC modeling, simulation, and technique optimization development will continue through FY 2024. Increase in FY24 (\$.015M) due to inflation. FY24 (\$.760M) Engineering & Evaluation (Patuxent River, MD) added for threat model development, open/closed loop asset development, platform EW collaboration, and Radio Frequency Compatibility.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Pax River, MD	0.000	0.000		0.000		0.245	Nov 2023	-		0.245	0.000	0.245	-
Subtotal			0.000	0.000		0.000		0.245		-		0.245	0.000	0.245	N/A
<b>Remarks</b>															
FY24 (\$.245M) Program Management Support cost category added for additional oversight of technique optimization.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3308 / <i>Technology Development</i>				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.844	8.353		13.127		20.399		-		20.399	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604270N / *Electronic Warfare (EW) De*

v

Project (Number/Name)

3308 / *Technology Development*

ASE Self Protection Optimization	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Program Milestones		FY22 OFP ▲				FY23 OFP ▲				FY24 OFP ▲				FY25 OFP ▲				FY26 OFP ▲				FY27 OFP ▲				FY28 OFP ▲		
Operational Flight Program (OFP)																												
EW Suite OFP Release		EW21 ▲				EW22 ▲				EW23 ▲				EW24 ▲				EW25 ▲				EW26 ▲				EW27 ▲		
ARC Mainline OFP Release					ARC Build 1 ▲			ARC Build 2 ▲	ARC Build 3 ▲																			
SW/FW DEV&INT Contract Award					NSMA DEV/INT Award ▲				SW/FW INC 2 Mod ▲				SW/FW INC 3 Mod ▲				SW/FW INC 4 Mod ▲				SW/FW INC 5 Mod ▲							
Systems Development																												
SW Threat Analysis, Technique Development and Optimization	FY22 Review ▼				FY23 Review ▼				FY24 Review ▼				FY25 Review ▼				FY26 Review ▼				FY27 Review ▼				FY28 Review ▼			
SW/FW Systems Requirements Review Contract																												
SW/FW Development and Integration Contract																												
Test and Evaluation																												
Suite Level ECM and Integrated Eval																												
SW/FW Development and Integration DT/IT/OT																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>	<b>Project (Number/Name)</b> 3308 / <i>Technology Development</i>	

**Schedule Details**

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
<b>(U) ASE Self Protection Optimization (ASPO)</b>				
Milestones: Program Milestones: FY-22 Operational Flight Program	2	2022	2	2022
Milestones: Program Milestones: FY-23 Operational Flight Program	2	2023	2	2023
Milestones: Program Milestones: FY-24 Operational Flight Program	2	2024	2	2024
Milestones: Program Milestones: FY-25 Operational Flight Program	2	2025	2	2025
Milestones: Program Milestones: FY-26 Operational Flight Program	2	2026	2	2026
Milestones: Program Milestones: FY-27 Operational Flight Program	2	2027	2	2027
Milestones: Program Milestones: FY-28 Operational Flight Program	2	2028	2	2028
Milestones: EW Suite OFP Release: Release-21	2	2022	2	2022
Milestones: EW Suite OFP Release: Release-22	2	2023	2	2023
Milestones: EW Suite OFP Release: Release-23	2	2024	2	2024
Milestones: EW Suite OFP Release: Release-24	2	2025	2	2025
Milestones: EW Suite OFP Release: Release-25	2	2026	2	2026
Milestones: EW Suite OFP Release: Release-26	2	2027	2	2027
Milestones: EW Suite OFP Release: Release-27	2	2028	2	2028
Milestones: ARC Mainline OFP Release: ARC Award	1	2022	1	2022
Milestones: ARC Mainline OFP Release: ARC Build 1	1	2023	1	2023
Milestones: ARC Mainline OFP Release: ARC Build 2	4	2023	4	2023
Milestones: ARC Mainline OFP Release: ARC Build 3	1	2024	1	2024
Milestones: Software/Firmware (SW/FW) Developmental & Integration Contract Award: SW/FW DEV/INT Award 1	2	2023	2	2023
Milestones: Software/Firmware (SW/FW) Developmental & Integration Contract Award: SW/FW DEV/INT Award 2	2	2024	2	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3308 / <i>Technology Development</i>	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Milestones: Software/Firmware (SW/FW) Developmental & Integration Contract Award: SW/FW DEV/INT Award 3		2	2025	2	2025
Milestones: Software/Firmware (SW/FW) Developmental & Integration Contract Award: SW/FW DEV/INT Award 4		2	2026	2	2026
Milestones: Software/Firmware (SW/FW) Developmental & Integration Contract Award: SW/FW DEV/INT Award 5		2	2027	2	2027
Systems Development: Systems Development Reviews: FY-22 Review		1	2022	1	2022
Systems Development: Systems Development Reviews: FY-23 Review		1	2023	1	2023
Systems Development: Systems Development Reviews: FY-24 Review		1	2024	1	2024
Systems Development: Systems Development Reviews: FY-25 Review		1	2025	1	2025
Systems Development: Systems Development Reviews: FY-26 Review		1	2026	1	2026
Systems Development: Systems Development Reviews: FY-27 Review		1	2027	1	2027
Systems Development: Systems Development Reviews: FY-28 Review		1	2028	1	2028
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-22 Analysis		3	2022	1	2023
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-23 Analysis		3	2023	1	2024
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-24 Analysis		3	2024	1	2025
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-25 Analysis		3	2025	1	2026
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-26 Analysis		3	2026	1	2027
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-27 Analysis		3	2027	1	2028
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-28 Analysis		3	2028	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3308 / <i>Technology Development</i>	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-22 Development		2	2022	4	2022
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-23 Development		2	2023	4	2023
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-24 Development		2	2024	4	2024
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-25 Development		2	2025	4	2025
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-26 Development		2	2026	4	2026
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-27 Development		2	2027	4	2027
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-28 Development		2	2028	4	2028
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-22 Optimization		2	2022	4	2022
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-23 Optimization		2	2023	4	2023
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-24 Optimization		2	2024	4	2024
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-25 Optimization		2	2025	4	2025
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-26 Optimization		2	2026	4	2026
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-27 Optimization		2	2027	4	2027
Systems Development: SW Threat Analysis, Technique Development and Optimization: FY-28 Optimization		2	2028	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3308 / <i>Technology Development</i>	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Systems Development: SW/FW Systems Requirements Review Contract: SW/FW Systems Requirements		1	2022	3	2023
Systems Development: SW/FW Development and Integration Contract: SW/FW DEV/INT Inc 1		4	2023	3	2024
Systems Development: SW/FW Development and Integration Contract: SW/FW DEV/INT Inc 2		4	2024	3	2025
Systems Development: SW/FW Development and Integration Contract: SW/FW DEV/INT Inc 3		4	2025	3	2026
Systems Development: SW/FW Development and Integration Contract: SW/FW DEV/INT Inc 4		4	2026	3	2027
Systems Development: SW/FW Development and Integration Contract: SW/FW DEV/INT Inc 5		4	2027	3	2028
Test and Evaluation: Suite Level ECM and Integrated Evaluation: FY-22 ECM/IE		1	2022	4	2022
Test and Evaluation: Suite Level ECM and Integrated Evaluation: FY-23 ECM/IE		1	2023	4	2023
Test and Evaluation: Suite Level ECM and Integrated Evaluation: FY-24 ECM/IE		1	2024	4	2024
Test and Evaluation: Suite Level ECM and Integrated Evaluation: FY-25 ECM/IE		1	2025	4	2025
Test and Evaluation: Suite Level ECM and Integrated Evaluation: FY-26 ECM/IE		1	2026	4	2026
Test and Evaluation: Suite Level ECM and Integrated Evaluation: FY-27 ECM/IE		1	2027	4	2027
Test and Evaluation: Suite Level ECM and Integrated Evaluation: FY-28 ECM/IE		1	2028	4	2028
Test and Evaluation: SW/FW Developmental/Integrated/Operational Testing: SW/FW Inc 1 DT/IT/OT		4	2024	3	2025
Test and Evaluation: SW/FW Developmental/Integrated/Operational Testing: SW/FW Inc 2 DT/IT/OT		4	2025	3	2026
Test and Evaluation: SW/FW Developmental/Integrated/Operational Testing: SW/FW Inc 3 DT/IT/OT		4	2026	3	2027
Test and Evaluation: SW/FW Developmental/Integrated/Operational Testing: SW/FW Inc 4 DT/IT/OT		4	2027	3	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3308 / <i>Technology Development</i>	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Test and Evaluation: SW/FW Developmental/Integrated/Operational Testing: SW/FW Inc 5 DT/IT/OT		4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3309: <i>Assault Survivability Optimization</i>	12.857	23.393	37.058	61.548	-	61.548	70.590	46.043	34.678	29.220	Continuing	Continuing
Quantity of RDT&E Articles	480	2,520	15	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

FY 2024 includes funding required to implement Common Carriage for P-8 and CMV-22 aircraft platforms, Integrated Aircraft Survivability Equipment (iASE) and advanced radio frequency (RF) decoys. P-8 and CMV-22 Common Carriage expands USN expendable carriage capacity and enables near term employment of advanced expendables. This transition aligns additional platforms with F/A-18 and MH-60 to reduce expendable countermeasures logistics footprints, reduce future development and procurement costs, and improves industrial base performance through DOD wide common expendable square form factor. iASE funding required to provide framework to rapidly incorporate advanced expendable countermeasures and software applications. Active Expendable Device (AED) replaces existing active RF expendable (GEN-X) which is obsolete against current threats. RR-203 (passive) RF decoy effort leverages current Army and Air National Guard efforts and the advanced chaff technology used in the F-35 to provide a low cost, high scattering Radar Cross Section (RCS) capability to DoN platforms. Advanced RF active and passive free fall decoys offer stand-alone devices necessary for global naval operations for all USN aircraft deployments for use against networked Integrated Air Defense System (IADS) with coherent radars and provide aircrew with tailored response options of integrated onboard and off-board RF expendable solutions in a dense threat environment. Project continues funding required to implement Multi-Layered Obstructed Brokered Hub (MOB Hub) and integrated Aircraft Survivability Equipment (iASE) capability for F/A-18 aircraft and to continue Common Carriage for USN aircraft platforms. MOB Hub iASE funding is for hardware/software redesign and qualification of the ALE-47 Programmer. This upgrade enables advanced expendable countermeasures to enhance countermeasure response, and provide additional battlespace awareness for own-ship, wingman and other mission participants. MOB Hub iASE replaces obsolete ALE-47 operational flight program and programmer hardware, providing data to the gateway necessary for survivability in the current and future threat scenarios facing USN operational missions. Common Carriage and iASE ALE-47 program develops solutions to aircraft survivability gaps against current and future threat systems. Solutions address the Air Expendable Countermeasures (AECM) requirement for maintaining a portfolio of countermeasures capable of defeating current and surface-to-air and air-to-air threat missile systems to include the development, testing, and rapid fielding of advanced Electro-Optic, Infrared, and Radio Frequency (EO/IR/RF) countermeasures and enhanced employment techniques needed to support Fleet combat operations. Countermeasure dispensing techniques are developed using capability advancements tied to iASE investments by leveraging available sensor data from the iASE suite and aircraft data from the mission computer. Improved countermeasure dispense techniques are rapidly delivered to operational Fleet aircraft through Mission Data File updates via established software update processes. New expendable countermeasure technology developed in industry, by other DoD Components and through other R&D programs can be transitioned to AECM Program of Record to meet the required operational platform survivability without further investment in iASE systems. This Project also includes/enables survivability solutions using existing iASE data which improves situational awareness for own-ship, wingman, and distributed command and control. Resources will be applied to the following areas: 1) Studies and evaluations to optimize employment of current countermeasures and iASE capabilities. 2) Development and demonstration of advanced expendable countermeasures and countermeasure techniques. 3) Testing and evaluation of advanced countermeasures. 4) Development of system software enhancements and integration for the testing and deployment of advanced countermeasure techniques. 5) Development of and upgrades to modeling tools and specialized equipment required to conduct evaluation of advanced countermeasures against proliferating threats.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Assault Survivability Optimization		23.393	37.058	61.548	0.000	61.548
Articles:		2,520	15	-	-	-
FY 2023 Plans: Organic government effort begins hardware/software redesign and qualification for F/A-18 Multi-Layered Obstructed Brokered Hub (MOB Hub) and integrated Aircraft Survivability Equipment (iASE) implementation. Continue ALE-47 Common Carriage Engineering, Manufacturing Development hardware, software and support equipment design and development effort including associated Government efforts. Support the development and integration of the advanced AN/ALE-47 iASE capability to improve countermeasure techniques developed for improved survivability and aircrew situational awareness. Continue development and testing of advanced countermeasure techniques. Perform modeling and simulation to support effectiveness testing of new 1x1x8 advanced countermeasure chaff for F/A-18. Continue development of advanced countermeasures to defeat emerging threats focused on 1x1x8 countermeasures to support transition of Common Carriage. Breakdown of test assets follows: ALE-47 MOB/iASE programmers 15ea.						
FY 2024 Base Plans: Incremental funding for ALE-47 Common Carriage Engineering, Manufacturing Development (EMD) effort. Continue contractor and governments efforts for hardware, software and support equipment design and development for Common Carriage. Begin Common Carriage implementation for P-8 and CMV-22. Support the development and integration of the advanced AN/ALE-47 iASE capability to improve countermeasure techniques developed for improved survivability and aircrew situational awareness. Develop advanced RF decoys to include awarding EMD contract for Active Expendable Device (AED) and government efforts for development of AED and RR-203 (passive) decoy. Perform modeling and simulation to support effectiveness testing of new 1x1x8 advanced countermeasures for MH-60R/S. Continue development and testing of advanced countermeasure techniques.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 includes \$24.490 million to incorporate Common Carriage into P-8 and CMV-22 aircraft, provide additional iASE framework to rapidly incorporate advanced expendable countermeasures and software applications, and develop two new advanced radio frequency (RF) free fall decoys. Common Carriage is required to standardize countermeasures across Services and increase capability/						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>					
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>									FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
lethality/survivability. iASE offers improved shared situational awareness of threat detection/identification and advanced expendable tactical employment capabilities. Advanced RF Countermeasure Expendable Devices (AED and RR-203) replace current legacy active devices (GEN-X) and legacy chaff with modern threat protection capability and offers a tailored response option integrated with onboard and off board solutions.													
Accomplishments/Planned Programs Subtotals									23.393	37.058	61.548	0.000	61.548
<b>C. Other Program Funding Summary (\$ in Millions)</b>													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• PANMC/0182: <i>Air Expendable Countermeasures</i>	4.335	13.070	9.752	-	9.752	8.643	2.531	13.351	17.282	Continuing	Continuing		
• APN-05/0576: <i>ALE-39 to ALE-47/ Common Carriage (OSIP 006-00)</i>	0.000	0.000	0.000	-	0.000	38.066	46.561	65.466	53.256	376.145	579.494		
<b>Remarks</b>													
PANMC 0182 Air Expendables Countermeasures (CM) Common Carriage and advanced radio frequency decoys funding represents only a portion of the total PANMC 0182 Air Expendables CM Budget.													
APN-5/0576 Common Carriage and MOB Hub iASE budget begins in FY 2025.													
<b>D. Acquisition Strategy</b>													
Acquisition strategy is to leverage improvements in air expendable countermeasures technology and integration of existing iASE sensor and platform data to enhance platform survivability on USN and USMC platforms through more effective dispense techniques, investing in enhancements in modeling and simulation tools to better evaluate countermeasure effectiveness against advancing threat systems, upgrading test and evaluation equipment to incorporate current and future threats for effectiveness tests, and developing and demonstrating advanced concept countermeasures for future threats. New advanced countermeasures are then transitioned to the Procurement of Ammunition Navy and Marine Corps appropriation for procurement and fielding. New optimized and advanced countermeasure techniques are delivered via operational Mission Data Files (MDF) to increase aircraft/aircrew survivability. F-35 brings square countermeasures to Fleet operations and provides the opportunity to drastically improve interoperability across USN/USMC, DoD and Coalition warfare operations by employing a Common Carriage solution that entered Engineering and Manufacturing Development for USN Aircraft in FY 2022 for IOC in FY 2026. Common Carriage will standardize countermeasures across Services to increase capability/lethality/survivability and countermeasure load-out to support operations in contested environments. FY 2024 continues implementation of ALE-47 MOB Hub iASE to fully leverage the opportunities of the Common Carriage upgrade. ALE-47 MOB Hub iASE strategy is to utilize government facility for hardware/software redesign, qualification and production of the ALE-47 Programmer for F/A-18 platform integration/test. Advanced RF decoys strategy is to leverage technology and development from various DoD science and technology efforts to design advanced RF decoys for platforms against current and advancing surface-to-air missiles and air-to-air missiles. DoD efforts include Small Business Innovation Research (SBIR) program for development of high resolution radar cross section chaff with													



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
1319 / 5	PE 0604270N / <i>Electronic Warfare (EW) De</i> v	3309 / <i>Assault Survivability Optimization</i>
mmWave coverage, US Army DoD Ordnance Technology Consortium (DOTC) awards for development of advanced Digital RF Expendable/Active Decoy (DREAD), and USAF Air National Guard Foreign Comparative Testing (FCT) of the BriteCloud Digital RF Memory (DRFM) countermeasure.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ALE-47 Common Carriage Expendable Countermeasure Technique Modeling and Simulation	WR	NSWC Crane : Crane, IN	2.371	0.491	Oct 2021	0.558	Oct 2022	0.440	Oct 2023	-		0.440	Continuing	Continuing	Continuing
Advanced RFCM Decoy Modeling and Simulation	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.618	Oct 2023	-		0.618	Continuing	Continuing	Continuing
ALE-47 Common Carriage Radio Frequency Countermeasures Modeling and Simulation	C/CPFF	Booz Allen Hamilton : McClean, VA	0.101	0.249	Dec 2021	0.000		0.258	Dec 2023	-		0.258	Continuing	Continuing	Continuing
Active RF Decoy Development Contract	TBD	TBD : TBD	0.000	0.000		0.000		3.001	Apr 2024	-		3.001	Continuing	Continuing	Continuing
ALE-47 Common Carriage Sys Upgrade Dev Contract	C/FFP	BAE : Austin, TX	0.000	6.683	Sep 2022	2.459	Mar 2023	2.510	Mar 2024	-		2.510	1.805	13.457	13.457
ALE-47 Common Carriage Software Upgrades	WR	FRCSE : Jacksonville, FL	0.000	1.061	Nov 2021	1.567	Nov 2022	2.621	Oct 2023	-		2.621	Continuing	Continuing	Continuing
ALE-47 Common Carriage System Upgrade Development	WR	Various : Various	0.000	2.374	Nov 2021	2.248	Nov 2022	2.571	Oct 2023	-		2.571	Continuing	Continuing	Continuing
ALE-47 Common Carriage System Upgrade Development	WR	FRCSE : Jacksonville, FL	0.000	1.947	Oct 2021	2.383	Oct 2022	5.084	Oct 2023	-		5.084	Continuing	Continuing	Continuing
ALE-47 Common Carriage A-Kit Design	WR	FRCSE : Jacksonville, FL	0.000	0.374	Jun 2022	0.576	Mar 2023	1.251	Oct 2023	-		1.251	Continuing	Continuing	Continuing
ALE-47 Common Carriage Depot Update Planning	MIPR	TBD : TBD	0.000	0.000		0.613	Dec 2022	0.625	Oct 2023	-		0.625	Continuing	Continuing	Continuing
ALE-47 F/A-18 iASE Development	WR	NAWCWD : China Lake, CA	0.000	2.815	Apr 2022	13.695	Oct 2022	15.586	Oct 2023	-		15.586	Continuing	Continuing	Continuing
ALE-47 F/A-18 iASE Software App Dev	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		1.686	Oct 2023	-		1.686	Continuing	Continuing	Continuing
ALE-47 iASE Software Upgrade	WR	FRCSE : Jacksonville, FL	0.000	0.000		1.438	Oct 2022	3.120	Oct 2023	-		3.120	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ALE-47 iASE A-Kit Design/ Drawing	WR	NAWCWD : China Lake, CA	0.000	0.000		0.710	Oct 2022	0.394	Oct 2023	-		0.394	Continuing	Continuing	Continuing
ALE-47 iASE Human Factors	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.137	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
ALE-47 iASE User Training Package/Source Data Update	WR	Various : Various	0.000	0.000		0.422	Jan 2023	0.486	Oct 2023	-		0.486	Continuing	Continuing	Continuing
ALE-47 iASE Development	WR	FRCSE : Jacksonville, FL	0.000	0.000		0.955	Oct 2022	3.513	Oct 2023	-		3.513	Continuing	Continuing	Continuing
ALE-47 iASE Depot Assessment/Standup Planning	MIPR	Various : Various	0.000	0.000		0.055	Jan 2023	0.689	Oct 2023	-		0.689	Continuing	Continuing	Continuing
ALE-47 iASE CASS OTPS	WR	FRCSE : Jacksonville, FL	0.000	0.000		0.000		0.889	Oct 2023	-		0.889	Continuing	Continuing	Continuing
Archive Product Development Efforts	Various	Various : Various	1.409	0.000		0.000		0.000		-		0.000	0.000	1.409	-
Subtotal			3.881	15.994		27.816		45.342		-		45.342	Continuing	Continuing	N/A
Remarks															
FY 2024 \$45.342 million for organic government effort for F/A-18 Multi-Layered Obstructed Brokered Hub (MOB Hub) and integrated Aircraft Survivability Equipment (iASE) implementation and continue Engineering, Manufacturing and Development (EMD) contract to design and develop hardware and software solutions for USN aircraft Countermeasure Dispensing Systems and perform modeling and simulation to optimize Common Carriage countermeasures on USN aircraft platforms incorporating P-8 and CMV-22. Award EMD contract to develop Active Expendable Device (AED) advanced radio frequency (RF) free fall decoy. Begin organic government efforts for develop, modeling and simulation to support AED and RR-203 RF decoys.															
Common Carriage increase of \$4.698 million from FY 2023 to FY 2024 to fund third increment of EMD effort for design and develop of hardware and software solutions for USN aircraft ALE-47 Countermeasure Dispensing Systems. Additional funding also to incorporate Common Carriage for P-8 and CMV-22. Funding level supports modeling and simulation increase from one aircraft in FY 2023 to two aircraft in FY 2024 and two flight test events for each aircraft in FY 2024.															
Common Carriage EMD award changed from 3rd quarter FY 2022 to 4th quarter FY 2022 due to additional time required for negotiations with vendor. FY 2022 reduced Common Carriage EMD first increment award amount based on final negotiations with vendor and established EMD milestones. FY 2022 moved \$2.815M Common Carriage funding to iASE risk reduction effort to mitigate schedule and thermal performance risk.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>						Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
F/A-18 MOB Hub iASE increase of \$8.951 million from FY 2023 to FY 2024 for organic government effort (China Lake, CA/Jacksonville, FL/Patuxent River, MD) to include development of iASE software applications, system security/cyber assessment and implementation, aircraft test instrumentation and assessment of organic repair capability for the iASE Programmer.																	
Advanced RF Decoy increase of \$3.877 million from FY2023 to FY 2024 to award AED EMD contract and perform modeling and simulation for development of advanced RF decoys.																	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
ALE-47 Common Carriage Test Mission Data File Software Development	WR	FRCSE : Jacksonville, FL	0.453	0.228	Jan 2022	0.078	Jan 2023	0.466	Oct 2023	-		0.466	Continuing	Continuing	Continuing		
ALE-47 Advanced RFCM Test Mission Data File Software Development	C/BA	FRCSE : Jacksonville, FL	0.000	0.000		0.000		0.104	Oct 2023	-		0.104	Continuing	Continuing	Continuing		
Active and Passive RF Decoy Development Support	WR	Various : Various	0.000	0.000		0.000		0.648	Oct 2023	-		0.648	Continuing	Continuing	Continuing		
ALE-47 Common Carriage Technical Support	WR	FRC : Various	0.000	0.418	Oct 2021	0.454	Oct 2022	0.899	Oct 2023	-		0.899	Continuing	Continuing	Continuing		
ALE-47 Common Carriage Aircraft Instrumentation	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.503	Oct 2023	-		0.503	Continuing	Continuing	Continuing		
ALE-47 iASE Cyber/ COMSEC/CPI Assessment	WR	Various : Various	0.000	0.000		0.796	Jan 2023	0.885	Oct 2023	-		0.885	Continuing	Continuing	Continuing		
ALE-47 iASE Logistics Supportability Assessment	WR	Various : Various	0.000	0.000		0.425	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing		
ALE-47 iASE Platform Integration Support	WR	FRCSW : San Diego, CA	0.000	0.000		0.511	Jan 2023	0.541	Oct 2023	-		0.541	Continuing	Continuing	Continuing		
ALE-47 iASE Development Support	Various	NAWCAD : Patuxent River, MD	0.000	0.000		0.796	Jan 2023	0.947	Oct 2023	-		0.947	Continuing	Continuing	Continuing		
Archive Support Efforts	Various	Various : Various	0.144	0.000		0.000		0.000		-		0.000	0.000	0.144	-		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.597	0.646		3.060		4.993		-		4.993	Continuing	Continuing	N/A
Remarks															
FY 2024 \$4.993 million for support for ALE-47 Countermeasure Dispensing Systems software design and development for F/A-18 MOB Hub iASE, incorporate and dispense square form factor countermeasures on USN aircraft platforms, and develop advanced RF decoys.															
Common Carriage increase of \$1.336 million from FY 2023 to FY 2024 required for aircraft instrumentation changes, test and evaluation requirements and increase in number of test MDFs from one in FY 2023 to six in FY 2024.															
F/A-18 MOB Hub iASE decrease of \$0.155 million from FY2023 to FY 2024 realigned to meet Common Carriage milestones and planned initial operational capability.															
Advanced RF increase of \$0.752 million from FY 2023 to FY 2024 required for technical support and developmental test MDF for RR-203 to replace current RF decoy inventory with items to defeat current and emerging threats.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	FRCSE - Common Carriage : Jacksonville, FL	0.000	1.406	Oct 2021	0.807	Oct 2022	2.231	Oct 2023	-		2.231	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCAD - Common Carriage : Patuxent River, MD	0.000	0.159	Nov 2021	0.216	Nov 2022	1.125	Oct 2023	-		1.125	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/FFP	Various : Various	0.000	0.339	Feb 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	0.000	1.416	Oct 2021	0.000		1.357	Oct 2023	-		1.357	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCWD - Common Carriage : Pt Mugu, CA	1.166	1.441	Mar 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCWD - Common Carriage : China Lake, CA	0.000	0.000		1.134	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	MH-60R/S Squadron - Common Carriage : TBD	0.000	1.264	Jan 2022	0.000		2.066	Jan 2024	-		2.066	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCWD - iASE : China Lake, CA	0.000	0.000		0.530	Oct 2022	0.549	Oct 2023	-		0.549	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	VX-21 - iASE : Patuxent River, MD	0.000	0.000		0.157	Mar 2023	0.138	Mar 2024	-		0.138	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	VX-21/31 - iASE : Various	0.000	0.000		0.308	Mar 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	COTF - iASE : Norfolk, VA	0.000	0.000		0.245	Mar 2023	0.249	Dec 2023	-		0.249	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	FRCSE- iASE : Jacksonville, FL	0.000	0.000		0.270	Jan 2023	0.541	Oct 2023	-		0.541	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCAD- iASE : Patuxent River, MD	0.000	0.000		0.000		0.358	Oct 2023	-		0.358	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	5.909	0.000		0.000		0.000		-		0.000	0.000	5.909	-
Subtotal			7.075	6.025		3.667		8.614		-		8.614	Continuing	Continuing	N/A
Remarks															
FY 2024 \$8.614 million for Test and Evaluation (T&E) for F/A-18 MOB Hub iASE, Advanced RF decoy engineering, qualification and testing and advanced Common Carriage countermeasure dispense technique optimization flight test events: MH-60R/S infrared and radio frequency (both events ground-to-air).															
Common Carriage increase of \$3.265 million from FY 2023 to FY 2024 due to T&E requirements increase from one test event in FY 2023 to four test events in FY 2024.															
F/A-18 MOB HUB iASE increase of \$0.325 million from FY 2023 to FY 2024 for T&E efforts for iASE implementation to increase ALE-47 programmer capability for F/A-18 aircraft. FY 2024 incorporates test/integration efforts for F/A-18 ALE-47 MOB Hub iASE and MH-60R/S infrared and radio frequency countermeasure ground to air flight tests.															
Advanced RF decoy increase of \$1.357 million for Active Expendable Device (AED) and RR-203 engineering, evaluation, qualification and testing of active and passive decoys. Funding includes RR-203 developmental testing and organic manufacture of Common Carriage prototype magazines.															

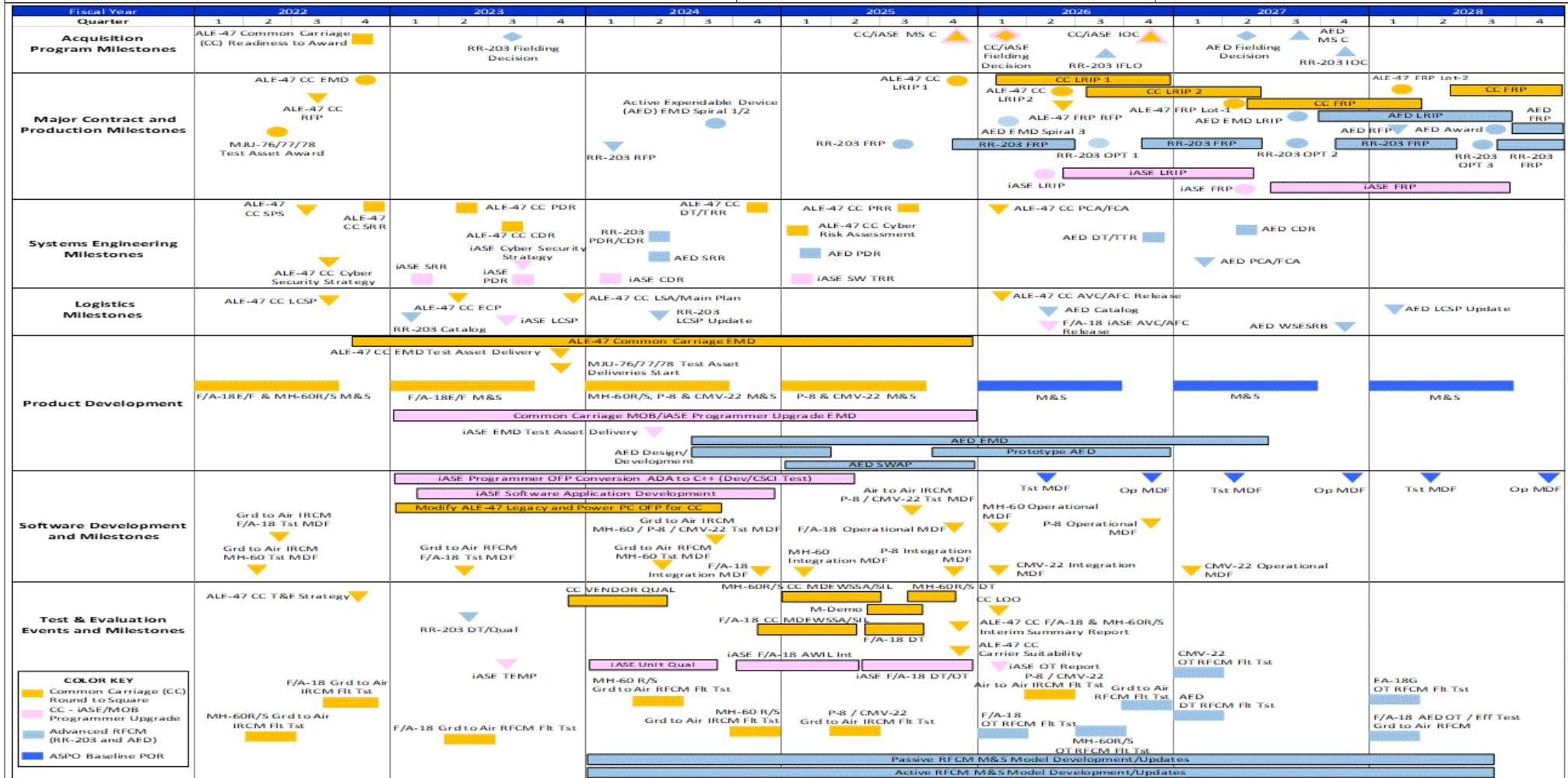
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>						Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ALE-47 Project Management	WR	FRCSE : Jacksonville, FL	0.803	0.728	Oct 2021	2.028	Oct 2022	2.068	Oct 2023	-		2.068	Continuing	Continuing	Continuing
ALE-47 Project Management Support Services	C/CPFF	KBR : Jacksonville, FL	0.000	0.000		0.425	Dec 2022	0.531	Dec 2023	-		0.531	Continuing	Continuing	Continuing
Advanced Countermeasure Dispense Technique Development Project Management	C/CPFF	Georgia Tech Applied Research Corporation : Atlanta, GA	0.162	0.000		0.062	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Archive Management Services Efforts	Various	Various : Various	0.339	0.000		0.000		0.000		-		0.000	0.000	0.339	-
Subtotal			1.304	0.728		2.515		2.599		-		2.599	Continuing	Continuing	N/A
Remarks															
FY 2024 \$2.599 million for Air Expendable Countermeasures (AECM) and ALE-47 project management for MOB Hub iASE, Common Carriage System re-design, advanced RF decoys and countermeasure technique optimization flight test events.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			12.857	23.393		37.058		61.548		-		61.548	Continuing	Continuing	N/A
Remarks															
FY 2024 \$61.548 million required for Common Carriage, Integrated Aircraft Survivability Equipment (iASE) and advanced radio frequency (RF) decoys. Funding includes P-8 and CMV-22 Common Carriage to expand USN expendable carriage capacity and enable near term employment of advanced expendables. Advanced RF decoy funding supports development of Active Expendable Device (AED) and RR-203 to modernize response to current and emerging RF threats.															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5R-1 Program Element (Number/Name)  
PE 0604270N / *Electronic Warfare (EW) De*  
vProject (Number/Name)  
3309 / *Assault Survivability Optimization*



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>	<b>Project (Number/Name)</b> 3309 / <i>Assault Survivability Optimization</i>	

**Schedule Details**

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
<b><i>Assault Survivability Optimization</i></b>				
Acquisition Program and Major Contract Milestones: MJU-76/77/78 Test Assets Award	2	2022	2	2022
Acquisition Program and Major Contract Milestones: ALE-47 CC Request for Proposal (RFP)	3	2022	3	2022
Acquisition Program and Major Contract Milestones: ALE-47 Common Carriage (CC) System Engineering and Manufacturing Development (EMD)	4	2022	4	2022
Acquisition Program and Major Contract Milestones: ALE-47 CC Readiness to Award	4	2022	4	2022
Acquisition Program and Major Contract Milestones: RR-203 Fielding Decision	3	2023	3	2023
Acquisition Program and Major Contract Milestones: RR-203 RFP	1	2024	1	2024
Acquisition Program and Major Contract Milestones: Active Expended Device (AED) EMD Spiral 1/2	3	2024	3	2024
Acquisition Program and Major Contract Milestones: RR-203 FRP	3	2025	3	2025
Acquisition Program and Major Contract Milestones: CC /iASE Milestone (MS) C	4	2025	4	2025
Acquisition Program and Major Contract Milestones: ALE-47 CC Low Rate Initial Production (LRIP) 1	4	2025	4	2025
Acquisition Program and Major Contract Milestones: CC/iASE Fielding Decision	1	2026	1	2026
Acquisition Program and Major Contract Milestones: AED EMD Spiral 3	1	2026	1	2026
Acquisition Program and Major Contract Milestones: ALE-47 CC LRIP 2	2	2026	2	2026
Acquisition Program and Major Contract Milestones: ALE-47 CC Full Rate Production (FRP) RFP	2	2026	2	2026
Acquisition Program and Major Contract Milestones: iASE LRIP	2	2026	2	2026
Acquisition Program and Major Contract Milestones: RR-203 Initial Fleet Load Out (IFLO)	3	2026	3	2026
Acquisition Program and Major Contract Milestones: RR-203 OPT 1	3	2026	3	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Acquisition Program and Major Contract Milestones: CC/iASE Initial Operational Capability (IOC)	4	2026	4	2026
Acquisition Program and Major Contract Milestones: AED Fielding Decision	2	2027	2	2027
Acquisition Program and Major Contract Milestones: ALE-47 CC FRP Lot 1	2	2027	2	2027
Acquisition Program and Major Contract Milestones: iASE FRP	2	2027	2	2027
Acquisition Program and Major Contract Milestones: AED MS C	3	2027	3	2027
Acquisition Program and Major Contract Milestones: AED EMD LRIP	3	2027	3	2027
Acquisition Program and Major Contract Milestones: RR-203 OPT 2	3	2027	3	2027
Acquisition Program and Major Contract Milestones: RR-203 IOC	4	2027	4	2027
Acquisition Program and Major Contract Milestones: ALE-47 CC RFP Lot 2	1	2028	1	2028
Acquisition Program and Major Contract Milestones: AED RFP	1	2028	1	2028
Acquisition Program and Major Contract Milestones: AED FRP	3	2028	3	2028
Acquisition Program and Major Contract Milestones: RR-203 OPT 3	3	2028	3	2028
Systems Engineering Milestones: ALE-47 CC System Performance Specification (SPS)	3	2022	3	2022
Systems Engineering Milestones: ALE-47 CC Cyber Security Strategy	3	2022	3	2022
Systems Engineering Milestones: ALE-47 CC System Requirements Review (SRR)	4	2022	4	2022
Systems Engineering Milestones: ALE-47 CC Preliminary Design Review (PDR)	2	2023	2	2023
Systems Engineering Milestones: iASE SRR	1	2023	1	2023
Systems Engineering Milestones: ALE-47 Critical Design Review (CDR)	3	2023	3	2023
Systems Engineering Milestones: iASE Cyber Security Strategy	3	2023	3	2023
Systems Engineering Milestones: iASE PDR	3	2023	3	2023
Systems Engineering Milestones: iASE CDR	1	2024	1	2024
Systems Engineering Milestones: ALE-47 CC Developmental Test (DT)/Test Readiness Review (TRR)	4	2024	4	2024
Systems Engineering Milestones: RR-203 PDR/CDR	2	2024	2	2024

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>		<b>Project (Number/Name)</b> 3309 / <i>Assault Survivability Optimization</i>	
<b>Events by Sub Project</b>		<b>Start</b>		<b>End</b>	
		<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Systems Engineering Milestones: AED SRR		2	2024	2	2024
Systems Engineering Milestones: ALE-47 CC Cyber Risk Assessment		1	2025	1	2025
Systems Engineering Milestones: AED PDR		1	2025	1	2025
Systems Engineering Milestones: iASE Software (SW) Test Readiness Review (TRR)		1	2025	1	2025
Systems Engineering Milestones: ALE-47 CC Program Readiness Review (PRR)		3	2025	3	2025
Systems Engineering Milestones: ALE-47 CC Physical Configuration Audit (PCA)/ Functional Configuration Audit (FCA)		1	2026	1	2026
Systems Engineering Milestones: AED Developmental (DT)/TTR		4	2026	4	2026
Systems Engineering Milestones: AED PCA/FCA		1	2027	1	2027
Systems Engineering Milestones: AED CDR		2	2027	2	2027
Logistics Milestones: ALE-47 CC Life Cycle Sustainment Plan (LCSP)		3	2022	3	2022
Logistics Milestones: RR-203 Catalog		1	2023	1	2023
Logistics Milestones: ALE-47 Engineering Change Proposal (ECP)		2	2023	2	2023
Logistics Milestones: iASE LCSP		3	2023	3	2023
Logistics Milestones: ALE-47 CC Logistic Support Analysis (LSA)/Maintenance Plan		4	2023	4	2023
Logistics Milestones: RR-203 LCSP Update		2	2024	2	2024
Logistics Milestones: ALE-47 CC Avionics/Airframe Change Release		1	2026	1	2026
Logistics Milestones: AED Catalog		2	2026	2	2026
Logistics Milestones: F/A-18 iASE AVC/AFC Release		2	2026	2	2026
Logistics Milestones: AED Weapon Systems Explosive Safety Review Board (WSERB)		4	2027	4	2027
Logistics Milestones: AED LCSP Update		1	2028	1	2028
Product Development and Platform Qualification: ALE-47 CC Test Assets Delivery		4	2023	4	2023
Product Development and Platform Qualification: MJU-76/77/78 CC Test Assets Delivery Start		4	2023	4	2023
Product Development and Platform Qualification: iASE EMD Test Asset Delivery		2	2024	2	2024
Software Development And Milestones: FY22 Test Mission Data Files		2	2022	2	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Software Development And Milestones: FY23 Test Mission Data Files	2	2023	2	2023
Software Development And Milestones: FY24 Test Mission Data Files	2	2024	2	2024
Software Development And Milestones: FY24 Test Mission Data Files P-8/CMV-22 Ground-to-Air	3	2024	3	2024
Software Development And Milestones: FY24 F/A-18 Integration MDF	4	2024	4	2024
Software Development And Milestones: FY25 MH-60 Integration MDF	1	2025	1	2025
Software Development And Milestones: FY25 Test Mission Data Files P-8/CMV-22 Air-to-Air	3	2025	3	2025
Software Development And Milestones: FY25 F/A-18 Operational MDF	4	2025	4	2025
Software Development And Milestones: FY25 P-8 Integration MDF	4	2025	4	2025
Software Development And Milestones: FY26 MH-60 Operational MDF	1	2026	1	2026
Software Development And Milestones: FY26 CMV-22 Integration MDF	1	2026	1	2026
Software Development And Milestones: FY26 Test MDF	2	2026	2	2026
Software Development And Milestones: FY26 Operational MDF	4	2026	4	2026
Software Development And Milestones: FY26 P-8 Operational MDF	4	2026	4	2026
Software Development And Milestones: FY27 CMV-22 Operational MDF	1	2027	1	2027
Software Development And Milestones: FY27 Test MDF	2	2027	2	2027
Software Development And Milestones: FY27 Operational MDF	4	2027	4	2027
Software Development And Milestones: FY28 Test MDF	2	2028	2	2028
Software Development And Milestones: FY28 Operational MDF	4	2028	4	2028
Test and Evaluation Events and Milestones: FY22 Flight Test MH-60R/S Grd-to-Air IRCM	2	2022	2	2022
Test and Evaluation Events and Milestones: ALE-47 CC Test and Evaluation (T&E) Strategy	4	2022	4	2022
Test and Evaluation Events and Milestones: FY22 Flight Test F/A-18 Grd-to-Air IRCM	4	2022	4	2022
Test and Evaluation Events and Milestones: RR-203 DT/Qualification	2	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>		Project (Number/Name) 3309 / <i>Assault Survivability Optimization</i>	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Test and Evaluation Events and Milestones: FY23 Flight Test F/A-18 Grd-to-Air RFCM		2	2023	2	2023
Test and Evaluation Events and Milestones: iASE Test and Evaluation Master Plan (TEMP)		3	2023	3	2023
Test and Evaluation Events and Milestones: FY24 Flight Test MH-60R/S Grd-to-Air RFCM		2	2024	2	2024
Test and Evaluation Events and Milestones: FY24 Flight Test MH-60R/S Grd-to-Air IRCM		4	2024	4	2024
Test and Evaluation Events and Milestones: FY25 Flight Test P-8/CMV-22 Grd-to-Air IRCM		2	2025	3	2025
Test and Evaluation Events and Milestones: ALE-47 CC F/A-18 & MH-60 Interim Summary Report		4	2025	4	2025
Test and Evaluation Events and Milestones: ALE-47 CC Carrier Suitability		4	2025	4	2025
Test and Evaluation Events and Milestones: ALE-47 CC Letter of Observation (LOO)		1	2026	1	2026
Test and Evaluation Events and Milestones: iASE Operational Test (OT) Report		1	2026	1	2026
Test and Evaluation Events and Milestones: F/A-18 OT RFCM Flight Test		1	2026	1	2026
Test and Evaluation Events and Milestones: FY26 Flight Test P-8/CMV-22 Air-to-Air IRCM		2	2026	2	2026
Test and Evaluation Events and Milestones: MH-60 OT RFCM Flight Test		3	2026	3	2026
Test and Evaluation Events and Milestones: Grd-to-Ar RFCM Flight Test		4	2026	4	2026
Test and Evaluation Events and Milestones: CMV-22 OT RFCM Flight Test		1	2027	1	2027
Test and Evaluation Events and Milestones: AED DT RFCM Flight Test		1	2027	1	2027
Test and Evaluation Events and Milestones: EA-18G OT RFCM Flight Test		1	2028	1	2028
Test and Evaluation Events and Milestones: F/A-18 AED OT/Eff Test Grd-to-Air RFCM Flight Test		1	2028	1	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3327 / <i>MAGTF EW Aviation Development</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3327: <i>MAGTF EW Aviation Development</i>	69.447	12.024	15.121	14.581	-	14.581	14.994	15.305	15.808	16.455	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project unit supports the United States Marine Corps (USMC) development of Marine Air Ground Task Force (MAGTF) Electronic Warfare (EW) and the various elements of its distributed System of Systems (SoS). The SoS addresses MAGTF EW sufficiency gaps in the areas of Electronic Attack (EA) and Electronic Warfare Support (ES) with a multitude of payloads designed for carriage on a variety of organic MAGTF air assets. Payload development plans follow an adaptable, modular and open architecture philosophy to combat the increasing capability gap and enable future growth at a reduced operational and sustainment cost. A key element to this capability is the AN/ALQ-231(V) Intrepid Tiger II program.

The AN/ALQ-231(V)1 pod is the variant of the Intrepid Tiger II pod flown on the AV-8B, F/A-18A-D, and KC-130J platforms. The AN/ALQ-231(V)3 is the variant of the Intrepid Tiger II pod flown on the UH-1Y platform, with plans for future integration on AH-1Z platforms. Plans include future integration of AN/ALQ-231(V) Block X advanced capability and counter-radar upgrades on USMC tilt rotor, fixed wing, rotary wing and unmanned aircraft. The AN/ALQ-231(V)4 is the first implementation of Block X upgrades on MV-22B aircraft and future BLK X integration is planned to include payloads for KC-130J, MQ-9, CH-53K, and AH-1Z platforms. All payload variants are capable of conducting, supporting, and coordinating Electro-Magnetic Spectrum (EMS) operations in the form of EA and ES against Irregular Warfare threats. Additionally, all payloads are scalable and adaptable for emerging threats and are interoperable with the USMC's Electronic Warfare Services Architecture (EWSA). The Intrepid Tiger II capability is designed to be integrated for MAGTF tactical coordination of cyberspace and EW operations via the Cyber Electronic Warfare Coordination Cell (CEWCC).

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Intrepid Tiger II (AN/ALQ-231)	12.024	15.121	14.581	0.000	14.581
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The program will develop, mature, and test Intrepid Tiger II based solutions to radar threats in support of the penetrating jammer mission with plans to release variants of the AN/ALQ-231(V) BLK X Radar Jammer for use on the MV-22 and KC-130J, as well as for future use on other USMC fixed wing, rotary wing, and unmanned aircraft.					
<b>FY 2023 Plans:</b> FY 2023 efforts include continued testing and reporting for hardware and software Developmental Test (DT) on KC-130J in addition to technology evaluation and prototype development of the follow-on platform integration					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy						<b>Date:</b> March 2023					
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>			<b>Project (Number/Name)</b> 3327 / <i>MAGTF EW Aviation Development</i>				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
						<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	
solution for BLK X. Continued development of EWSA in support of evolving Intrepid Tiger II target sets and missions.  <b><i>FY 2024 Base Plans:</i></b> FY 2024 efforts will include the continuation of KC-130J BLK X hardware and software development, continued test and evaluation of counter-radar technique performance of BLK X on KC-130J during Developmental Test (DT), the correction of DT deficiencies, and reporting in preparation for the commencement of Operational Testing (OT). Complete test of V(4) MV-22 variant. Development of EWSA in support of evolving Intrepid Tiger II target sets and missions will continue in FY 2024.  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Decrease from FY 2023 to FY 2024 due to the ramp down of BLK X KC-130J hardware/prototype development as the program progresses through DT.											
<b>Accomplishments/Planned Programs Subtotals</b>						12.024	15.121	14.581	0.000	14.581	
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN/0587: <i>MAGTF EW For Aviation</i>	29.149	24.684	24.901	-	24.901	25.550	26.071	26.609	27.707	171.840	552.023
<b>Remarks</b>											
<b>D. Acquisition Strategy</b> This project unit is part of USMC led efforts to ensure Marine Corps requirements are included in the budget process for the Future Year Defense Program and beyond. These efforts include AN/ALQ-231(V) Intrepid Tiger II Family of Systems, Collaborative Electronic Warfare (EW)/EW Battle Management, and EW Service Architecture (EWSA). These programs are the Marine Corps' initial steps to create systems to distribute EW capability across the battlespace.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>				Project (Number/Name) 3327 / <i>MAGTF EW Aviation Development</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Intrepid Tiger BLK X Hardware Development	WR	NAWCWD : Point Mugu, CA	18.209	1.388	Nov 2021	5.726	Nov 2022	3.554	Nov 2023	-		3.554	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : Patuxent River, MD	4.427	0.722	Nov 2021	1.326	Nov 2022	1.320	Nov 2023	-		1.320	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCWD : Point Mugu, CA	34.453	6.347	Nov 2021	5.734	Nov 2022	6.527	Nov 2023	-		6.527	Continuing	Continuing	Continuing
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	0.007	0.000		0.000		0.000		-		0.000	0.000	0.007	-
Systems Engineering	WR	Various : Various	0.000	0.270	Nov 2021	0.000		0.564	Nov 2023	-		0.564	0.000	0.834	-
Subtotal			57.096	8.727		12.786		11.965		-		11.965	Continuing	Continuing	N/A
Remarks															
Funding decrease from FY 2023 to FY 2024 due to ramp down of BLK X KC-130J hardware/prototype development.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Eng & Tech Services	Various	Various : Various	1.722	0.452	Nov 2021	0.285	Nov 2022	0.533	Nov 2023	-		0.533	Continuing	Continuing	Continuing
Prior year Support no longer funded in FYDP	Various	Various : Various	0.430	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			2.152	0.452		0.285		0.533		-		0.533	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	2.798	0.300	Nov 2021	0.900	Nov 2022	1.122	Nov 2023	-		1.122	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : Point Mugu, CA	6.960	2.320	Nov 2021	1.000	Nov 2022	0.902	Nov 2023	-		0.902	Continuing	Continuing	Continuing



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>													<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604270N / <i>Electronic Warfare (EW) Development</i>				<b>Project (Number/Name)</b> 3327 / <i>MAGTF EW Aviation Development</i>					
<b>Test and Evaluation (\$ in Millions)</b>															
				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	Various	Various : Various	0.385	0.223	Nov 2021	0.142	Nov 2022	0.051	Nov 2023	-		0.051	Continuing	Continuing	Continuing
<b>Subtotal</b>			10.143	2.843		2.042		2.075		-		2.075	Continuing	Continuing	N/A
<b>Management Services (\$ in Millions)</b>															
				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Travel	Various	Various : Various	0.056	0.002	Oct 2021	0.008	Nov 2022	0.008	Nov 2023	-		0.008	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.056	0.002		0.008		0.008		-		0.008	Continuing	Continuing	N/A
			<b>Prior Years</b>	<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			69.447	12.024		15.121		14.581		-		14.581	Continuing	Continuing	N/A
<b>Remarks</b>															

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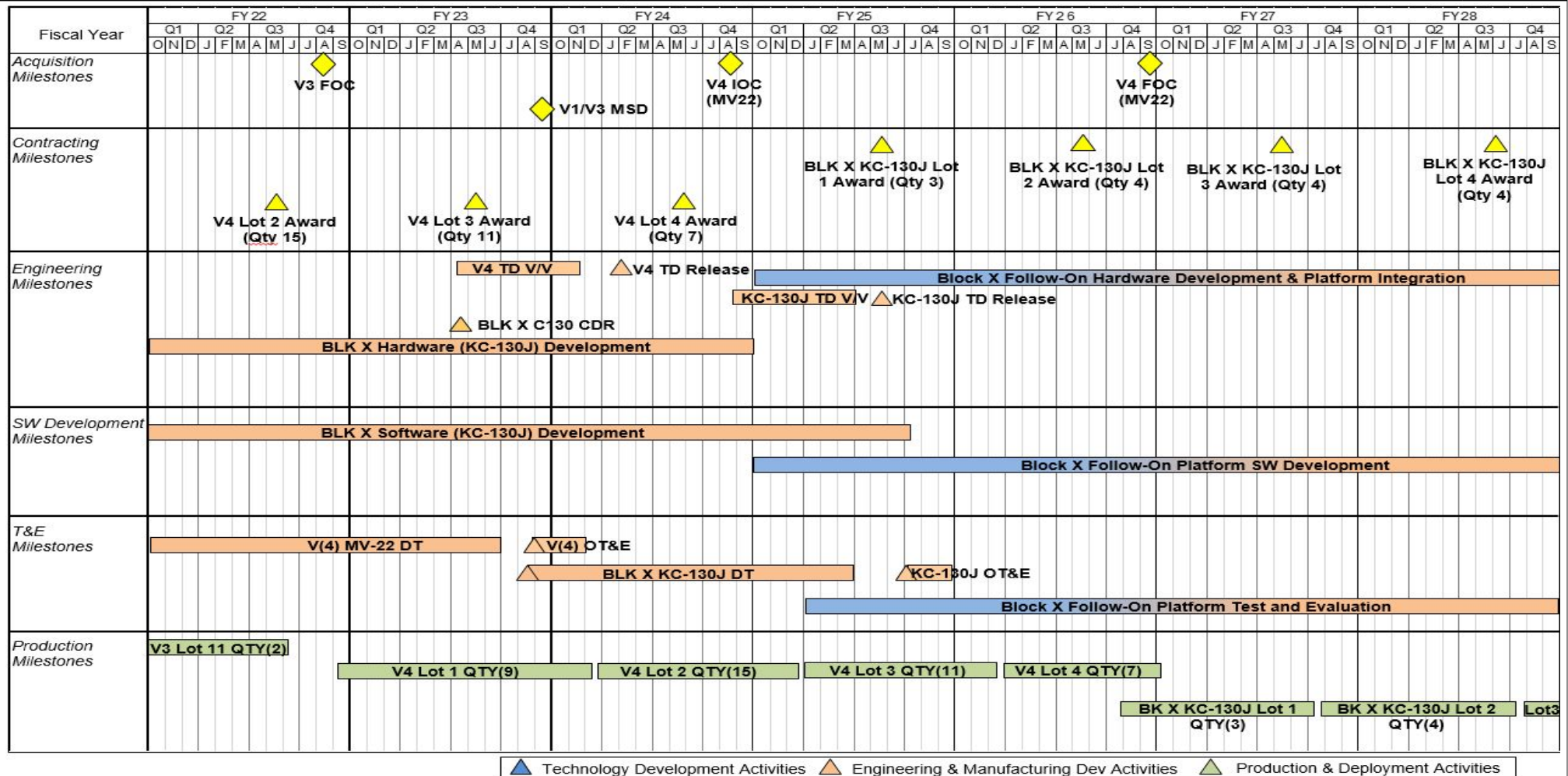
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604270N / Electronic Warfare (EW) De  
v

Project (Number/Name)  
3327 / MAGTF EW Aviation Development



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604270N / *Electronic Warfare (EW) De*

v

## Project (Number/Name)

3327 / *MAGTF EW Aviation Development*

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Intrepid Tiger II (AN/ALQ-231)</i></b>				
Engineering Milestones: AN/ALQ-231(V)4 TD Fleet Release	2	2024	2	2024
Engineering Milestones: AN/ALQ-231(V)1 BLK X KC-130J TD Fleet Release	3	2025	3	2025
Systems Development: AN/ALQ-231(V)1 BLK X KC-130J Hardware Development	1	2022	4	2024
Systems Development: AN/ALQ-231(V)1 BLK X Software Development	1	2022	3	2025
Systems Development: BLK X Follow-On Hardware Development & Platform Integration	1	2025	4	2028
Systems Development: BLK X Follow-On Software Development	1	2025	4	2028
Test & Evaluation: AN/ALQ-231(V)4 MV-22 Developmental Test (DT)	1	2022	3	2023
Test & Evaluation: AN/ALQ-231(V)4 OT&E	4	2023	1	2024
Test & Evaluation: AN/ALQ-231(V)1 BLK X KC-130J Developmental Test	4	2023	2	2025
Test & Evaluation: AN/ALQ-231(V)1 BLK X KC-130J OT&E	4	2025	4	2025
Test & Evaluation: BLK X Follow-On Test and Evaluation	2	2025	4	2028
<b><i>Production Milestones</i></b>				
AN/ALQ-231(V)4 Production Lot 2 (Qty 15)	3	2022	3	2022
AN/ALQ-231(V)4 Production Lot 3 (Qty 11)	3	2023	3	2023
AN/ALQ-231(V)4 Production Lot 4 (Qty 7)	3	2024	3	2024
AN/ALQ-231(V)1 BLK X KC-130J Production Lot 1 (Qty 3)	3	2025	3	2025
AN/ALQ-231(V)1 BLK X KC-130J Production Lot 2 (Qty 4)	3	2026	3	2026
AN/ALQ-231(V)1 BLK X KC-130J Production Lot 3 (Qty 4)	3	2027	3	2027
AN/ALQ-231(V)1 BLK X KC-130J Production Lot 4 (Qty 4)	3	2028	3	2028
Deliveries: AN/ALQ-231(V)3 Lot 11 Deliveries (Qty 2)	1	2022	3	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Development</i>	Project (Number/Name) 3327 / <i>MAGTF EW Aviation Development</i>	
		Start		End
Events by Sub Project		Quarter	Year	Quarter
Deliveries: AN/ALQ-231(V)4 Lot 1 Deliveries (Qty 9)		4	2022	1
Deliveries: AN/ALQ-231(V)4 Lot 2 Deliveries (Qty 15)		1	2024	1
Deliveries: AN/ALQ-231(V)4 Lot 3 Deliveries (Qty 11)		2	2025	1
Deliveries: AN/ALQ-231(V)4 Lot 4 Deliveries (Qty 7)		2	2026	1
Deliveries: AN/ALQ-231(V)1 BLK X KC-130J Production Lot 1 (Qty 3)		4	2026	3
Deliveries: AN/ALQ-231(V)1 BLK X KC-130J Production Lot 2 (Qty 4)		4	2027	4
Deliveries: AN/ALQ-231(V)1 BLK X KC-130J Production Lot 3 (Qty 4)		4	2028	4

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Dev</i>				Project (Number/Name) 9999 / <i>Congressional Adds</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	0.000	0.000	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
FY 2023 Congressional Add: Filter Technology for Electronic Warfare Mitigation.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
<i><b>Congressional Add:</b></i> Filter technology for electronic warfare mitigation	0.000	10.000
<i><b>FY 2022 Accomplishments:</b></i> N/A		
<i><b>FY 2023 Plans:</b></i> Funding will support Congressional Add efforts for filter technology for electronic warfare mitigation.		
<b>Congressional Adds Subtotals</b>	0.000	10.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
FY 2023 Congressional Add for Filter Technology for Electronic Warfare Mitigation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Dev</i>						Project (Number/Name) 9999 / <i>Congressional Adds</i>			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Congressional Add TBD	TBD	TBD : TBD	0.000	0.000		10.000	Sep 2023	0.000		-		0.000	0.000	10.000	-
Subtotal			0.000	0.000		10.000		0.000		-		0.000	0.000	10.000	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		10.000		0.000		-		0.000	0.000	10.000	N/A
Remarks															

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PE 0604270N: *Electronic Warfare (EW) Dev*  
Navy

**Volume 3 - 427**

**R-1 Program Element (Number/Name)**  
PE 0604270N / *Electronic Warfare (EW) De*  
v

R-1 Line #117

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604270N / <i>Electronic Warfare (EW) Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 9999</i>				
Filter Technology for Electronic Warfare Mitigation: Filter Technology for Electronic Warfare Mitigation	3	2023	4	2024



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	45.452	40.496	45.645	35.376	-	35.376	34.611	34.252	34.502	35.920	71.712	377.966
3390: VH-92A Improvements	45.452	40.496	45.645	35.376	-	35.376	34.611	34.252	34.502	35.920	71.712	377.966
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 429												
A. Mission Description and Budget Item Justification												
The VH-92A is the replacement helicopter for the VH-3D and the VH-60N, the aircraft currently used by Marine Helicopter Squadron One (HMX-1) to transport the President, Vice President, and other distinguished officials as directed by the White House Military Office. The VH-3D and VH-60N are approaching the end of their service lives. Funding for the VH-92A program supports Engineering and Manufacturing Development Phase activities, including: integration of systems; production, qualification, and support of test articles; development of logistics products; and demonstration of system integration, interoperability, safety, utility, and improvements/upgrades.												
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.												
B. Program Change Summary (\$ in Millions)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total				
Previous President's Budget				41.847	45.645	40.448	-	40.448				
Current President's Budget				40.496	45.645	35.376	-	35.376				
Total Adjustments				-1.351	0.000	-5.072	-	-5.072				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-							
• Congressional Rescissions				-	-							
• Congressional Adds				-	-							
• Congressional Directed Transfers				-	-							
• Reprogrammings				-	-							
• SBIR/STTR Transfer				-1.351	0.000							
• Program Adjustments				0.000	0.000	-5.309	-	-5.309				
• Rate/Misc Adjustments				0.000	0.000	0.237	-	0.237				
Change Summary Explanation												
Cost: FY 2024 funding request was adjusted since the previous President's Budget submission for the following: reduction of \$5.309M to support Marine Corps program adjustments and an increase of \$0.237M for working capital fund rate adjustments.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development	
<div>Technical: Not applicable.</div> <div>Schedule: Not applicable.</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development				Project (Number/Name) 3390 / VH-92A Improvements			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3390: VH-92A Improvements	45.452	40.496	45.645	35.376	-	35.376	34.611	34.252	34.502	35.920	71.712	377.966
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 429												
A. Mission Description and Budget Item Justification												
VH-92A Product Improvements addresses pre-planned product improvement requirements written into the Capabilities Development Document approved by Joint Requirements Oversight Committee in Jan 2013 and updated for Milestone C. The VH-92A Improvement efforts are to provide near and long term improvements to the fleet, focusing on documented deficiencies and enhancements related to mission systems, maintainability and reliability and obsolescence issues; as well as, address deficiencies identified at the completion of Initial Operational Test and Evaluation (IOT&E); development associated with Mission Communications System (MCS) upgrades (both software and hardware), enhancements to Wideband Line of Sight (WBLOS), distributed network communications, vehicle performance enhancements, high hot performance (Power Margin) and cockpit upgrades.												
Commencing in FY23 costs to maintain the test aircraft are being realigned from test and evaluation to product improvement development to align with the supported work.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Title: Product Improvement Development							20.706	32.453	27.245	0.000	27.245	
Articles:							-	-	-	-	-	
FY 2023 Plans:												
Continue developing product improvements for incremental incorporation to the VH-92A capability baseline to include enhancements to advanced capabilities, cockpit upgrades, GFE, shipboard interoperability, MCS hardware/software upgrades, commence the developing product improvements for distributed network communications, new mission software capabilities, vehicle performance enhancements and high hot performance (Power Margin Inc 1) and maintain test aircraft.												
FY 2024 Base Plans:												
Continue developing product improvements for incremental incorporation to the VH-92A capability baseline to include enhancements to advanced capabilities, cockpit upgrades, GFE, shipboard interoperability, MCS hardware/software upgrades, commence the developing product improvements for distributed network												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development		Project (Number/Name) 3390 / VH-92A Improvements	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
communications, new mission software capabilities, vehicle performance enhancements and high hot performance (Power Margin Inc 1) and maintain test aircraft.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY2023 to FY2024 due to reduced advanced capabilities GFE efforts.					
<b>Title:</b> Test and Evaluation  <b>Articles:</b>	15.852 -	6.864 -	1.682 -	0.000 -	1.682 -
<b>FY 2023 Plans:</b> Continue follow on T&E for product improvements to include MCS upgrades (both software and hardware), enhancements to advanced capabilities, cockpit upgrades, shipboard interoperability, commence T&E efforts for MCS, distributed network communications, new mission software capabilities, vehicle performance enhancements and high hot performance (Power Margin Inc 1).  <b>FY 2024 Base Plans:</b> Continue follow on T&E for product improvements to include MCS upgrades (both software and hardware), enhancements to advanced capabilities, cockpit upgrades, shipboard interoperability, commence T&E efforts for MCS, distributed network communications, new mission software capabilities, vehicle performance enhancements and high hot performance (Power Margin Inc 1).  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 is due to maintenance efforts transitioning to sustainment.					
<b>Title:</b> Program Management  <b>Articles:</b>	3.938 -	6.328 -	6.449 -	0.000 -	6.449 -
<b>FY 2023 Plans:</b> Continue program management support for technical reviews, risk reduction activities, contractor deliverables, configuration management, training and information assurance/cyber security. Conduct Level 3 physical security					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604273M / <i>Executive Helo Development</i>		<b>Project (Number/Name)</b> 3390 / <i>VH-92A Improvements</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
for the Presidential Helicopters Support Facility (PHSF) and continue PHSF security upgrades as required by the OPNAV instruction 5530.14						
<b><i>FY 2024 Base Plans:</i></b> Continue program management support for technical reviews, risk reduction activities, contractor deliverables, configuration management, training and information assurance/cyber security. Conduct Level 3 physical security for the Presidential Helicopters Support Facility (PHSF) and continue PHSF security upgrades as required by the OPNAV instruction 5530.14						
<b><i>FY 2024 OCO Plans:</i></b> N/A						
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase from FY2023 to FY2024 to support inflation for ongoing Program Management efforts.						
<b>Accomplishments/Planned Programs Subtotals</b>		40.496	45.645	35.376	0.000	35.376
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
VH-92A Product Improvements will include trade studies, test and evaluation, cost-benefit analyses, and risk-reduction efforts to address improvements for aircraft capability, safety, operational weight, mission availability, component reliability, maintainability, software, high hot performance (Power Margin Inc 1) and obsolescence.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development				Project (Number/Name) 3390 / VH-92A Improvements					
Product Development (\$ in Millions)															
				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development - WBLOS	C/CPIF	Sikorsky Aircraft Corporation : Stratford, CT	2.891	0.000		0.000		0.000		-		0.000	0.000	2.891	2.891
Product Development - GFE	Various	Various : Various	12.590	9.364	Jan 2022	9.615	Jan 2023	2.665	Jan 2024	-		2.665	37.530	71.764	-
Systems Engineering	Various	NAVAIR : Patuxent River, MD	0.019	0.019	May 2022	0.026	May 2023	0.026	May 2024	-		0.026	45.469	45.559	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	1.064	1.872	Nov 2021	4.799	Dec 2022	4.928	Dec 2023	-		4.928	13.148	25.811	-
Product Improvements	Various	Various : Various	0.000	9.451	Feb 2022	18.013	Feb 2023	19.626	Feb 2024	-		19.626	47.187	94.277	-
Subtotal			16.564	20.706		32.453		27.245		-		27.245	143.334	240.302	N/A
Remarks															
Notes:															
Product Development GFE - Funds are required for Advanced Capabilities GFE for the Engineering Development Model (EDM) 1 and EDM 2 Aircraft and future ADCAP product improvements.															
Systems Engineering (Various) - Engineering Support Contracts required to support Test Dissemination/Instrumentation Data Storage.															
Systems Engineering (NAWCAD Patuxent River) - Funds are required for Engineering support for hardware maturation, Reliability and Maintainability analysis and Software Support Activity. Including additional system engineering requirements to support P3I developmental efforts listed in the Capabilities Description Document.															
Product Improvements (Various) - Increase from FY23 to FY24 is required to support high hot hover performance. Funds are required to Supports Mission Communications System 5.0 upgrades including Mobile Users Objective System (MUOS), Wideband Beyond Line of Sight communications, and LTE, distributed network communications, vehicle performance enhancements, high hot performance and cockpit upgrades. Includes developmental efforts associated with correction of deficiencies identified during Test and Evaluation such as component reliability and onboard systems performance as well as approved product improvements of the VH-92A.															
Test and Evaluation (\$ in Millions)															
				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	24.321	15.852	Nov 2021	6.717	Dec 2022	1.532	Dec 2023	-		1.532	41.749	90.171	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development				Project (Number/Name) 3390 / VH-92A Improvements					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	NAWCWD : China Lake, CA	0.662	0.000		0.000		0.000		-		0.000	0.000	0.662	-
Operational Test & Evaluation (OT&E)	Various	COTF : Norfolk, VA	0.000	0.000		0.147	Dec 2022	0.150	Dec 2023	-		0.150	5.305	5.602	-
Subtotal			24.983	15.852		6.864		1.682		-		1.682	47.054	96.435	N/A
Remarks															
Notes: Developmental Test & Evaluation & Operational Test & Evaluation - Funding is required for technical and engineering support for Integrated Test & Evaluation of the VH-92A aircraft; as well as, for the continued maintenance and testing of the two (2 Qty) Engineering Development Model test aircraft. Support efforts include maintenance of test aircraft, documentation review, test planning, operational test design, test analysis and reporting and test operations.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	NAVAIR : Patuxent River, MD	1.851	1.870	Nov 2021	1.418	Dec 2022	1.445	Dec 2023	-		1.445	4.368	10.952	-
Program Management Support	Various	NAWCAD : Patuxent River, MD	1.554	1.483	Nov 2021	3.774	Dec 2022	3.845	Dec 2023	-		3.845	8.718	19.374	-
Program Management Support	Various	NAVSEA : Washington, DC	0.500	0.510	Nov 2021	0.882	Dec 2022	0.882	Dec 2023	-		0.882	5.300	8.074	-
Program Management Support	WR	FAA : Washington, DC	0.000	0.000		0.102	Dec 2022	0.120	Dec 2023	-		0.120	1.743	1.965	-
Transportation	Various	NAVAIR : Patuxent River, MD	0.000	0.025	Oct 2021	0.025	Oct 2022	0.027	Oct 2023	-		0.027	0.071	0.148	-
Travel	Various	NAVAIR : Patuxent River, MD	0.000	0.050	Oct 2021	0.127	Oct 2022	0.130	Oct 2023	-		0.130	0.409	0.716	-
Subtotal			3.905	3.938		6.328		6.449		-		6.449	20.609	41.229	N/A
Remarks															
Notes:															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development						Project (Number/Name) 3390 / VH-92A Improvements			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support - Funding is required for Level 3 physical security for the Presidential Helicopters Support Facility (PHSF) and PHSF security upgrades as required by the OPNAV instruction 5530.14; as well as, Program Management support of technical reviews, risk reduction activities, contractor deliverables, configuration management, training and information assurance/cyber security.															
Congressional mandated SBIR is budgeted in Program Management Support Cost Category.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			45.452	40.496		45.645		35.376		-		35.376	210.997	377.966	N/A
Remarks															



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development					Project (Number/Name) 3390 / VH-92A Improvements				

Proj 3390	FY 2022				FY2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Test & Evaluation																												
	FOT&E																											
Product Improvements																												
	Improvements & Upgrades																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604273M / Executive Helo Development	Project (Number/Name) 3390 / VH-92A Improvements

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3390				
Test & Evaluation: Follow-On Test & Evaluation	1	2022	1	2027
Product Improvements: Product Improvement and Upgrades	2	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer (NGJ)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	3,671.497	230.396	54.679	40.477	-	40.477	87.422	66.918	59.357	26.881	0.000	4,237.627
0557: Next Generation Jammer	3,671.497	230.396	54.679	40.477	-	40.477	87.422	66.918	59.357	26.881	0.000	4,237.627
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 445												
A. Mission Description and Budget Item Justification The Next Generation Jammer Mid-Band (NGJ-MB)(formerly known as Next Generation Jammer Increment 1) is the next step in the evolution of Airborne Electronic Attack (AEA) and is a critical capability necessary to address current, emerging, and evolving Electronic Warfare gaps, ensure kill chain wholeness against growing threat capabilities and capacity, keep pace with enemy threat weapon systems' advancements, and support the continuous expansion of the AEA mission areas that exceed the capability of currently fielded systems. NGJ-MB will utilize enhanced techniques and tactics to deliver significantly improved radar and communications jamming effectiveness as well as other classified capabilities. Utilizing an Open Systems Architecture that supports software and hardware updates to rapidly counter emergent and evolving threats, NGJ-MB is a key enabler and force multiplier for operations across the spectrum of missions defined in the Defense Strategic Guidance, including strike warfare, projecting power in highly contested environments, and counterinsurgency/irregular warfare. NGJ-MB will also address the shortfalls in scalability, flexibility, supportability, interoperability, availability, and capability of the existing AN/ALQ-99 Tactical Jamming System.  This Program Element (PE 0604274N) supports the AN/ALQ-249 NGJ-MB program. NGJ-MB will address AEA capability and sufficiency gaps against enemy threats operating in the middle frequency bands of the electromagnetic spectrum. In addition, this PE supports NGJ-MB Extended (MBX), which involves an Engineering Change Proposal (ECP) to the current NGJ-MB system that will extend the upper frequency coverage limit to counter modern and adaptive threats. This modification will improve frequency range of the NGJ-MB system and enhance the survivability of the platform and protected entities against emerging threats. In total, NGJ-MB will provide the ability to effectively engage enemy threats from increased stand-off distances, employ increased capacity (number of jamming assignments) against enemy targets, and support agile employment by operators. The NGJ-MB system will be integrated on the EA-18G tactical aircraft and will augment and then replace the legacy AN/ALQ-99 Tactical Jamming System in the middle frequency bands. NGJ-MB is a Cooperative development and production program with the Royal Australian Air Force (RAAF).												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604274N / Next Generation Jammer (NGJ)			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	235.407	54.679	8.013	-	8.013
Current President's Budget	230.396	54.679	40.477	-	40.477
Total Adjustments	-5.011	0.000	32.464	-	32.464
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.011	0.000			
• Program Adjustments	0.000	0.000	32.449	-	32.449
• Rate/Misc Adjustments	0.000	0.000	0.015	-	0.015
<b>Change Summary Explanation</b>					
Funding: FY2024 funding request increased by \$32.464M for the addition of NGJ-MB Extended (MBX) ECP and to complete Verification of Correction of Deficiencies (VCD) in FY 2024 for the baseline program.					
Technical/Cost: NGJ-MB Extended (MBX) has been added to upgrade to the current NGJ-MB system that will extend the upper frequency coverage limit to counter modern and adaptive threats. This modification will improve frequency range of the NGJ-MB system and enhance the survivability of the platform and protected entities against emerging threats.					
Schedule: Schedule updated to add MBX effort with design and development beginning in FY 2024.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer ( NGJ)				Project (Number/Name) 0557 / Next Generation Jammer			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0557: Next Generation Jammer	3,671.497	230.396	54.679	40.477	-	40.477	87.422	66.918	59.357	26.881	0.000	4,237.627
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 445												
A. Mission Description and Budget Item Justification												
This Program Element (PE 0604274N) supports the AN/ALQ-249 NGJ-MB program. NGJ-MB will address AEA capability and sufficiency gaps against enemy threats operating in the middle frequency bands of the electromagnetic spectrum. In addition, this PE supports NGJ-MB Extended (MBX), which involves an Engineering Change Proposal (ECP) to the current NGJ-MB system that will extend the upper frequency coverage limit to counter modern and adaptive threats. This modification will improve frequency range of the NGJ-MB system and enhance the survivability of the platform and protected entities against emerging threats. In total, NGJ-MB will provide the ability to effectively engage enemy threats from increased stand-off distances, employ increased capacity (number of jamming assignments) against enemy targets, and support agile employment by operators. The NGJ-MB system will be integrated on the EA-18G tactical aircraft and will augment and then replace the legacy AN/ALQ-99 Tactical Jamming System in the middle frequency bands. NGJ-MB is a Cooperative development and production program with the Royal Australian Air Force (RAAF).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Next Generation Jammer Mid-Band Primary Hardware Development  Articles:  FY 2023 Plans: N/A  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A								82.979	0.000	0.000	0.000	0.000
								-	-	-	-	-
Title: Next Generation Jammer Mid-Band Systems Engineering  Articles:  FY 2023 Plans: Continue Systems Engineering efforts, which will support system performance specification verification, including flight and chamber test events. Perform Systems Engineering efforts in preparation for Operational Test Readiness Review (OTRR) and entry in to Operational Test. Continue tracking Reliability & Maintainability								26.255	3.353	0.000	0.000	0.000
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer ( NGJ)		Project (Number/Name) 0557 / Next Generation Jammer		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
(R&M) metrics as test continues and perform Systems Engineering efforts to track pertinent issues and deficiencies to resolution.  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreases from FY 2023 to FY 2024 due to baseline NGJ-MB program engineering efforts ending.						
Title: Next Generation Jammer Mid-Band Integration  Articles:  FY 2023 Plans: Ongoing support to System Configuration Set (SCS) software H-Build during NGJ-MB Integrated Test and Evaluation to meet Operation Test Readiness Review (OTRR) entry criteria, support Initial Operational Test and Evaluation (IOT&E) and NGJ-MB IOC. Support to include continued SIL testing and resolution of priority software anomalies discovered during NGJ-MB developmental flight test. Provide engineering and direct support to T&E team. Provide aircrew and maintenance training for NGJ-MB.  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreases from FY 2023 to FY 2024 due to baseline NGJ-MB program integration efforts ending.		48.899 -	11.246 -	0.000 -	0.000 -	0.000 -
Title: Next Generation Jammer Mid-Band Test and Evaluation  Articles:  FY 2023 Plans: Complete execution of NGJ-MB aeromechanical IT-C2 phase, Capabilities Based Test & Evaluation (CBT&E) and Initial Operational Test & Evaluation (IOT&E). IT-C2 includes finalizing aeroelastic survey, loads, noise & vibration, flying qualities, performance, and separation & jettison flight testing in support of NATOPS flight clearance development and approvals. CBT&E includes the conduct of advanced Airborne Electronic Attack		71.311 -	39.916 -	15.077 -	0.000 -	15.077 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer ( NGJ)		Project (Number/Name) 0557 / Next Generation Jammer		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
mission scenarios to develop initial Tactics, Techniques and Procedures and where possible, execute early Operational Test events to reduce the overall duration of the IOT&E period and support IOC. IOT&E includes completion of operational effectiveness and suitability testing of the EA-18G / NGJ-MB system to support the recommendation for Fleet introduction.  <b>FY 2024 Base Plans:</b> Complete Verification of Correction of Deficiencies (VCD) from NGJ-MB test events.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding decrease from FY 2023 to FY 2024 as baseline NGJ-MB completes IOT&E in FY 2023 and begins VCD in FY 2024.						
<b>Title:</b> Next Generation Jammer Mid-Band Extended  <b>Articles:</b>		0.000 -	0.000 -	25.400 -	0.000 -	25.400 -
<b>FY 2023 Plans:</b> N/A  <b>FY 2024 Base Plans:</b> The NGJ-MB Extended (MBX) effort will be initiated in order to increase the capability to address the upper frequency coverage limit to cover current key threats. Efforts include conducting a System Requirements Review (SRR) and defining subsystem requirements, assessing risk reduction trades and early design efforts, conducting a system Preliminary Design Review, and beginning aircraft/software integration efforts, developmental test and all support and management services associated with MBX.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding increases from FY 2023 to FY 2024 due to initiating MBX design and development effort.						
<b>Title:</b> Next Generation Jammer Mid-Band Support & Management Services  <b>Articles:</b>		0.952 -	0.164 -	0.000 -	0.000 -	0.000 -
<b>FY 2023 Plans:</b>						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy								<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604274N / Next Generation Jammer (NGJ)				<b>Project (Number/Name)</b> 0557 / Next Generation Jammer			

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Provide Support and Management Services associated with the NGJ-MB Program.  <b>FY 2024 Base Plans:</b> N/A  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding decreases from FY 2023 to FY 2024 due to baseline NGJ-MB program support & management services efforts ending.					
<b>Accomplishments/Planned Programs Subtotals</b>	230.396	54.679	40.477	0.000	40.477

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN/0591: Next Generation Jammer (NGJ)	255.393	463.146	426.396	-	426.396	455.001	448.263	480.017	440.755	5,187.134	8,319.840
• APN/0505: F-18E/F and EA-18G Modernization and Sustainment	445.721	552.849	605.416	-	605.416	531.235	573.367	592.884	771.385	5,452.486	9,911.748
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
The NGJ-MB program is designated an Acquisition Category 1C Major Defense Acquisition Program (MDAP), MDAP program number 445. The activity will focus on Engineering and Manufacturing Development (EMD) phase completing the design of the pod and building fifteen (15) EDM pods for Developmental Test (DT) and six (6) System Demonstration Test Article (SDTA) Pod shipsets (2 pods per shipset) for final DT, Operational Test (OT), tactics development, and Initial Operational Capability (IOC). MS-C occurred in 3rd Qtr. FY 2021. MS-C Acquisition Strategy approved by the Milestone Decision Authority, Assistant Secretary of the Navy (RD&A), 19 May 2020. In addition, this PE supports NGJ-MB Extended (MBX), an Engineering Change Proposal (ECP) to the current NGJ-MB system that will extend the upper frequency coverage limit to counter modern and adaptive threats.											



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer ( NGJ)				Project (Number/Name) 0557 / Next Generation Jammer					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - Engineering and Manufacturing Development	C/CPIF	Raytheon : El Segundo, CA	1,630.337	82.979	Oct 2021	0.000		0.000		-		0.000	0.000	1,713.316	1,713.316
Primary Hardware Development - MBX Development	C/CPIF	Raytheon : El Segundo, CA	0.000	0.000		0.000		13.134	Feb 2024	-		13.134	174.435	187.569	187.569
Software/Aircraft Integration	WR	NAWCWD : China Lake, CA	95.385	13.141	Nov 2021	3.288	Nov 2022	0.000		-		0.000	0.000	111.814	-
Software/Aircraft Integration MBX	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		4.809	Nov 2023	-		4.809	16.751	21.560	-
Aircraft Integration - EMD	C/CPIF	Boeing : St. Louis, MO	75.390	10.763	Dec 2021	0.000		0.000		-		0.000	0.000	86.153	86.153
Software Integration - Blk Update	WR	NAWCWD : Pt. Mugu, CA	102.525	6.590	Nov 2021	4.298	Nov 2022	0.000		-		0.000	0.000	113.413	-
Software Integration - Blk Update MBX	WR	NAWCWD : Pt. Mugu, CA	0.000	0.000		0.000		0.000		-		0.000	11.607	11.607	-
Software Integration H-Build	C/CPIF	Boeing : St Louis, MO	103.757	10.586	Oct 2021	0.000		0.000		-		0.000	0.000	114.343	114.343
Software Integration H-Build	SS/FFP	Northrup Grumman : Bethpage, NY	66.086	7.819	Dec 2021	3.660	Dec 2022	0.000		-		0.000	0.000	77.565	77.565
Systems Engineering	WR	NAWCAD : Patuxent River, MD	181.611	2.251	Nov 2021	0.000		0.000		-		0.000	0.000	183.862	-
Systems Engineering MBX	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		4.096	Nov 2023	-		4.096	15.198	19.294	-
Systems Engineering	WR	NAWCWD : Pt. Mugu, CA	101.203	9.228	Nov 2021	2.850	Nov 2022	0.000		-		0.000	0.000	113.281	-
Systems Engineering	WR	NSWC Crane : Crane, IN	62.153	4.233	Nov 2021	0.000		0.000		-		0.000	0.000	66.386	-
Systems Engineering	SS/CPFF	Johns Hopkins University Applied	76.722	8.846	Nov 2021	0.000		0.000		-		0.000	0.000	85.568	85.568

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer ( NGJ)					Project (Number/Name) 0557 / Next Generation Jammer				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Physics Lab : Laurel, MD													
Systems Engineering MBX	SS/CPFF	Johns Hopkins University Applied Physics Lab : Laurel, MD	0.000	0.000		0.000		1.558	Feb 2024	-		1.558	5.873	7.431	7.431
Systems Engineering	Various	Various : Various	14.248	1.697	Nov 2021	0.503	Nov 2022	0.000		-		0.000	0.000	16.448	-
Systems Engineering MBX	Various	Various : Various	0.000	0.000		0.000		1.269	Feb 2024	-		1.269	5.333	6.602	-
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	753.683	0.000		0.000		0.000		-		0.000	0.000	753.683	-
Subtotal			3,263.100	158.133		14.599		24.866		-		24.866	229.197	3,689.895	N/A
Remarks															
Funding increases from FY 2023 to FY 2024 as the program completes NGJ-MB baseline development in FY24 and begins development of the MBX capability.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Eng & Tech Srvc (Non FFRDC)	Various	Various : Various	55.286	0.780	Dec 2021	0.000		0.000		-		0.000	0.000	56.066	-
Eng & Tech Srvc (Non FFRDC) MBX	Various	Various : Various	0.000	0.000		0.000		0.350	Nov 2023	-		0.350	1.471	1.821	-
Prior Year Support no longer funded in FYDP	Various	Various : Various	5.382	0.000		0.000		0.000		-		0.000	0.000	5.382	-
Subtotal			60.668	0.780		0.000		0.350		-		0.350	1.471	63.269	N/A
Remarks															
Funding increases from FY 2023 to FY 2024 as the program completes NGJ-MB baseline development in FY24 and supports the development of the MBX capability.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer ( NGJ)					Project (Number/Name) 0557 / Next Generation Jammer				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	246.065	49.687	Nov 2021	19.066	Nov 2022	1.508	Nov 2023	-		1.508	0.000	316.326	-
Developmental Test & Evaluation (DT&E)	WR	NAWCAD MBX : Patuxent River, MD	0.000	0.000		0.000		0.000		-		0.000	9.136	9.136	-
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake, CA	6.535	10.304	Mar 2022	6.822	Nov 2022	0.000		-		0.000	0.000	23.661	-
Developmental Test & Evaluation (DT&E)	Various	Boeing : St Louis, MO	42.107	4.855	Oct 2021	1.669	Oct 2022	0.000		-		0.000	0.000	48.631	48.631
Developmental Test & Evaluation (DT&E)	WR	Boeing : St Louis MO	15.596	3.731	Dec 2021	2.079	Dec 2022	0.000		-		0.000	0.000	21.406	21.406
Operational Test & Evaluation (OT&E)	Various	Various : Various	5.827	2.734	Mar 2022	10.280	Mar 2023	13.569	Nov 2023	-		13.569	0.000	32.410	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	30.121	0.000		0.000		0.000		-		0.000	0.000	30.121	-
Subtotal			346.251	71.311		39.916		15.077		-		15.077	9.136	481.691	N/A
Remarks															
Funding decreases from FY 2023 to FY 2024 as the program completes NGJ-MB baseline development with Verification of Correction of Deficiencies discovered during test.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	Various : Various	1.461	0.172	Oct 2021	0.164	Oct 2022	0.000		-		0.000	0.000	1.797	-
Travel MBX	WR	Various : Various	0.000	0.000		0.000		0.184	Oct 2023	-		0.184	0.774	0.958	-
Prior years Mgmt Svcs no longer funded in the FYDP	WR	Various : Various	0.017	0.000		0.000		0.000		-		0.000	0.000	0.017	-
Subtotal			1.478	0.172		0.164		0.184		-		0.184	0.774	2.772	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604274N / Next Generation Jammer ( NGJ)					Project (Number/Name) 0557 / Next Generation Jammer					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3,671.497	230.396		54.679		40.477		-		40.477	240.578	4,237.627	N/A

Remarks

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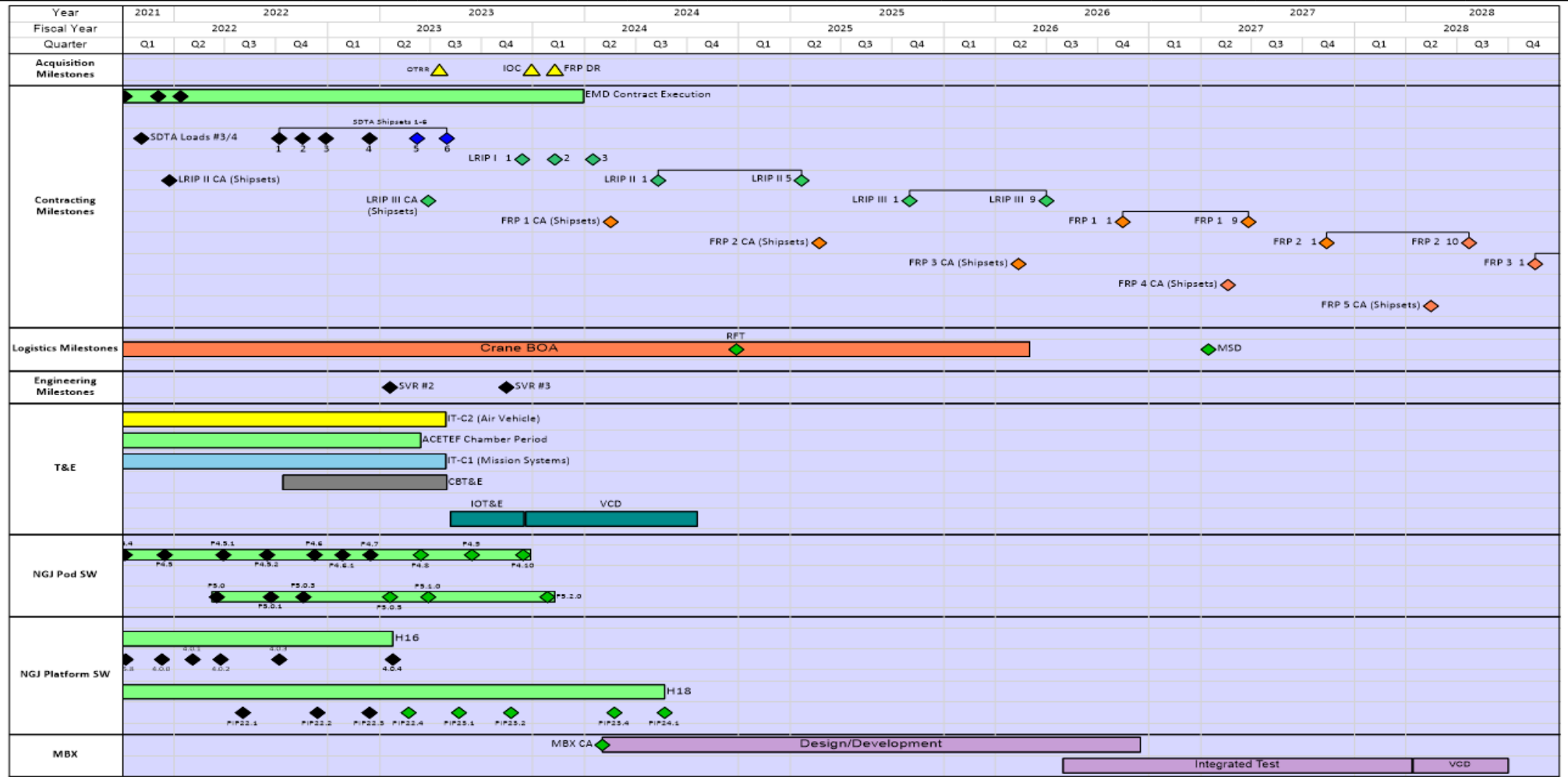
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604274N / Next Generation Jammer (NGJ)

Project (Number/Name)  
0557 / Next Generation Jammer



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604274N / Next Generation Jammer (NGJ)

## Project (Number/Name)

0557 / Next Generation Jammer

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Next Generation Jammer Mid-Band</b>				
Acquisition Milestones: Milestones: Initial Operational Capability	4	2023	4	2023
Acquisition Milestones: Milestones: Full Rate Production Decision Review	1	2024	1	2024
Systems Development: Hardware Development: Engineering & Manufacturing Development	1	2022	1	2024
Systems Development: Hardware Development: Engineering Development Model Deliveries	1	2022	2	2023
Systems Development: Hardware Development: NGJ-MB Extended (MBX) Engineering & Manufacturing Development	2	2024	4	2026
Systems Development: Software Development: Platform Software (H Build Integration)	1	2022	3	2024
Test & Evaluation: Technical Evaluation: Mission Systems Testing (IT-C1)	1	2022	3	2023
Test & Evaluation: Technical Evaluation: Aeromechanical Testing (IT-C2)	1	2022	3	2023
Test & Evaluation: Technical Evaluation: Mission Systems Testing (IT-C3) CBT&E	4	2022	3	2023
Test & Evaluation: Technical Evaluation: Verification Correction of Deficiencies (VCD)	4	2023	4	2024
Test & Evaluation: Technical Evaluation: NGJ-MB Extended (MBX) Integrated Test	3	2026	2	2028
Test & Evaluation: Technical Evaluation: NGJ-MB Extended (MBX) Verification Correction of Deficiencies (VCD)	2	2028	3	2028
Test & Evaluation: Operational Evaluation: Operational Test Readiness Review	3	2023	3	2023
Test & Evaluation: Operational Evaluation: Initial Operational Test & Evaluation	3	2023	4	2023
<b>Next Generation Jammer Mid-Band (cont)</b>				
Production Milestones: Contract Awards: System Verification Review 2	1	2023	1	2023
Production Milestones: Contract Awards: Low Rate Initial Production II APN-5 Contract Award	1	2022	1	2022

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604274N / Next Generation Jammer (NGJ)

## Project (Number/Name)

0557 / Next Generation Jammer

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestones: Contract Awards: Low Rate Initial Production III APN-5 Contract Award	2	2023	2	2023
Production Milestones: Contract Awards: Full Rate Production 1 APN-5 Contract Award	2	2024	2	2024
Production Milestones: Contract Awards: Full Rate Production 2 APN-5 Contract Award	2	2025	2	2025
Production Milestones: Contract Awards: Full Rate Production 3 APN-5 Contract Award	2	2026	2	2026
Production Milestones: Contract Awards: Full Rate Production 4 APN-5 Contract Award	2	2027	2	2027
Deliveries: System Demonstration Test Article RDTEN Deliveries	3	2022	3	2023
Deliveries: LRIP I Deliveries	4	2023	2	2024
Deliveries: LRIP II Deliveries	3	2024	2	2025
Deliveries: LRIP III Deliveries	3	2025	2	2026
Deliveries: FRP 1 Deliveries	4	2026	2	2027
Deliveries: FRP 2 Deliveries	4	2027	3	2028
Deliveries: FRP 3 Deliveries	4	2028	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYSTEM (JTRS)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	449.041	225.867	334.787	451.397	-	451.397	385.531	249.408	194.893	163.462	Continuing	Continuing
0725: Communication Automation	10.286	8.126	14.012	29.643	-	29.643	16.839	12.419	4.272	4.357	Continuing	Continuing
0728: Navy Multiband Terminal (NMT)	0.000	24.938	30.978	47.629	-	47.629	21.519	7.574	7.865	8.024	Continuing	Continuing
0729: Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)	0.000	26.739	75.986	107.680	-	107.680	62.728	1.040	1.047	1.069	Continuing	Continuing
0742: Sub Integrated Ant System	30.942	15.543	27.991	17.473	-	17.473	13.282	13.236	12.943	13.166	Continuing	Continuing
0921: NAVSTAR GPS Equipment	92.564	28.011	36.380	37.581	-	37.581	52.490	22.387	21.243	21.671	Continuing	Continuing
1411: Sub Tact Comm System	26.722	13.259	14.274	17.043	-	17.043	14.680	14.867	15.085	15.391	Continuing	Continuing
2126: ATDLs Integration	39.342	21.715	32.039	31.874	-	31.874	28.597	23.730	23.916	24.403	Continuing	Continuing
3020: MIDS/JTRS	118.527	63.855	82.429	149.068	-	149.068	159.977	139.780	92.775	60.416	Continuing	Continuing
3078: Digital Modular Radio	53.890	2.460	6.347	7.115	-	7.115	6.868	6.820	6.948	7.088	Continuing	Continuing
3341: Network Tactical Common Data Link	71.274	19.162	6.037	3.017	-	3.017	5.489	4.444	5.636	4.650	Continuing	Continuing
4011: Naval Coastal Warfare Surv and C4I Sys	5.494	2.059	3.314	3.274	-	3.274	3.062	3.111	3.163	3.227	Continuing	Continuing
9999: Congressional Adds	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 290, 554												
A. Mission Description and Budget Item Justification Programs will implement digital system-of-systems engineering by using tools such as Model Based System Engineering (MBSE) and Digital Twins to create adaptable digital models to optimize system engineering from design, development and testing to operations and sustainment. Programs will use Development, Security and Operations (DevSecOps) processes for continuous development, integration, testing and deployment, along with common platform services such as Agile Core Services (ACS), for faster fielding of capability.												

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604280N / <i>JT TACTICAL RADIO SYSTEM (JTRS)</i>
<p>(0725) The details of Program Element 0604280N, Project 0725 for BFTN/BRSE are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.</p> <p>(0728) The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p> <p>(0728) Navy Global Broadcast System (GBS) is a member of the larger Joint C4I program, providing high speed (up to 45 Mbps per transponder)/large volume information/data delivery to forces afloat, ashore, and Naval Special Warfare Command. Leveraging the NMT antenna, GBS provides a one-way broadcast to Naval maritime forces across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence in support of RC3. GBS Transmission Security (TRANSEC) is an operational requirement from the Joint GBS ORD and provides robust datalink protection of both uplink and downlink for the GBS broadcast. GBS is evaluating PTW solutions to meet the TRANSEC mandate. The Air Force &amp; Army Anti-Jam Modem (A3M) and the WAMS are PTW solutions that are under consideration. Navy GBS will require extensive development activities for the new PTW modem solution and must conduct a FOT&amp;E with Joint Services. Overall program efforts include technology insertion studies required to support satellite communications.</p> <p>(0728) GBS FY24 will support GBS Transmission Security (TRANSEC) development to provide robust datalink protection of both uplink and downlink for the GBS broadcast.</p> <p>(0729) Satellite Communications: The details of Program Element 0604280N, Project 0729 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p> <p>(0742) Submarine Integrated Antenna System: The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p> <p>(0921) Navigation Satellite Timing &amp; Ranging (NAVSTAR) Global Positioning System (GPS) project (0921) encompasses the Navy's efforts to pace the growing threat to GPS Navigation through the fielding of new GPS receivers, Anti-Jam (AJ) Antennas, and Assured-Positioning Navigation and Timing (A-PNT) technologies across all Navy platform types. NAVSTAR GPS is a group of A-PNT systems that provides authorized users with secure, worldwide, all weather, three dimensional position, velocity, and precise time data. NAVSTAR GPS provides A-PNT capability to Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) and combat systems in standalone and networked architectures throughout air and maritime domains. This project is comprised of four distinct efforts: Sea Navigation Warfare (NAVWAR), GPS-based Positioning, Navigation, and Timing (PNT) Service (GPNTS), Air Navigation Warfare (NAVWAR) and GPS Modernization. Sea NAVWAR provides AJ antennas to surface and subsurface platforms; GPNTS provides GPS receivers and A-PNT technology to surface platforms; Air NAVWAR provides AJ antennas, and GPS Modernization provides GPS receivers to air platforms. Research, Development, Testing and Evaluation (RDT&amp;E) funds are used to perform all the non-recurring GPS Surface Ship, Submarine and Aircraft Development, Integration, and Testing efforts in support of NAVSTAR GPS.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604280N / <i>JT TACTICAL RADIO SYSTEM (JTRS)</i>
<p>FY2024 request will fund the following GPS Surface Ship, Submarine and Aircraft Development, Integration and Test efforts in support of NAVSTAR GPS: continue investigation of enhanced Anti-Jam (AJ) capabilities for integration into existing Sea NAVWAR antenna systems, continue efforts to develop and test a GPNTS system capable of hosting the Automated Celestial Navigation Systems (ACNS) below deck hardware, complete ground and flight testing of the Multi-Platform Anti-Jam Global Positioning System Navigation H-Antenna Integration (MAGNA-I) on the AH-1Z/UH-1Y helicopters, and conduct Military Code (M-Code) Prime Vendor Integrations (PVI) on the following three (3) platforms: FA-18E/F, EA-18G, and E-2D.</p> <p>(1411) Submarine Tactical Communications System: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p> <p>(2126) Tactical Data Link (TDL) systems includes the Advanced Tactical Data Link Systems (ATDLS) integration programs, specifically Link 16 Network, Command and Control Processor (C2P) and Link Monitoring and Management Tool (LMMT).</p> <p>FY24 JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under operational systems development because it encompasses engineering and manufacturing development for upgrade of existing operational systems.</p> <p>Link 16 Network Program provides shipboard and shore integrated Link 16 capability through the fielding of Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) on Ships (MOS) and MOS Modernization (MOS Mod) systems, including transmit and receive antennas. JTIDS utilizes the JTIDS terminal, MOS utilizes either the MIDS-Low Volume Terminal (LVT) or MIDS Joint Tactical Radio System (JTRS) terminal, and MOS Mod utilizes the MIDS JTRS terminals. All Link 16 systems are interfaced to Command and Control Processor (C2P). The JTIDS terminal is no longer in production, but is undergoing JTIDS Product Improvement (JPI) to maintain interoperability and security with MIDS-LVT and MIDS JTRS. As part of the product improvement, all shipboard Link 16 terminals are required to have Dynamic Network Management (DNM), Crypto Modernization (CM) and Frequency Remapping (FR). MIDS Program Office (MPO) is developing additional improvements to the MIDS JTRS terminals. The MIDS-LVT will have Link 16 Enhanced Throughput (ET) and the MIDS JTRS will have the added capability of four networks via Concurrent Multi-Netting (CMN) with Current Contention Receive (CCR) and Tactical Targeting Networking Technology (TTNT).</p> <p>Command and Control Processor (C2P): The two Research Development Test &amp; Evaluation (RDT&amp;E) initiatives are 1) C2P Technology Refresh (TR) cyber security update and 2) C2P Modernization which now includes Link 22 integration. C2P TR cyber security update is a new initiative driven by recently discovered cyber security risk to the C2P system in support of the Ballistic Missile Defense (BMD) mission. This update is planned to support acceleration on all AEGIS BMD ships. C2P Modernization funds the transition of the legacy Compiler Monitor System (CMS-2Y) software code to a modern software language. This is required to sustain the system software, to adequately address growing cyber security and operational availability challenges and to enable more affordable transition to new hardware processing components as a result of commercial off the shelf processor obsolescence.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604280N / <i>JT TACTICAL RADIO SYSTEM (JTRS)</i>
<p>Link Monitoring and Management Tool (LMMT) is a system delivered on commercial off-the-shelf hardware (HW) providing gateway functions for multiple Tactical Data Link(TDL) interface, routing and display of TDL data to include Link 16, Joint Range Extension (JRE) and Link 22. LMMT is also capable of performing TDL network monitoring and management, data forwarding between the TDLs and providing tactical data to the Integrated Air and Missile Defense (IAMD), Ballistic Missile Defense (BMD) network, and Global Command and Control System (GCCS) for establishing the common operational picture. LMMT requirements will be incrementally developed and delivered in capability drops via the Joint Capabilities Integration Development System (JCIDS) IT Box approach.</p> <p>(3020)The Multifunctional Information Distribution System (MIDS) program office is the Performing Activity for the Navy (Lead Service for Department of Defense (DOD)), Link 16 capability and consists of two (2) product lines, MIDS Low Volume Terminal (LVT) (legacy hardware defined radio) and MIDS Joint Tactical Radio System (JTRS) (software defined radio). MIDS-LVT effort is a cooperative development program between France, Germany, Italy, Spain, and the United States with United States joint service participation (Navy, Army, Air Force), and has provided over 11,000 terminals to 48 Nations providing interoperability with North Atlantic Treaty Organization (NATO) and coalition partners. The Department of Defense (DoD) established the program to design, develop, and deliver low volume, lightweight tactical information system terminals for U.S. and allied fighter aircraft, bombers, helicopters, ships, and ground sites. MIDS-LVT significantly increases force effectiveness and minimizes hostile actions and friend-on-friend engagements. MIDS-LVT Block Upgrade 2 was executed as an ECP and provides the critical upgrades to the MIDS-LVT Terminal to enable U.S., Coalition and International partners' ability to meet the National Security Agency (NSA) mandated timelines for Cryptographic Modernization (CM) and the National Telecommunications and Information Agency (NTIA) and Federal Aviation Agency (FAA) mandated timelines for Frequency Remapping (FR).</p> <p>MIDS JTRS, designed as a Pre-Planned Product Improvement (P3I) and executed as an Engineering Change Proposal (ECP) to the production MIDS-LVT configuration, and is fully compatible with MIDS-LVT. The MIDS JTRS Core Terminal achieved Full Production and Fielding (FP&amp;F) in March 2012. It facilitated the JTRS incremental approach for fielding advanced JTRS transformational networking capability and transformed the MIDS-LVT into a 4-channel, Software Communications Architecture (SCA) compliant, Joint Tactical Radio. A form-fit-function replacement to MIDS-LVT, MIDS JTRS also adds three programmable 2 Megahertz (MHz) to 2 Gigahertz (GHz) channels capable of hosting the JTRS legacy and networking waveforms. In addition to Link 16, Tactical Air Navigation (TACAN), and voice functionality found in MIDS-LVT, MIDS JTRS has four channels and adds capabilities such as Link 16 Enhanced Throughput (ET), Link 16 FR, software programmability, CM, and Four Net Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4).</p> <p>MIDS JTRS Tactical Targeting Network Technology (TTNT), is a block upgrade to the MIDS JTRS CMN-4 Terminal providing an Internet Protocol-based networking capability on tactical aircraft. TTNT is a low latency, high throughput waveform that has the capability to support data exchange between fast-moving tactical aircraft, weapons, and unmanned aircraft, in addition to air, land, and sea-based command and control nodes, in a variety of air-to-air and air-to-ground missions including time sensitive targeting, air warfare, close air support, non-traditional ISR, and anti-surface warfare. TTNT and MIDS JTRS CMN-4 are critical Tactical Data Link capabilities and directly supports Naval Integrated Fire Control (NIFC) capability requirements. These capabilities provide Joint Airborne Network-Tactical Edge functionality to run advanced mission applications in a cross-platform/cross-domain tactical network enterprise.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604280N / <i>JT TACTICAL RADIO SYSTEM (JTRS)</i>
<p>The FY2024 Budget completes the first software release (Block Cycle 1) for the MIDS Modernization Software and Firmware development and enters EMC Testing. It continues the MIDS JTRS machine to machine capability enhancements. The FY 2024 budget also supports the lead service core waveform development requirements for developing a reference implementation platform for prototyping and conducting frequency testing for the Link 16 and TTNT waveforms.</p> <p>The FY2024 Budget funds the development of new Advanced Tactical Datalinks Waveform for further interoperability and adding classified capabilities. The FY 2024 Budget continues to fund critical warfighter improvements to the TTNT Terminal Software and Waveform in order to out pace the threat with adding classified capabilities. It completes the development of the TTNT Consolidated Automated Support System (CASS) Test Program Sets (TPS).</p> <p>(3078) Digital Modular Radio (DMR) with Integrated Waveform (IW) and Mobile User Objective System (MUOS) capable hardware is the Navy's technical solution for the IW/MUOS requirement. The DMR AN/USC-61(C), is the first software defined radio to become a communications system standard for the U.S. Military. The compact, multi-channel DMR provides 3G, Wideband Code Division Multiple Access (WCDMA) technology, for high speed/capacity voice and data satellite communications. DMR radios currently operate aboard U.S. Navy surface and subsurface vessels, fixed-sites and other Department of Defense (DoD) communication platforms using frequencies ranging from 2 MHz to 2 GHz. Certified to pass secure voice and data at Multiple Independent Levels of Security (MILS) over High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), and Satellite Communications (SATCOM) channels, the DMR system was developed to the U.S. Navy's specifications and meets all the stringent environmental, Electromagnetic Interference (EMI) and performance requirements for use in the U.S. Fleet. This system is formally specified by both Fleet Commanders as a threshold capability, for global maritime command control and communications in a Distributed Maritime Environment, to execute current warfighting plans and is required for National Command and Control capability. This program is for continued development/integration of the IW and MUOS waveforms into the DMR in accordance with Military Standards 188-181,2,3. Additionally, the enhancements of High Frequency Distribution Amplifier Group (HFDAG), HF Automated Link Establishment (ALE) and Second-Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) will also be developed/integrated into the DMR. HFDAG is a follow-on HF solution to fulfill transmit and receive HF communication capability with various modes of operation, such as ALE, for Navy platforms. HFDAG will utilize the existing DMR as the exciter/receiver. Generation 3 (GEN 3) HF ALE/HF wideband provides Navy users with improved HF communications, increased transmission rates from radio to radio, and serves as a supplement to SATCOM when SATCOM networks are overloaded or unavailable. SATURN is the follow-on HAVEQUICK II anti-jamming solution in accordance with NATO Standardization Agreement 4372 (retirement date for HAVEQUICK II is no later than 1OCT24). SATURN capability will counter adversaries' jamming efforts and ensure Navy's Assured Command and Control UHF communications operational end-to-end capability as well as enhance interoperability within/between DMR users and with Allied/Coalition partners. IW uses a Time Division Multiple Access (TDMA) communication system in an attempt to improve satellite bandwidth utilization over legacy SATCOM waveforms. This enables demand assigned services on UHF SATCOM networks to support new applications that require better performance and higher channel throughput. The MUOS waveform will enable MUOS satellites to provide worldwide communication satellite coverage for DoD requirements. MUOS will provide functionality comparable to commercial mobile phone systems.</p> <p>FY24 will continue integration of the MUOS waveform 3.2 as well as development of the SATURN waveform from the currently used HAVEQUICK II (HQII) waveform; and complete development of Crypto Mod SINCGARS 3.x Phase 2.</p> <p>(3341) Network Tactical Common Data Link (NTCDL) provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, airborne, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video) across dissimilar joint, service, coalition, and civil networks. NTCDL provides warfighters with the capability to support multiple, simultaneous, networked</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604280N / <i>JT TACTICAL RADIO SYSTEM (JTRS)</i>
<p>operations with currently fielded Common Data Link (CDL)-equipped air platforms (e.g. MH-60R), in addition to next generation manned and unmanned platforms (e.g., P-8, Triton, MQ-25 (Stingray), small tactical unmanned aircraft systems (STUAS) and Fire Scout). NTCDL is an incremental capability (surface, airborne, sub-surface, man-portable) providing modular, scalable, multiple-link networked communications. NTCDL benefits the fleet by providing a horizon extension for line-of-sight sensor systems for use in time-critical strike missions and supports tasking, collection, processing, exploitation, and dissemination (TCPED) via its ISR networking capability. NTCDL supports Resilient Command and Control (RC2) through its relay capability, and supports TCPED through its ISR networking capability.</p> <p>FY 2024 request is for NTCDL to conduct Initial Operational Test &amp; Evaluation and continue to mature the Initial Capability to support high speed waveforms, higher speed data rates (up to 45 Mbps), and platform communication equipment.</p> <p>(4011) The Navy Expeditionary C4I project supports the Navy Expeditionary Combat Command (NECC) mission to detect, deter or interdict potential threats to DoN assets using agile, modular and scalable technology. NECC units have a number of current and future Command, Control, Communications, Computers &amp; Intelligence (C4I) technological requirements for Tactical/Command Operations Center, tactical vehicles, combatant craft, and dismounted personnel. NECC operations require units to maintain effective command and control, develop and display a common tactical picture, and share intelligence and current operational information with higher headquarters, subordinate units, joint forces and coalition allies. Small, Medium, and Large Scale Communication Systems (LSCS) are the C4I hub for the NECC; Navy Enterprise Tactical Command and Control (NETC2) is the converged LSCS baseline. Future C4I research and development include enhanced information transport, network cyber security posture, assured communications in denied environments along with agility and mobility. Funding is required for testing and evaluation of cyber security issues associated with obsolescence of network items and if not addressed will impact the ability of the Program Office to maintain system accreditation under Risk Management Framework (RMF) revoking multiple LSCS assets authority to connectivity on the Department of Defense Information Network (DoDIN). Efforts are in alignment with NECC's strategic Expeditionary Warfare Improvement Program (EXWIP) Integrated Priority Capability List (IPCL) priorities and maintain alignment with greater DoD initiatives, such as Joint Information Environment (JIE), Mission Partner Environment (MPE) in order to maintain interoperability and drive down DoN enterprise costs. FY24 funding supports investigation of cloud and containerization technologies, as well as development of Tier 1 capabilities to support multi-cloud environments.</p> <p>(C887) FY23 Congressional Addition For Integrated Photonics: Provides funding for the development, test and evaluation of enhanced capabilities for Satellite Communications by furthering Science &amp; Technology (S&amp;T) research and transition activities associated with resilient communications capabilities.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604280N / JT TACTICAL RADIO SYSTEM (JTRS)				
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		234.434	329.787	324.172	-	324.172
Current President's Budget		225.867	334.787	451.397	-	451.397
Total Adjustments		-8.567	5.000	127.225	-	127.225
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	5.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.977	0.000			
• SBIR/STTR Transfer		-7.541	0.000			
• Program Adjustments		0.000	0.000	118.511	-	118.511
• Rate/Misc Adjustments		-0.049	0.000	8.714	-	8.714
<b>Congressional Add Details (\$ in Millions, and Includes General Reductions)</b>						
<b>Project: 9999: Congressional Adds</b>						
Congressional Add: <i>Integrated photonic systems</i>						
						<b>FY 2022</b>
						<b>FY 2023</b>
						0.000
						5.000
Congressional Add Subtotals for Project: 9999						0.000
						5.000
Congressional Add Totals for all Projects						0.000
						5.000
<b>Change Summary Explanation</b>						
(0728) Navy Multiband Terminal (NMT) has an overall increase of \$16.651M from FY23 to FY24 to support Wideband Anti-Jam Modem System (WAMS) development, integration, test, and certification efforts. This provides Resilient Command, Control, and Communications (RC3) and Distributed Maritime Operations (DMO) capability. Details provided in the Classified justification books. Navy Global Broadcast System (GBS) decrease of \$1.514M from FY23 to FY24 due to the focus on integration and operational testing in support of Transmission Security (TRANSEC).						
(0729) Satellite Communications has an overall increase of \$31.694M from FY23 to FY24 to support Big Sky 54-month development schedule.						
(0921) The FY 2024 funding request was increased by \$1.201M to support the Global Positioning System (GPS) Modernization Miniaturized Airborne GPS Receiver 2000-Modernization (MAGR2K-M) Developmental Test (DT)/Operational Test (OT) on the following air platforms: CMV-22B and MV-22B.						
(2126) The FY2023 to FY2024 funding decreased by \$0.165M included a \$2.08M decrease in the Link 16 Program as the program down-selects to a single vendor performing A(v)6 integration into a MOS Mod cabinet; a \$2.027M increase in the C2P program as the commencement of the C2P Pre-Planned Product						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYSTEM (JTRS)	
<p>Improvement Program (P3I) to incorporated additional capability to the C2P Mod SW baseline begins; and a \$.112M decrease in the LMMT program as the program completes Capability Drop (CD) 3 development and begins development of CD4.</p> <p>(3020) The FY2023 to FY2024 increase of \$66.6M is due to the funding of the development of Advanced Tactical Datalinks (ATDL) Waveform (and variants thereof).</p> <p>(3078) The FY2023 to FY2024 funding increase by \$0.768M will continue the development of the Second generation Anti-jam Tactical UHF Radio for North Atlantic Treaty Organization (NATO) (SATURN) waveform.</p> <p>(3341) The FY24 funding decreased by \$3.020M due to completion of DT-B2 and End-to-End interoperability Testing.</p> <p>(4011) The FY2023 to FY2024 decrease of \$0.04 million is a result of the reduction of onsite surveys in preparation of Operation Exercises.</p> <p>(C887) FY23 Congressional Add provides for the development, test and evaluation of enhanced capabilities for Satellite Communications by furthering Science &amp; Technology (S&amp;T) research and transition activities associated with resilient communications capabilities.</p>		



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0725 / Communication Automation			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0725: Communication Automation	10.286	8.126	14.012	29.643	-	29.643	16.839	12.419	4.272	4.357	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Battle Force Tactical Network (BFTN)								8.126	14.012	29.643	0.000	29.643
Articles:								-	-	-	-	-
FY 2023 Plans:												
The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.												
FY 2024 Base Plans:												
The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.												
FY 2024 OCO Plans:												
N/A												
FY 2023 to FY 2024 Increase/Decrease Statement:												
The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.												
Accomplishments/Planned Programs Subtotals								8.126	14.012	29.643	0.000	29.643
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• OPN/3057: Battle Force Tactical Network (BFTN)	27.816	34.112	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy							Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0725 / Communication Automation			

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• OPN/2437: Battle Force Tactical Network (BFTN)	0.000	0.000	74.180	-	74.180	105.833	106.813	105.958	107.414	0.000	500.198

**Remarks**  
OPN LI 3057 is a shared line; funding identified above is for BFTN efforts.  
Beginning in FY24, BFTN's OPN funding moved from BLI 3057 to BLI 2437. This budget is classified SECRET//NOFORN and is submitted annually to Congress in the classified budget justification books.

D. Acquisition Strategy

The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0725 / Communication Automation					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	Various	Not Specified : Not Specified	9.552	7.676	Oct 2021	12.197	Oct 2022	27.498	Oct 2023	-		27.498	Continuing	Continuing	Continuing
Subtotal			9.552	7.676		12.197		27.498		-		27.498	Continuing	Continuing	N/A
Remarks The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	Various	Not Specified : Not Specified	0.734	0.450	Nov 2021	0.450	Nov 2022	0.000		-		0.000	0.000	1.634	-
Subtotal			0.734	0.450		0.450		0.000		-		0.000	0.000	1.634	N/A
Remarks The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Not Specified : Not Specified	0.000	0.000	Oct 2021	1.365	Oct 2022	1.485	Oct 2023	-		1.485	0.000	2.850	-
Operational Test & Evaluation (OT&E)	Various	Not Specified : Not Specified	0.000	0.000		0.000		0.660	Oct 2023	-		0.660	0.000	0.660	-
Subtotal			0.000	0.000		1.365		2.145		-		2.145	0.000	3.510	N/A
Remarks The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 0725 / Communication Automation				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		10.286	8.126		14.012		29.643		-		29.643	Continuing	Continuing	N/A

**Remarks**  
The details of Program Element 0604280N Project 0725 are classified SECRET//NOFORN and are submitted annually to Congress in the classified budget justification books.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 0725 / Communication Automation									

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 0725																												
Classified (Placeholder)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 0725 / Communication Automation

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0725				
Classified (Placeholder)	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0728 / Navy Multiband Terminal (NMT)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0728: Navy Multiband Terminal (NMT)	0.000	24.938	30.978	47.629	-	47.629	21.519	7.574	7.865	8.024	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 290												

**A. Mission Description and Budget Item Justification**

The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

Navy Global Broadcast System (GBS) is a member of the larger Joint Command, Control, Communications, Computers, and Intelligence (C4I) program, providing high speed (up to 45 Mbps per transponder)/large volume information/data delivery to forces afloat, ashore, and Naval Special Warfare Command. Leveraging the NMT antenna, GBS provides a one-way broadcast to Naval maritime forces across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence in support of RC3. GBS Transmission Security (TRANSEC) is an operational requirement from the Joint GBS ORD and provides robust datalink protection of both uplink and downlink for the GBS broadcast. GBS is evaluating Protected Tactical Waveform (PTW) solutions to meet the TRANSEC mandate. The Air Force & Army Anti-Jam Modem (A3M) and the WAMS are PTW solutions that are under consideration. Navy GBS will require extensive development activities for the new PTW modem solution and must conduct a Follow-On Test & Evaluation (FOT&E) with Joint Services. Overall program efforts include technology insertion studies required to support satellite communications.

Technology Insertion, studies and implementation is necessary for military satellite communications systems development to support emerging technologies for Satellite Communications (SATCOM) programs.

The FY24 request will support GBS Transmission Security (TRANSEC) development to provide robust datalink protection of both uplink and downlink for the GBS broadcast.

Increase of \$16.561M from FY23 to FY24 to support Wideband Anti-Jam Modem System (WAMS) development, integration, test, and certification efforts. This provides Resilient Command, Control, and Communications (RC3) and Distributed Maritime Operations (DMO) capability.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> NMT Resilient C3 Development	23.010	26.839	45.004	0.000	45.004
<b>Articles:</b>	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0728 / Navy Multiband Terminal (NMT)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>Description:</b> The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p> <p><b>FY 2023 Plans:</b> The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p> <p><b>FY 2024 Base Plans:</b> The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.</p>						
<p><b>Title:</b> Global Broadcast System (GBS) Transmission Security (TRANSEC)</p> <p style="text-align: right;"><b>Articles:</b></p> <p><b>Description:</b> Navy GBS is a member of the larger Joint C4I program, providing high speed (up to 45 Mbps per transponder)/large volume information/data delivery to forces afloat, ashore, and Naval Special Warfare Command. Leveraging the NMT antenna, GBS provides a one-way broadcast to Naval maritime forces across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence in support of RC3. GBS Transmission Security (TRANSEC) is an operational requirement from the Joint GBS ORD and provides robust datalink protection of both uplink and downlink for the GBS broadcast. GBS is evaluating Protected Tactical Waveform (PTW) solutions to meet the TRANSEC mandate. The Air Force &amp; Army Anti-Jam Modem (A3M) and the WAMS are PTW solutions that are under consideration. Navy GBS will require extensive development activities for the new PTW modem solution and must conduct a FOT&amp;E with Joint Services. Overall program efforts include technology insertion studies required to support satellite communications.</p> <p><b>FY 2023 Plans:</b> In alignment with GBS Executive Agent (USSF) PTW implementation, Navy GBS will procure modems for surface and shore testing and begin integration, assembly and testing activities (IA&amp;T). Navy GBS program</p>		1.778 -	3.989 -	2.475 -	0.000 -	2.475 -



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0728 / Navy Multiband Terminal (NMT)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
will additionally begin sub-surface development and integration activities as submarine platforms will require significant increase in engineering design changes compared to surface platforms. Complete TRANSEC Design and Studies.  <b>FY 2024 Base Plans:</b> Continue sub-surface development and TRANSEC integration activities as submarine platforms will require significant increase in engineering design changes compared to surface platforms. Participate in GBS joint operational testing & evaluation for Protected Waveform (PTW).  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Requirements in FY24 decrease by \$1.514M. In FY23, funding included the procurement of modems (hardware) required for integration. FY24 does not include any hardware procurements but continues the associated integration work.						
<b>Title:</b> Technology Insertion  <div><b>Articles:</b></div> <b>Description:</b> Overall program efforts include technology insertion studies required to support satellite communications.  <b>FY 2023 Plans:</b> Maintain alignment with the Navy's RC3 strategy and approach, Satellite Communications (SATCOM) programs transitioned from exercising an initial RC3 modem capability to utilizing the Wideband Anti-Jam Modem System (WAMS), which provides protected wideband SATCOM capability to the Fleet. Funds required to perform studies on how to integrate WAMS into the Satellite Communication (SATCOM) architecture.  <b>FY 2024 Base Plans:</b> Continue to maintain alignment with the Navy's RC3 strategy and approach, Satellite Communications (SATCOM) programs transitioned from exercising an initial RC3 modem capability to utilizing the Wideband Anti-Jam Modem System (WAMS), which provides protected wideband SATCOM capability to the Fleet. Funds required to perform studies on how to integrate WAMS into the Satellite Communication (SATCOM) architecture.  <b>FY 2024 OCO Plans:</b>		0.150 -	0.150 -	0.150 -	0.000 -	0.150 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy						Date: March 2023					
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)			Project (Number/Name) 0728 / Navy Multiband Terminal (NMT)				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
N/A											
Accomplishments/Planned Programs Subtotals						24.938	30.978	47.629	0.000	47.629	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/3216: NAVY MULTIBAND TERMINAL (NMT)	34.723	24.586	37.921	-	37.921	88.661	79.169	76.946	78.986	Continuing	Continuing
Remarks											
The Other Appropriation represents remaining procurement and installation of NMT production units for Afloat and Shore requirements to reach Full Operational Capability. Funding also includes the procurement and installation of WAMS & AC2 modems as well as the installation of Advanced Time Division Multiple Access (TDMA) Interface Processors (ATIPs), X/KA Back-Fits, and Ashore Antennas.											
D. Acquisition Strategy											
The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0728 / Navy Multiband Terminal (NMT)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	C/CPFF	Not Specified : Not Specified	0.000	15.635	Jan 2022	19.467	Jan 2023	36.690	Jan 2024	-		36.690	Continuing	Continuing	Continuing
TRANSEC Development	SS/CPIF	L3 : San Diego, CA	0.000	0.750	Apr 2022	2.539	Feb 2023	0.975	Feb 2024	-		0.975	0.000	4.264	-
Subtotal			0.000	16.385		22.006		37.665		-		37.665	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	WR	Not Specified : Not Specified	0.000	3.902	Nov 2021	3.310	Nov 2022	3.685	Nov 2023	-		3.685	Continuing	Continuing	Continuing
GBS TRANSEC Engineering Support	WR	NIWC PAC : San Diego, CA	0.000	0.429	Jan 2022	0.600	Jan 2023	0.300	Jan 2024	-		0.300	0.000	1.329	-
GBS TRANSEC Engineering Support	WR	NIWC LANT : Charleston, SC	0.000	0.219	Jan 2022	0.300	Jan 2023	0.200	Jan 2024	-		0.200	0.000	0.719	-
GBS TRANSEC Engineering Support	WR	NUWC : Newport, RI	0.000	0.286	Jan 2022	0.400	Jan 2023	0.500	Jan 2024	-		0.500	0.000	1.186	-
Subtotal			0.000	4.836		4.610		4.685		-		4.685	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	Classified : Classified	0.000	2.217	Nov 2021	2.541	Nov 2022	3.050	Nov 2023	-		3.050	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NIWC PAC : San Diego, CA	0.000	0.094	Jan 2022	0.150	Jan 2023	0.000	Jan 2024	-		0.000	0.000	0.244	-
Operational Test & Evaluation (OT&E)	WR	NIWC PAC : San Diego, CA	0.000	0.000		0.000		0.500	Jan 2024	-		0.500	0.000	0.500	-
Subtotal			0.000	2.311		2.691		3.550		-		3.550	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)						Project (Number/Name) 0728 / Navy Multiband Terminal (NMT)					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Remarks Increase in FY24 is due to Joint GBS testing for PTW.																	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Classified	C/CPFF	Not Specified : Not Specified	0.000	1.406	Nov 2021	1.671	Nov 2022	1.729	Nov 2023	-		1.729	Continuing	Continuing	Continuing		
Subtotal			0.000	1.406		1.671		1.729		-		1.729	Continuing	Continuing	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.000	24.938		30.978		47.629		-		47.629	Continuing	Continuing	N/A		
Remarks The details of Program Element 0604280N, Project 0728 for NMT are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy				Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)			Project (Number/Name) 0728 / Navy Multiband Terminal (NMT)			
	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	
MILESTONES	<div>TRANSEC Modem Studies &amp; Design</div> <div>Acquire TRANSEC Prototype(s)</div> <div>TRANSEC Modem Integration &amp; Test</div> <div>GBS Joint Service OT&amp;E (PTW)</div>							
DEVELOPMENT								
TESTING								
PROCUREMENTS								

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	<b>Project (Number/Name)</b> 0728 / Navy Multiband Terminal (NMT)	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0728</b>				
Classified (Place Holder)	1	2022	4	2028
Global Broadcast System(GBS) TRANSEC: Transec Modem Studies & Design	1	2022	1	2023
Global Broadcast System(GBS) TRANSEC: Transec Prototype	2	2023	2	2023
Global Broadcast System(GBS) TRANSEC: Transec Integration & Test	1	2023	1	2025
Global Broadcast System(GBS) TRANSEC: GBS Joint Service OT&E Protective Waveform (PTW)	1	2024	2	2025
Global Broadcast System(GBS) TRANSEC: TRANSEC Equipment FY25	2	2025	2	2025
Global Broadcast System(GBS) TRANSEC: TRANSEC Equipment FY26	2	2026	2	2026
Global Broadcast System(GBS) TRANSEC: TRANSEC Equipment FY27	2	2027	2	2027
Global Broadcast System(GBS) TRANSEC: TRANSEC Equipment FY28	2	2028	2	2028

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYSTEM (JTRS)				<b>Project (Number/Name)</b> 0729 / Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
0729: Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)	0.000	26.739	75.986	107.680	-	107.680	62.728	1.040	1.047	1.069	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
<b>Project MDAP/MAIS Code:</b> 290												
<b>A. Mission Description and Budget Item Justification</b> The details of Program Element 0604280N, Project 0729 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.												
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>							<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	
<b>Title:</b> Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)  <b>Articles:</b>  <b>FY 2023 Plans:</b> The details of Program Element 0604280N, Project 0729 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.  <b>FY 2024 Base Plans:</b> The details of Program Element 0604280N, Project 0729 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The details of Program Element 0604280N, Project 0729 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.							26.739	75.986	107.680	0.000	107.680	
							-	-	-	-	-	
<b>Accomplishments/Planned Programs Subtotals</b>							26.739	75.986	107.680	0.000	107.680	
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A												
<b>Remarks</b>												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 0729 / Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)

**D. Acquisition Strategy**

The details of Program Element 0604280N, Project 0729 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0729 / Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	0.000	20.613	Apr 2022	67.936	Jan 2023	95.580	Jan 2024	-		95.580	Continuing	Continuing	Continuing
Subtotal			0.000	20.613		67.936		95.580		-		95.580	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	0.000	4.726	Nov 2021	6.350	Nov 2022	9.300	Nov 2023	-		9.300	Continuing	Continuing	Continuing
Subtotal			0.000	4.726		6.350		9.300		-		9.300	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	TBD	Not Specified : Not Specified	0.000	0.000		0.500	Nov 2022	1.300	Nov 2023	-		1.300	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.500		1.300		-		1.300	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	0.000	1.400	Nov 2021	1.200	Nov 2022	1.500	Nov 2023	-		1.500	Continuing	Continuing	Continuing
Subtotal			0.000	1.400		1.200		1.500		-		1.500	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0729 / Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	26.739		75.986		107.680		-		107.680	Continuing	Continuing	N/A

**Remarks**  
The details of Program Element 0604280N, Project 0729 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 0729 / Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)				

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 0729																												
Classified (Place Holder)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 0729 / Mobile Advanced Extremely High Frequency (AEHF) Terminal (MAT)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0729				
Classified (Place Holder)	1	2022	4	2028

## UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0742 / Sub Integrated Ant System			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0742: Sub Integrated Ant System	30.942	15.543	27.991	17.473	-	17.473	13.282	13.236	12.943	13.166	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Transition Engineering  Articles:  FY 2023 Plans: N/A  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A								1.948	0.000	0.000	0.000	0.000
								-	-	-	-	-
Title: Submarine High Data Rate (SubHDR) Pre-Planned Product Improvement (P3I)  Articles:  FY 2023 Plans: N/A  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A								1.873	0.000	0.000	0.000	0.000
								-	-	-	-	-
Title: Advanced High Data Rate (AdvHDR)  Articles:  FY 2023 Plans:								3.495	18.702	9.443	0.000	9.443
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0742 / Sub Integrated Ant System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books. <b>FY 2024 Base Plans:</b> The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.						
Title: Towed Buoy Antenna (AN/BRR-6/6B) <div>Articles:</div>		3.442 -	4.441 -	3.188 -	0.000 -	3.188 -
FY 2023 Plans: The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books. <b>FY 2024 Base Plans:</b> The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.						
Title: Antenna Improvements <div>Articles:</div>		4.289 -	4.159 -	4.302 -	0.000 -	4.302 -
FY 2023 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0742 / Sub Integrated Ant System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.						
FY 2024 Base Plans: The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.						
Title: Submarine Communication Transmitter Buoy (SECT)(AN/BST-1)  Articles:		0.496 -	0.689 -	0.540 -	0.000 -	0.540 -
FY 2023 Plans: The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.						
FY 2024 Base Plans: The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.						
Accomplishments/Planned Programs Subtotals		15.543	27.991	17.473	0.000	17.473

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy							Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)			Project (Number/Name) 0742 / Sub Integrated Ant System		

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• OPN/3130: Submarine Communication Equipment	64.642	74.569	82.378	-	82.378	81.531	81.629	82.258	83.905	Continuing	Continuing

Remarks

D. Acquisition Strategy

The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0742 / Sub Integrated Ant System					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	20.566	10.329	Oct 2021	23.552	Oct 2022	13.550	Oct 2023	-		13.550	Continuing	Continuing	Continuing
Subtotal			20.566	10.329		23.552		13.550		-		13.550	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	1.603	0.873	Oct 2021	0.643	Oct 2022	1.122	Oct 2023	-		1.122	Continuing	Continuing	Continuing
Subtotal			1.603	0.873		0.643		1.122		-		1.122	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	TBD	Not Specified : Not Specified	6.981	2.683	Oct 2021	3.160	Oct 2022	2.269	Oct 2023	-		2.269	Continuing	Continuing	Continuing
Subtotal			6.981	2.683		3.160		2.269		-		2.269	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	1.792	1.658	Feb 2022	0.636	Feb 2023	0.532	Feb 2024	-		0.532	Continuing	Continuing	Continuing
Subtotal			1.792	1.658		0.636		0.532		-		0.532	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 0742 / Sub Integrated Ant System					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			30.942	15.543		27.991		17.473		-		17.473	Continuing	Continuing	N/A

**Remarks**

- Prior Year cost data is provided under PE 0604503N, Project 0742
- The details of Program Element 0604280N, Project 0742 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 0742 / Sub Integrated Ant System									

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 0742																												
Classified (Place Holder)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 0742 / Sub Integrated Ant System

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0742				
Classified (Place Holder)	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0921 / NAVSTAR GPS Equipment			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0921: NAVSTAR GPS Equipment	92.564	28.011	36.380	37.581	-	37.581	52.490	22.387	21.243	21.671	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The FY 2024 funding request was increased by \$1.201M to support the Global Positioning System (GPS) Modernization Miniaturized Airborne GPS Receiver 2000-Modernization (MAGR2K-M) Developmental Test (DT)/Operational Test (OT) on the following air platforms: CMV-22B and MV-22B.

Navigation Satellite Timing & Ranging (NAVSTAR) GPS project (0921) encompasses the Navy's efforts to pace the growing threat to GPS Navigation through the fielding of new GPS receivers, Anti-Jam (AJ) Antennas, and Assured Positioning Navigation and Timing (A-PNT) technologies across all Navy platform types. NAVSTAR GPS is a group of A-PNT systems that provides authorized users with secure, worldwide, all weather, three dimensional position, velocity, and precise time data. NAVSTAR GPS provides A-PNT capability to Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) and combat systems in standalone and networked architectures throughout air and maritime domains. This project is comprised of four distinct efforts: Sea Navigation Warfare (NAVWAR), GPNTS, Air NAVWAR and GPS Modernization. Sea NAVWAR provides AJ antennas and Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS) provides GPS Receivers and A-PNT technology to surface platforms, and Air NAVWAR provides AJ antennas and GPS Modernization provides GPS receivers to air platforms. Research, Development, Testing and Evaluation (RDT&E) funds are used to perform all the non-recurring GPS Surface Ship, Submarine and Aircraft Development, Integration, and Testing efforts in support of NAVSTAR GPS.

The Air and Sea NAVWAR programs provide continued access to GPS information in a denied or impeded electronic environment. Development efforts for both programs provide improvements to various platform type antennas and ensure compatibility with the new Military Code (M-Code) signal. The Air NAVWAR program continues integration efforts using GPS Antenna System (GAS-1), Advanced Digital Antenna Production (ADAP), and other AJ antennas on air platforms while investigating smaller AJ antennas for space constrained platforms and aircraft with unique requirements. The Sea NAVWAR program integrates AJ antennas onto surface and subsurface platforms. The Sea NAVWAR program will continue to research the viability and development of enhanced AJ techniques and technologies.

The GPNTS system is being developed to serve as the primary A-PNT system for the surface Navy to ensure reliable PNT capability and interoperability insertion into GPS receivers and associated C4ISR and Combat Systems in a denied environment. GPNTS pairs with AJ antennas and provides precise A-PNT data required for combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical for network environments. GPNTS will back fit current PNT/GPS systems as well as serve as a forward fit for new platforms. GPNTS is an Open Architecture (OA) development, enabling rapid software and hardware based capability improvements to be inserted without a requirement for single-source contracting. GPNTS will host the Air Force GPS Directorate-developed Military GPS User Equipment (MGUE) card, allowing access to the new GPS M-Code signal. GPNTS will provide more robust and secure GPS/PNT capabilities than is currently in the Fleet. The system will provide the capability to migrate non-real time GPS data toward a Common Computing Environment (CCE) and provide a path for the integration of advanced navigation systems and sensors. GPNTS provides A-PNT capability to C4ISR and Combat Systems in standalone and networked architectures throughout maritime domains.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	<b>Project (Number/Name)</b> 0921 / NAVSTAR GPS Equipment	

Global Position System (GPS) Modernization integrates and tests the Navy's the Military GPS User Equipment (MGUE) being developed by the United States Space Force (USSF) and United States Air Force (USAF) Life Cycle Material Command into Naval aircraft to provide improved access to GPS signals in challenged and jammed environments. This project will provide central coordination and management of priorities and funding of multiple parallel efforts to integrate different MGUE into various type/model/series aircraft across multiple platform program offices. Due to the diversity of Naval aircraft, each platform will require unique Prime Vendor Integration (PVI) and testing that includes software updates to avionics and mission computers as well as modifications to the airframe based on Size, Weight, Power and Cost (SWaP-C) requirements. GPS Modernization delivers increased GPS Anti-Jam (AJ) protection through modernized GPS receivers that will utilize the new Military Code (M-Code) GPS Signal in Space, incorporate enhanced cryptology, enable blue force GPS electronic attack, deliver greater position and time accuracy, and provide improved protection against signal spoofing as compared to legacy receivers. This effort supports Navy compliance with Public Law 111-383 which prohibits spending funds on non-M-Code GPS user equipment after FY 2017.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Sea Navigation Warfare (NAVWAR)	1.124	1.105	1.100	0.000	1.100
<b>Articles:</b>	-	-	-	-	-
<p><b>Description:</b> Sea NAVWAR provides the Warfighter continued access to GPS through the use of AJ Antenna Systems designed to counter GPS Electronic Warfare threats due to intentional and unintentional interference on surface and subsurface platforms through the continued development of AJ antennas. Program currently supports Increment 2 Advanced Digital Antenna Production (ADAP) antenna for surface platforms. Increment 2 ADAP continues to research the viability and development of smaller AJ antennas for surface platforms with SWaP-C restrictions and will ensure compatibility with the Military Code (M-Code) signal. Increment 2 ADAP received acquisition authority (November 2018) to add a small antenna variant to the program baseline.</p> <p><b>FY 2023 Plans:</b> Increment 2 Advanced Digital Antenna Production (ADAP) antenna: Continue government oversight, system engineering, logistics, contracts, and programmatic management efforts for Increment 2 ADAP to include assessment of new AJ capabilities and technologies.</p> <p>Continue investigation of enhanced AJ capabilities for integration into existing Sea Naval Warfare (NAVWAR) antenna systems.</p> <p>Continue technology developmental efforts with industry to mature technical base for a next-generation AJ antenna.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 0921 / NAVSTAR GPS Equipment			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Begin integration of Multi-Platform Anti-Jam GPS Navigation Antenna (MAGNA) with Mounted Assured PNT System (MAPS) and Dismounted Assured PNT System (DAPS) units to support fleet experimentation to demonstrate MAPS/DAPS as a potential replacement to the Defense Advanced GPS Receiver (DAGR).</p> <p><b>FY 2024 Base Plans:</b> Increment 2 Advanced Digital Antenna Production (ADAP) antenna: Continue government oversight, system engineering, logistics, contracts, and programmatic management efforts for Increment 2 Advanced Digital Antenna Production (ADAP) to include assessment of new Anti-Jam (AJ) capabilities and technologies.</p> <p>Continue investigation of enhanced AJ capabilities for integration into existing Sea Naval Warfare (NAVWAR) antenna systems.</p> <p>Continue technology developmental efforts with industry to mature technical base for next-generation AJ antenna.</p> <p>Complete integration of MAGNA with Mounted Assured PNT System (MAPS) and Dismounted Assured PNT System (DAPS) units to support fleet experimentation to demonstrate MAPS/DAPS as a potential replacement to the Defense Advanced GPS Receiver (DAGR).</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding decrease of \$0.005M from FY2023 to FY2024 due to completion of MAPS/DAPS integration in FY2024.</p>						
<p><b>Title:</b> Global Positioning System (GPS) - Based Positioning, Navigation and Timing (PNT) Service (GPNTS)</p> <p><b>Articles:</b></p> <p><b>Description:</b> The GPNTS system is being developed to serve as the primary Assured Positioning Navigation and Timing (A-PNT) system for the surface Navy to ensure reliable PNT capability and interoperability insertion into GPS receivers and associated Command, Control, Communications, Computers (C4) Intelligence, Surveillance and Reconnaissance (ISR) and Combat Systems in a denied environment. GPNTS pairs with AJ antennas and provides precise A-PNT data required for combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical for network environments. GPNTS will back fit current PNT/GPS systems as well as serve as a forward fit for new platforms. GPNTS</p>		1.909 -	2.933 -	1.707 -	0.000 -	1.707 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0921 / NAVSTAR GPS Equipment		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>provides a robust, secure, integrated and interoperable network-centric PNT capability to include: Selective Availability Anti-Spoofing Security Module (SAASM) GPS security architecture; migration path to modernized signal-in-space (M-Code); open architecture approach allowing for the integration of alternate PNT sources; scalable solution that consolidates platform receivers, improved anti-jam and anti-spoof mechanisms; and extended timing holdover in a Global Positioning System (GPS) denied environment.</p> <p>As fielding of the GPS - Based Positioning, Navigation and Timing (PNT) Service (GPNTS) system continues, RDTEN will support product improvements such as the integration of the Office of Naval Research (ONR) developed assured-PNT Future Naval Capability (FNC), Non-GPS Aided Positioning for Surface Ships (NoGAPSS) as well as software enhancements for Assured-PNT sensor suite integration to include Celestial Navigation and Enhanced Assurance Timing (EAT).</p> <p><b>FY 2023 Plans:</b> Commence efforts to develop and test a GPNTS system capable of hosting the Automated Celestial Navigation System (ACNS) below deck hardware. Effort is in direct support of the NoGAPSS FNC.</p> <p>Commence coordination activities to prepare for and conduct NoGAPSS Technical Evaluation.</p> <p>Continue coordination activities to prepare for and conduct the required Follow-on Operational Test and Evaluation (FOT&amp;E) in support of a fielding decision for the NoGAPSS capability.</p> <p>Continue platform integration and development to support GPNTS on both Littoral Combat Ships (LCS) variants as directed by the Navy to provide common Assured Positioning Navigation and Timing (A-PNT) capabilities and Navigation Warfare (NAVWAR) compliance on LCS. Integration efforts require identifying interface requirements and analysis that utilizes existing variants of GPNTS.</p> <p>Continue NoGAPSS Model Based System Engineering (MBSE) implementation as directed by the Navy to provide a navigation system-of-systems architecture to integrate all sources of Position, Velocity, Attitude and Timing (PVAT) data and the NoGAPSS capability.</p> <p>Continue software defect resolution with software vendor in support of Full Operational Capability (FOC).</p> <p><b>FY 2024 Base Plans:</b></p>						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0921 / NAVSTAR GPS Equipment		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue efforts to develop and test a GPNTS system capable of hosting the Automated Celestial Navigation System (ACNS) below deck hardware. Effort is in direct support of the NoGAPSS FNC.						
Conduct Environmental Qualification Testing (EQT) of a GPNTS system hosting Automated Celestial Navigation System (ACNS) below-deck hardware in support of NoGAPSS FNC.						
Commence and complete Aegis Integration Event (AIE) for GPNTS software 2.0.076 to achieve Combat Systems certification in support of NoGAPSS FNC.						
Conduct NoGAPSS Technical Evaluation.						
Conduct the required Follow-on Operational Test and Evaluation (FOT&E) in support of a fielding decision for the NoGAPSS capability.						
Complete platform integration and development to support GPNTS on both Littoral Combat Ships (LCS) variants as directed by the Navy to provide common Assured Positioning Navigation and Timing (A-PNT) capabilities and Navigation Warfare (NAVWAR) compliance on LCS. Integration efforts require identifying interface requirements and analysis that utilizes existing variants of GPNTS.						
Complete NoGAPSS Model Based System Engineering (MBSE) implementation as directed by the Navy to provide a navigation system-of-systems architecture to integrate all sources of Position, Velocity, Attitude and Timing (PVAT) data and the NoGAPSS capability.						
Continue software defect resolution with software vendor in support of Full Operational Capability (FOC).						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decrease of \$1.226M from FY2023 to FY2024 due to completion of the platform integration and development to support GPNTS on both Littoral Combat Ships (LCS) variants as directed by the Navy to provide common Assured Positioning Navigation and Timing (A-PNT) capabilities and Navigation Warfare (NAVWAR) compliance on LCS, and completion of the NoGAPSS Model Based System Engineering (MBSE)						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0921 / NAVSTAR GPS Equipment		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
implementation as directed by the Navy to provide a navigation system-of-systems architecture to integrate all sources of Position, Velocity, Attitude and Timing (PVAT) data and the NoGAPSS capability.						
Title: Air Navigation Warfare (NAVWAR)		5.789	3.670	3.595	0.000	3.595
Articles:		-	-	-	-	-
Description: Air Navigation Warfare (NAVWAR) provides the Warfighter continued access to Global Positioning System (GPS) through the use of Anti-Jam (AJ) Antenna Systems designed to counter GPS Electronic Warfare threats due to intentional and unintentional interference. Air NAVWAR efforts include investigation and testing of emerging technologies to improve AJ capability and technologies such as development of miniaturized very small antenna systems to allow for the capability on small variant aircraft. Efforts will also include development to ensure antennas can accept the new Military Code (M-Code) signal.						
FY 2023 Plans:						
Continue ground and flight testing of Multi-Platform Anti-Jam Navigation Antenna (MAGNA)-I on AH-1Z and UH-1Y helicopters.						
Continue to support Assured-Positioning Navigation and Timing (A-PNT) efforts by working with Navy Air platforms on navigation requirements and coordinating with surface Navy platforms to leverage synergies.						
Continue Global Positioning System (GPS) Demonstrations and laboratory testing of GPS receivers with associated antennas at Facilities for Antenna and Radar Cross Section (RCS) Measurements (FARM), to include continued beam-steering comparison tests and comparing legacy anti-jam and modernized antennas to address obsolescence issues.						
Continue to provide subject matter expertise to various platforms (including MQ-4C, MQ-25, RQ-21, F/A-18C/D) as they consider various Anti-Jam (AJ) solutions.						
Complete Non-Recurring Engineering (NRE) integration efforts for Multi-Platform AJ GPS Navigation Antenna Integrated (MAGNA-I) on AH-1Z, UH-1Y helicopters to include platform interface modifications; software development, integration testing, and hardware integration. Conduct functional flight testing in a benign environment. Finalize and release the MAGNA-I integration technical data package.						
FY 2024 Base Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0921 / NAVSTAR GPS Equipment		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Continue to support Assured-Positioning Navigation and Timing (A-PNT) efforts by working with Navy Air platforms on navigation requirements and coordinating with surface Navy platforms to leverage synergies.</p> <p>Continue Global Positioning System (GPS) Demonstrations and laboratory testing of GPS receivers with associated antennas at Facilities for Antenna and Radar Cross Section (RCS) Measurements (FARM), to include continued anti-jam comparison tests, including comparing legacy anti-jam and modernized antennas to address obsolescence issues.</p> <p>Continue to provide subject matter expertise to various platforms (including MQ-4C, MQ-25, RQ-21, F/A-18C/D) as they consider various AJ solutions.</p> <p>Complete ground and flight testing of MAGNA-I on AH-1Z and UH-1Y helicopters.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding decrease of \$0.075M from FY 2023 to FY 2024 due to the completion of the AH-1Z/UH-1Y MAGNA-I integration effort in FY 2023.</p>						
<p><b>Title:</b> Global Positioning System (GPS) Modernization</p> <p><b>Articles:</b></p> <p><b>Description:</b> GPS Modernization delivers increased GPS AJ protection through modernized GPS receivers that will utilize the new Military Code (M-Code) GPS Signal in Space, incorporate enhanced cryptology, enable blue force GPS electronic attack, deliver greater position and time accuracy, and provide improved protection against signal spoofing as compared to legacy receivers. This effort supports Navy's compliance with Public Law 111-383, which requires that all GPS user equipment be capable of receiving the new GPS M-Code signal after FY 2017.</p> <p>To meet the Navy's fielding timeline, system engineering and requirement development efforts must begin before actual delivery of Military GPS User Equipment (MGUE). The integration timeline of modernized GPS receivers is 5+ years from planning to test and is dependent on platform. Each type/model/series aircraft uses a unique GPS receiver and GPS system configuration, which requires separate parallel Prime Vendor Integration (PVI) and testing efforts to include: software updates to avionics and mission computers; modifications to the airframe</p>		19.189 37	28.672 19	31.179 23	0.000 -	31.179 23

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
based on Size, Weight, Power and Cost (SWaP-C) requirements; coordination with each Program Management Air (PMA) organization; management, oversight and support of each effort; and contracting and working with each Prime Vendor Integrator for the respective platform.						
Project currently consists of eleven (11) parallel efforts that integrate five (5) different Military Code (M-Code) Global Positioning System (GPS) receivers into different type model series aircraft. The M-Code receivers are being developed under two (2) Air Force programs, Miniaturized Airborne GPS Receiver 2000-Modernization (MAGR2K-M) and Embedded GPS/Inertial Navigation System (EGI-M). The EGI-M program includes the LN-351, LN-300, Accurate Navigation System - Modernization (ANAV-M) and H-764-M. CMV-22B/MV-22B and E-6B will integrate the MAGR2K-M. F/A-18E/F and EA-18G will integrate the ANAV-M. E-2D, CH-53K, P-8A, MQ-4C, and MQ-8C will integrate the LN-351. KC-130J will integrate the H-764-M. MH-60 R/S will integrate the LN-300.						
FY 2023 Plans: Procure for Accurate Navigation System - Modernization (ANAV-M) test article receivers to provide production representative to support integration and testing for F/A-18E/F and EA-18G.						
Procure LN-351 test article receivers to provide production representative M-Code receivers to support integration and testing for UH-1Y/AH-1Z and MQ-4C.						
Commence Developmental Test (DT)/Operational Test (OT) for E-6B MAGR2K-M.						
Commence early integration efforts with Engineering & Manufacturing Development (EMD) units for E-2D platforms.						
Commence Military Code (M-Code) integration efforts to include PIDS review, Environmental Qualification Assessment, Structural Strength Analysis, Electrical Power Load Analysis for E-2D and CH-53K.						
Commence efforts for MH-60 R/S missionization to develop missionized MH-60 R/S specific requirements for LN-300 integration that will leverage Positioning, Navigation, and Timing (PNT) program office contracts.						

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0921 / NAVSTAR GPS Equipment		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Commence Military Code (M-Code) integration efforts to include but not limited to Systems Requirement Review (SRR), structural analysis, electrical power load analysis, human engineering, product support analysis for P-8A, MQ-4C, MQ-8C, and KC-130J.						
Continue to support Prime Vendor Integration (PVI) on two (2) air platforms: CMV-22B and MV-22B.						
Complete Prime Vendor Integration (PVI) on the E-6B platform.						
Conduct Military Code (M-Code) Prime Vendor Integration (PVI) on the CH-53K air platform.						
Continue CH-53K missionization to develop missionized CH-53K specific requirements for LN-351 integration.						
Continue providing overarching management, central coordination, government oversight and guidance, shared expertise, and engineering during Military Code (M-Code) receiver development to review M-Code receiver requirements and ensure these requirements support aircraft performance and integration for MV-22B, CMV-22B, E-6B, F/A-18E/F, EA-18G, E-2D, MH-60 R/S, CH-53K, P-8A, MQ-4C, MQ-8C, and KC-130J.						
Continue to support United States Space Force (USSF) Miniaturized Airborne Global Positioning System (GPS) receiver 2000-Modernization (MAGR2K-M) & Embedded GPS/Inertial Navigation System (EGI-M) GPS receiver development, performance, and certification testing.						
Continue to support USSF MAGR2K-M & EGI-M GPS receiver program events to include but not limited to Systems Engineering and Technical Reviews (SETR), Integrated Baseline Reviews, Preliminary Design Reviews (PDR) and Critical Design Review (CDR).						
Continue teaming with the United States Air Force (USAF) to determine the feasibility of using a Janus Software Design Receiver (SDR) as a GPS Receiver Card and continue to study opportunities to incorporate improvements into GPS receivers.						
Complete laboratory testing of MAGR2K-M receivers in government labs.						
FY 2024 Base Plans:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Conduct Military Code (M-Code) Prime Vendor Integration (PVI) on the following three (3) air platforms: F/A-18E/F, EA-18G, and E-2D.							
Continue Military Code (M-Code) integration efforts to develop integration requirements for P-8A, MQ-4C, MQ-8C, and KC-130J.							
Commence early integration efforts with Engineering & Manufacturing Development (EMD) units for KC-130J air platform.							
Commence Developmental Test (DT)/Operational Test (OT) of MAGR2K-M GPS Receivers on two (2) air platforms: CMV-22B and MV-22B.							
Continue Developmental Test (DT)/Operational Test (OT) for E-6B MAGR2K-M.							
Continue early integration efforts with Engineering & Manufacturing Development (EMD) units for E-2D platforms.							
Continue to support Prime Vendor Integration (PVI) on three (3) air platforms: CMV-22B, MV-22B, and CH-53K.							
Continue CH-53K missionization to develop missionized CH-53K specific requirements for LN-351 integration.							
Continue Military Code (M-Code) integration efforts to include PIDS review, Environmental Qualification Assessment, Structural Strength Analysis, Electrical Power Load Analysis for E-2D and CH-53K.							
Continue efforts for MH-60 R/S missionization to develop missionized MH-60 R/S specific requirements for LN-300 integration that will leverage Positioning, Navigation, and Timing (PNT) program office contracts.							
Continue providing overarching management, central coordination, government oversight and guidance, shared expertise, and engineering during Military Code (M-Code) receiver development to review M-Code receiver requirements and ensure these requirements support aircraft performance and integration for CMV-22B, MV-22B, E-6B, F/A-18E/F, EA-18G, E-2D, MH-60 R/S, CH-53K, P-8A, MQ-4C, MQ-8C, and KC-130J.							

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023							
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		<b>Project (Number/Name)</b> 0921 / NAVSTAR GPS Equipment							
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>						
Continue to support United States Space Force (USSF) Miniaturized Airborne Global Positioning System (GPS) receiver 2000-Modernization (MAGR2K-M) & Embedded GPS/Inertial Navigation System (EGI-M) GPS receiver development, performance, and certification testing.											
Continue to support USSF MAGR2K-M & EGI-M GPS receiver program events to include but not limited to Systems Engineering and Technical Reviews (SETR), Integrated Baseline Reviews, Preliminary Design Reviews (PDR) and Critical Design Review (CDR).											
Continue teaming with the United States Air Force (USAF) to determine the feasibility of using a Janus Software Design Receiver (SDR) as a GPS Receiver Card and continue to study opportunities to incorporate improvements into GPS receivers.											
<b>FY 2024 OCO Plans:</b> N/A											
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding increase of \$2.507M from FY2023 to FY2024 to support MAGR2K-M Developmental Test (DT)/ Operational Test (OT) for the CMV-22B and MV-22B, and integration of the ANAV-M and LN-351 test article receivers on the F/A-18E/F, EA-18G, CH-53K, E-2D, UH-1Y/AH-1Z and MQ-4C.											
<b>Accomplishments/Planned Programs Subtotals</b>	28.011	36.380	37.581	0.000	37.581						
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2657: NAVSTAR GPS Receivers (Space)	33.097	30.439	37.319	-	37.319	41.867	42.771	43.554	44.539	Continuing	Continuing
• APN/0577: Common Avionics Changes	102.861	128.120	136.197	-	136.197	258.943	264.323	308.865	347.149	1,841.037	6,408.034
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
Both the Navigation Warfare (NAVWAR) Air and Sea programs will continue to integrate improved Anti-Jam (AJ) capability onto air and sea platforms and ensure compatibility with new Military Code (M-Code) signal.											

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<p>Global Positioning System (GPS) - based Positioning, Navigation, and Timing (PNT) Service (GPNTS) program will develop, acquire, and field GPNTS, a scalable Selective Availability/Anti- Spoofing Module (SAASM) GPS-based service-oriented architecture PNT system that will provide an open, extensible, modernized replacement for the current fleet PNT systems. GPNTS will also integrate Military GPS User Equipment (MGUE) and the Office of Naval Research (ONR) developed Non-GPS Aided Positioning for Surface Ships (NoGAPSS) capabilities. A firm fixed price contract was awarded March 2018 to procure Low Rate Initial Production (LRIP) and Full Rate Production (FRP) systems.</p> <p>GPS Modernization will manage the non-recurring engineering required to conduct systems engineering, integration and test of modernized GPS receivers and utilize United States Space Force (USSF) hardware contracts, and Navy air platform integration contracts.</p>		



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0921 / NAVSTAR GPS Equipment					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air NAVWAR Development	MIPR	Mayflower : Bedford, MA	2.892	0.000		0.000		0.000		-		0.000	0.000	2.892	-
Air NAVWAR MAGNA-I Integration	C/CPIF	Bell Helicopter : Fort Worth, TX	2.071	2.170	Jan 2022	0.588	Jan 2023	0.000		-		0.000	0.000	4.829	-
Air NAVWAR Development Support	WR	NAWC : Pax River, MD	1.795	0.000		0.000		0.000		-		0.000	0.000	1.795	-
Air NAVWAR Govt Eng Support	WR	NAWC : Pax River, MD	2.670	1.338	Dec 2021	0.986	Dec 2022	1.102	Dec 2023	-		1.102	Continuing	Continuing	Continuing
Air NAVWAR Systems Engineering	WR	NIWC PAC : San Diego, CA	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Air NAVWAR Product Development	WR	GPS Directorate : Los Angeles, CA	0.495	0.000		0.000		0.000		-		0.000	0.000	0.495	-
Air NAVWAR Development - Studies	MIPR	MITRE : Bedford, MA	0.750	0.370	Nov 2021	0.000		0.000		-		0.000	0.000	1.120	-
Sea NAVWAR Development Support	WR	SSC PAC, NUWC : San Diego, Newport	0.763	0.464	Dec 2021	0.655	Dec 2022	0.396	Dec 2023	-		0.396	Continuing	Continuing	Continuing
Sea NAVWAR Govt Eng Support	WR	NIWC PAC, NUWC : San Diego, Newport	0.000	0.000		0.000		0.244	Dec 2023	-		0.244	Continuing	Continuing	Continuing
GPNTS SW / NoGAPSS Development	C/CPFF	Raytheon : San Diego, CA	12.310	0.000		1.250	Jan 2023	0.620	Jan 2024	-		0.620	Continuing	Continuing	Continuing
GPNTS Development Support	WR	NIWC PAC : San Diego, CA	1.630	0.000		0.000		0.000		-		0.000	0.000	1.630	-
GPNTS Govt Eng Support	WR	NIWC PAC : San Diego, CA	2.143	1.058	Dec 2021	1.055	Dec 2022	0.885	Dec 2023	-		0.885	Continuing	Continuing	Continuing
GPS Mod Development - Requirements Development	C/IDIQ	Boeing : St Louis, MO	0.137	0.450	Jan 2022	0.000		0.000		-		0.000	0.000	0.587	-
GPS Mod Development ANAV-M Integration F/18 E/F & EA-18G	C/CPIF	Boeing : St Louis, MO	0.000	0.164	Jan 2022	1.747	Jan 2023	2.491	Jan 2024	-		2.491	Continuing	Continuing	Continuing
GPS Mod Development - Requirements Development	C/IDIQ	Northup Grumman : Melbourne, FLA	0.557	0.112	Jan 2022	0.000		0.000		-		0.000	0.000	0.669	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0921 / NAVSTAR GPS Equipment					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GPS Mod Development LN-351 Integration E-2D	C/CPIF	Northup Grumman : Melbourne, FLA	0.000	0.000		1.214	Jan 2023	2.204	Jan 2024	-		2.204	Continuing	Continuing	Continuing
GPS Mod Development MAGR2K-M MV-22B,CMV-22B	C/CPIF	Bell Boeing : Amarillo, TX	4.609	3.444	Feb 2022	5.556	Feb 2023	5.585	Feb 2024	-		5.585	Continuing	Continuing	Continuing
GPS Mod Development CH-53K	C/CPIF	Sikorsky : Stratford, CT	0.884	0.000		0.000		0.000		-		0.000	0.000	0.884	-
GPS Mod Development LN-351 Integration CH-53K	C/CPIF	Sikorsky : Stratford, CT	0.000	0.000		1.256	Jan 2023	3.558	Jan 2024	-		3.558	Continuing	Continuing	Continuing
GPS Mod Development - Missionization	C/CPFF	Northrup Grumman : Los Angeles, CA	0.700	3.371	Jan 2022	3.730	Jan 2023	3.409	Jan 2024	-		3.409	Continuing	Continuing	Continuing
GPS Mod Development LN-351 Hardware	C/IDIQ	Northup Grumman : Warner Robbins, GA	0.000	4.305	Jan 2022	4.474	Jan 2023	0.000		-		0.000	0.000	8.779	-
GPS Mod Development MH-60	C/CPIF	Lockheed Martin : Owego, NY	1.068	0.000		0.000		0.000		-		0.000	0.000	1.068	-
GPS Mod Product Development ANAV-M Hardware	C/IDIQ	Honeywell : Clearwater, FL	0.000	0.000		3.082	Jan 2023	0.000		-		0.000	0.000	3.082	-
GPS Mod Development - Studies	MIPR	MITRE : Bedford, MA	1.050	1.187	Nov 2021	1.127	Nov 2022	2.616	Nov 2023	-		2.616	Continuing	Continuing	Continuing
GPS Mod Development Support	WR	NIWC PAC, NAWC : San Diego, Pax River	1.244	0.000		0.000		0.000		-		0.000	0.000	1.244	-
GPS Mod Govt Eng Support	WR	NIWC PAC, NAWC : San Diego, Pax River	21.684	2.659	Nov 2021	2.712	Nov 2022	2.412	Jan 2024	-		2.412	Continuing	Continuing	Continuing
GPS Mod Product Development	WR	GPS Directorate : Los Angeles, CA	1.399	0.000		0.000		0.393	Dec 2023	-		0.393	Continuing	Continuing	Continuing
Subtotal			61.101	21.092		29.432		25.915		-		25.915	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0921 / NAVSTAR GPS Equipment					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Engineering Services	C/CPAF	BAH : San Diego, Pax River, China Lake	2.423	0.250	Nov 2021	0.205	Nov 2022	0.653	Nov 2023	-		0.653	Continuing	Continuing	Continuing
Engineering Services	WR	NIWC PAC, NAWC : San Diego, Pax River	3.017	1.645	Nov 2021	1.548	Nov 2022	1.537	Nov 2023	-		1.537	Continuing	Continuing	Continuing
Integrated Logistics Support	WR	NIWC PAC, NAWC : San Diego, Pax River	3.202	0.832	Dec 2021	0.482	Dec 2022	0.657	Dec 2023	-		0.657	Continuing	Continuing	Continuing
Software Contract Support	C/CPFF	Raytheon : San Diego	8.568	0.500	Nov 2021	0.445	Nov 2022	0.000		-		0.000	0.000	9.513	-
Subtotal			17.210	3.227		2.680		2.847		-		2.847	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC : Pax River	2.254	0.534	Nov 2021	0.809	Nov 2022	1.207	Nov 2023	-		1.207	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NIWC PAC, NUWC : San Diego, Newport	3.443	0.000		0.000		0.000		-		0.000	0.000	3.443	-
Operational Test & Evaluation (OT&E)	WR	NIWC PAC : San Diego	1.374	0.351	Nov 2021	0.183	Nov 2022	0.202	Nov 2023	-		0.202	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NIWC PAC, NAWC PAX : San Diego, Pax River	0.000	0.000		0.000		4.477	Nov 2023	-		4.477	Continuing	Continuing	Continuing
Subtotal			7.071	0.885		0.992		5.886		-		5.886	Continuing	Continuing	N/A
Remarks															
Funding increase of \$4.894M from FY2023 to FY2024 primarily to support the MAGR2K-M Developmental Test (DT)/Operational Test (OT) on the MV-22B and CMVB-22 air platforms and increased cost to complete the MAGNA-I ground and flight testing on UH-1Y/AH-1Z helicopters.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 0921 / NAVSTAR GPS Equipment					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPAF	BAH : San Diego, Pax River, China Lake	7.182	2.807	Nov 2021	3.276	Nov 2022	2.933	Nov 2023	-		2.933	Continuing	Continuing	Continuing
Subtotal			7.182	2.807		3.276		2.933		-		2.933	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			92.564	28.011		36.380		37.581		-		37.581	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 5		PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		0921 / NAVSTAR GPS Equipment	

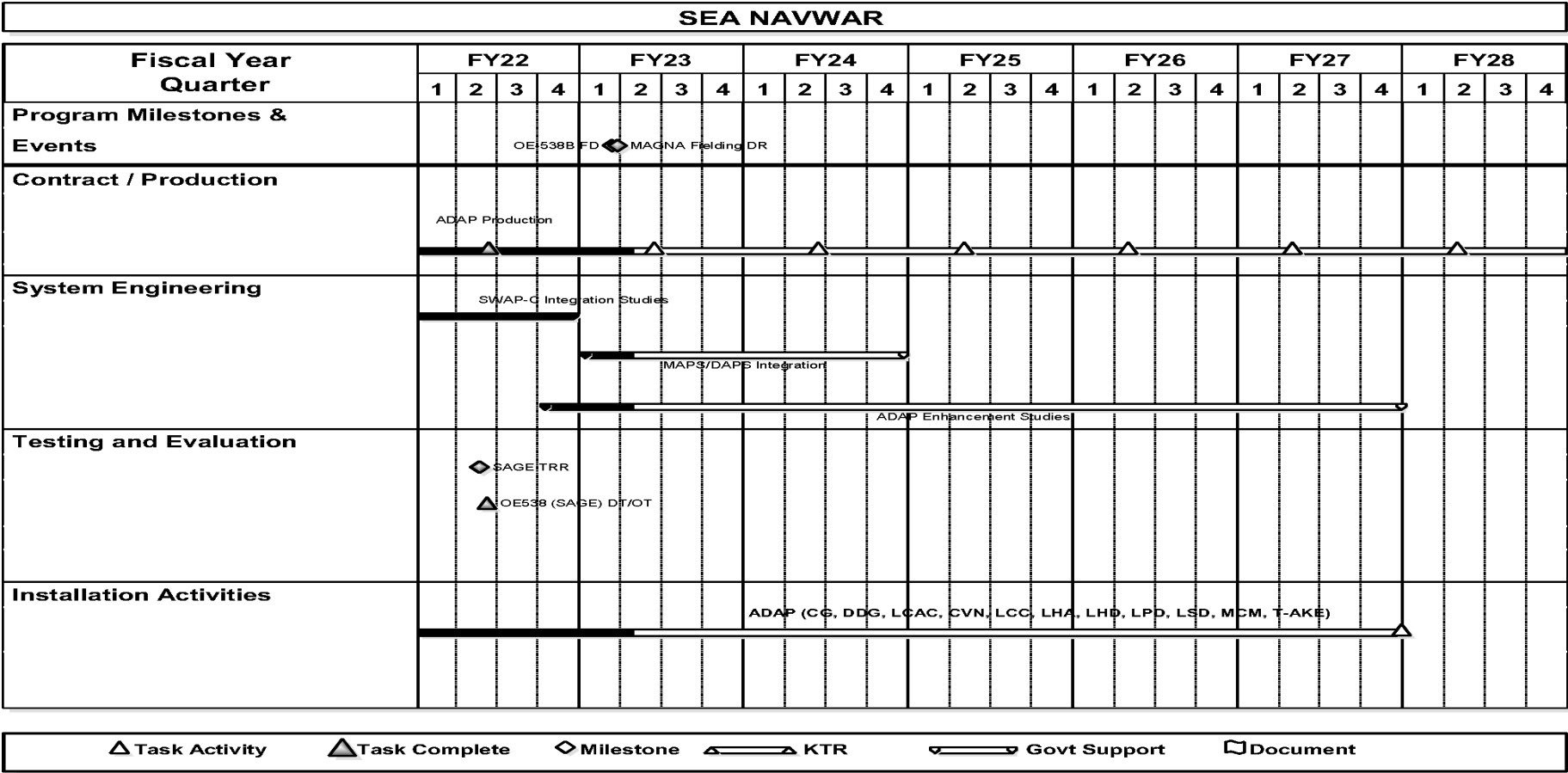
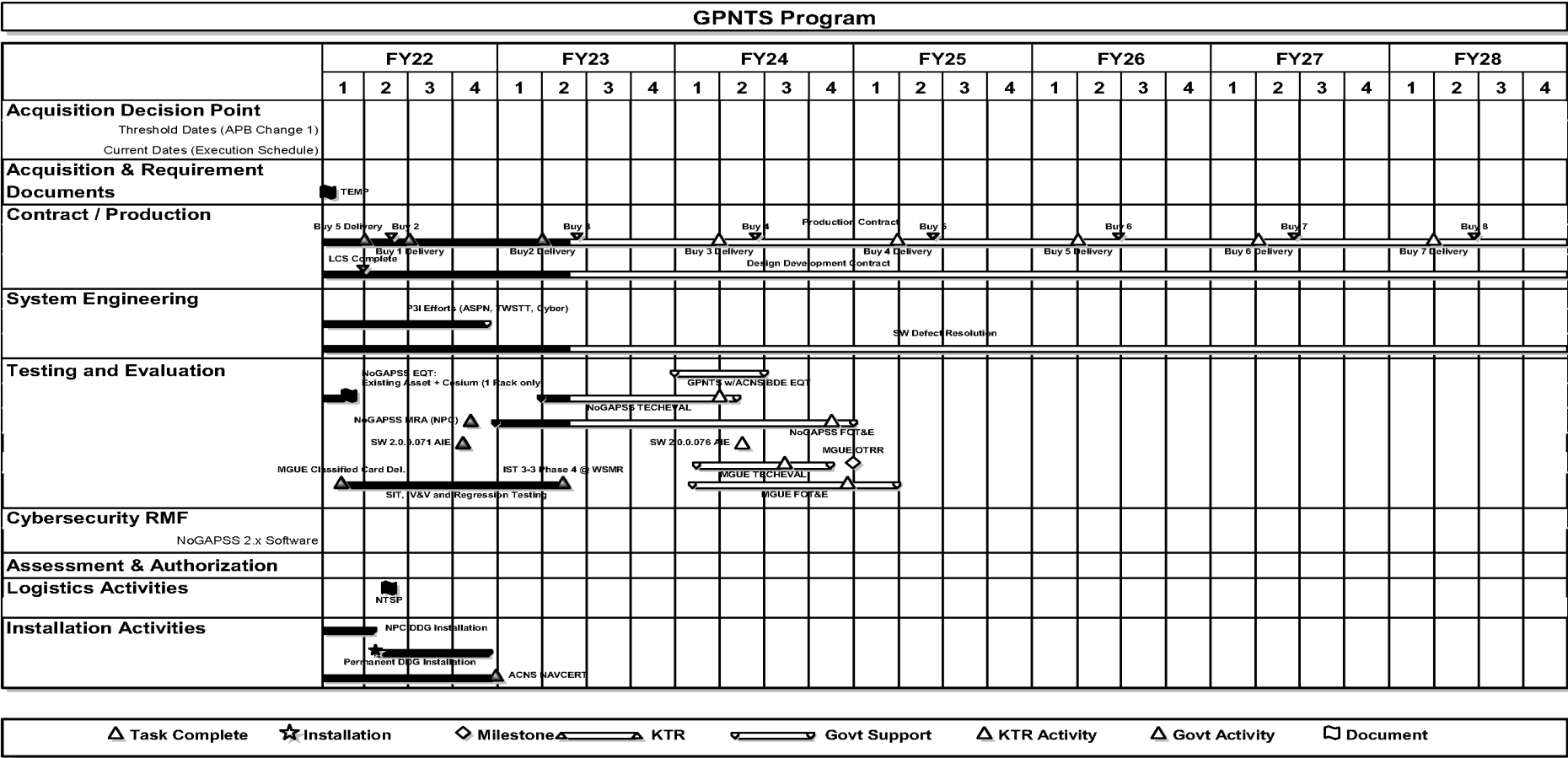


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy															Date: March 2023				
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 0921 / NAVSTAR GPS Equipment				



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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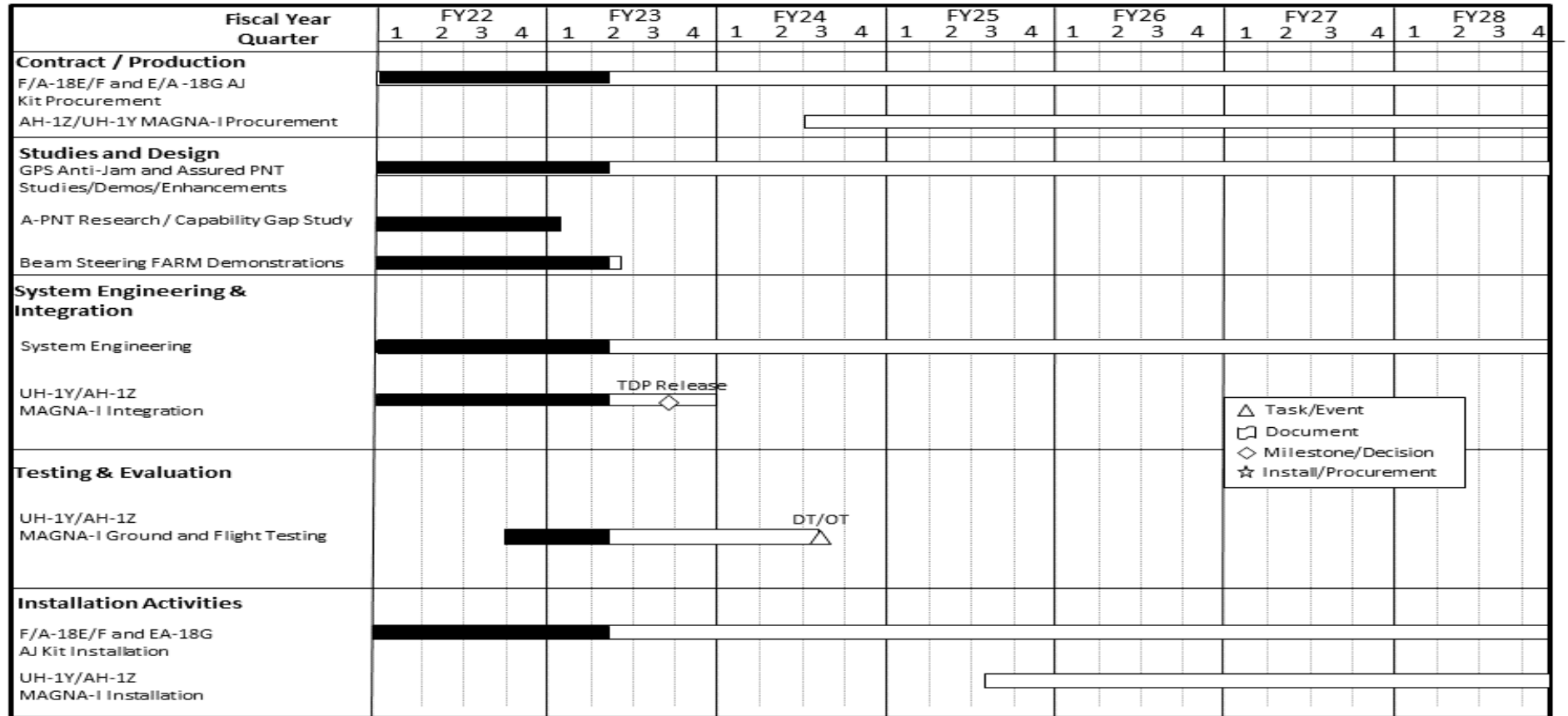
R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

Project (Number/Name)

0921 / NAVSTAR GPS Equipment

## Air Navigation



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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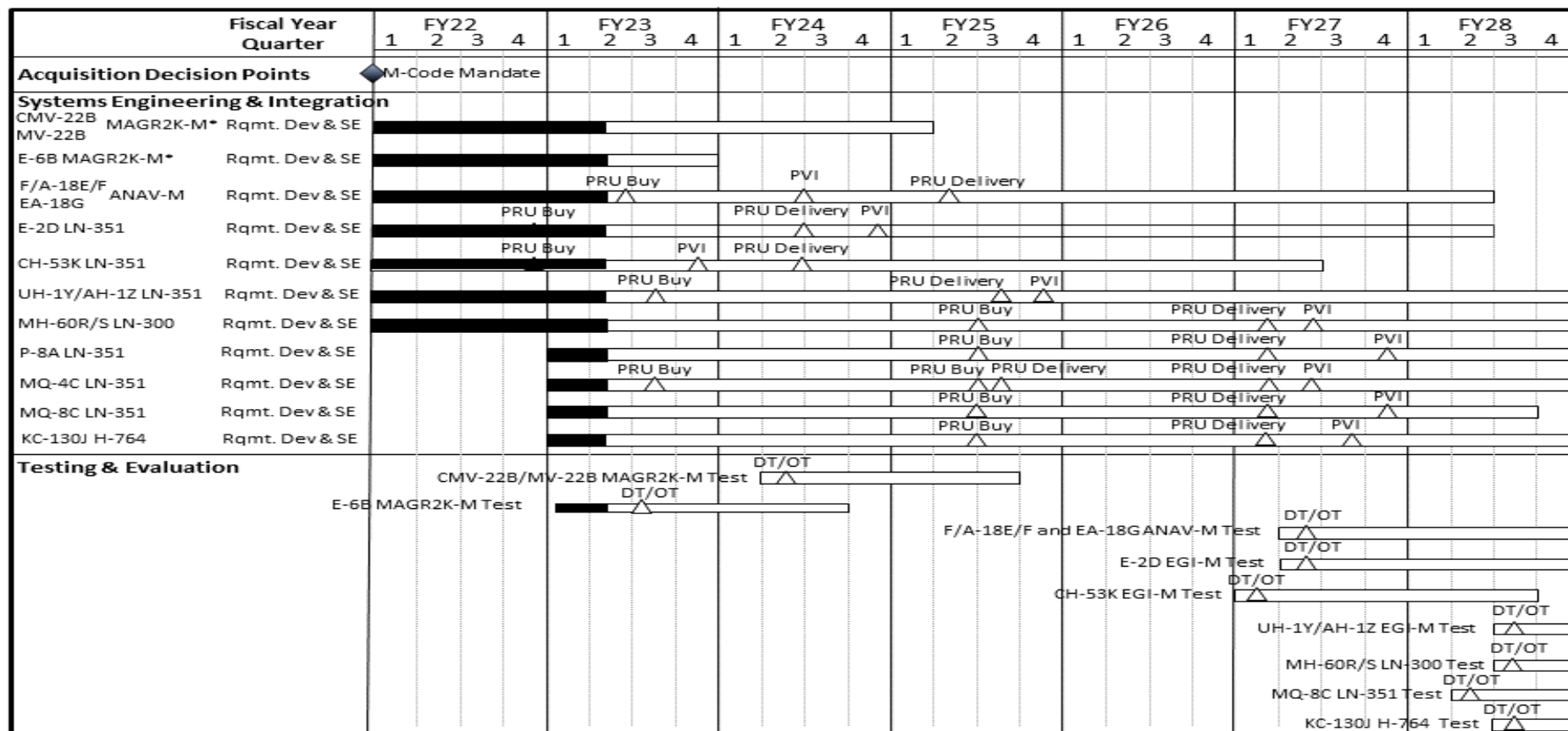
R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

Project (Number/Name)

0921 / NAVSTAR GPS Equipment

## GPS Modernization



- \* MAGR-2K-M PRUs were bought in FY17
- \*\*MQ-4C LN-351 PRU Buy in Q3FY23 and Q2FY25



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

Project (Number/Name)

0921 / NAVSTAR GPS Equipment

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0921</b>				
Sea NAVWAR: Sea Navigation MAGNA Fielding Decision Review	1	2023	1	2023
Sea NAVWAR: Sea Navigation OE-538B Fielding Decision	1	2023	1	2023
Sea NAVWAR: Sea Navigation ADAP 10 Year Production Contract	1	2022	4	2028
Sea NAVWAR: Sea Navigation ADAP Production Contract Award (FY22)	2	2022	2	2022
Sea NAVWAR: Sea Navigation ADAP Production Contract Award (FY23)	2	2023	2	2023
Sea NAVWAR: Sea Navigation ADAP Production Contract Award (FY24)	2	2024	2	2024
Sea NAVWAR: Sea Navigation ADAP Production Contract Award (FY25)	2	2025	2	2025
Sea NAVWAR: Sea Navigation ADAP Production Contract Award (FY26)	2	2026	2	2026
Sea NAVWAR: Sea Navigation ADAP Production Contract Award (FY27)	2	2027	2	2027
Sea NAVWAR: Sea Navigation ADAP Production Contract Award (FY28)	2	2028	2	2028
Sea NAVWAR: Sea Navigation SWaP-C Integration Studies	1	2022	4	2022
Sea NAVWAR: Sea Navigation MAPS/DAPS Integration	1	2023	4	2024
Sea NAVWAR: Sea Navigation ADAP Enhancement Studies	4	2022	4	2027
Sea NAVWAR: Sea Navigation OE-538B (SAGE) Test Readiness Review (TRR)	2	2022	2	2022
Sea NAVWAR: Sea Navigation OE-538B (SAGE) Development & Operational Test (DT/OT)	2	2022	2	2022
Sea NAVWAR: Sea Navigation ADAP Installations	1	2022	4	2027
GPS-based PNT Service (GPNTS): GPNTS TEMP	1	2022	1	2022
GPS-based PNT Service (GPNTS): GPNTS Follow On Production Contract (FRP)	1	2022	4	2028
GPS-based PNT Service (GPNTS): GPNTS Buy 2 (FRP)	2	2022	2	2022
GPS-based PNT Service (GPNTS): GPNTS Buy 3 (FRP)	2	2023	2	2023

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

0921 / NAVSTAR GPS Equipment

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
GPS-based PNT Service (GPNTS): GPNTS Buy 4 (FRP)	2	2024	2	2024
GPS-based PNT Service (GPNTS): GPNTS Buy 5 (FRP)	2	2025	2	2025
GPS-based PNT Service (GPNTS): GPNTS Buy 6 (FRP)	2	2026	2	2026
GPS-based PNT Service (GPNTS): GPNTS Buy 7 (FRP)	2	2027	2	2027
GPS-based PNT Service (GPNTS): GPNTS Buy 8 (FRP)	2	2028	2	2028
GPS-based PNT Service (GPNTS): GPNTS Design Development Contract	1	2022	4	2028
GPS-based PNT Service (GPNTS): LCS Complete	1	2022	1	2022
GPS-based PNT Service (GPNTS): GPNTS P3I Efforts	1	2022	4	2022
GPS-based PNT Service (GPNTS): GPNTS SW Defect Resolution	1	2022	4	2028
GPS-based PNT Service (GPNTS): GPNTS NoGAPSS EQT	1	2022	1	2022
GPS-based PNT Service (GPNTS): GPNTS NoGAPSS MRA (NPC)	4	2022	4	2022
GPS-based PNT Service (GPNTS): GPNTS SW 2.0.0.071 AIE	4	2022	4	2022
GPS-based PNT Service (GPNTS): GPNTS SW 2.0.0.076 AIE	2	2024	2	2024
GPS-based PNT Service (GPNTS): GPNTS w/ ACNS BOE EQT	1	2024	2	2024
GPS-based PNT Service (GPNTS): GPNTS NoGAPPS TECH EVAL	2	2023	2	2024
GPS-based PNT Service (GPNTS): GPNTS NoGAPPS FOT&E	4	2022	4	2024
GPS-based PNT Service (GPNTS): GPNTS MGUE TECH EVAL	1	2024	4	2024
GPS-based PNT Service (GPNTS): GPNTS MGUE OTRR	4	2024	4	2024
GPS-based PNT Service (GPNTS): GPNTS MGUE FOT&E	1	2024	1	2025
GPS-based PNT Service (GPNTS): GPNTS MGUE SIT, IV&V and Regression Testing	1	2022	2	2023
GPS-based PNT Service (GPNTS): GPNTS MGUE Classified Card Delivery	1	2022	1	2022
GPS-based PNT Service (GPNTS): GPNTS MGUE IST 3-3 Phase 4 @ WSMR	2	2023	2	2023
GPS-based PNT Service (GPNTS): GPNTS NTSP	2	2022	2	2022
GPS-based PNT Service (GPNTS): GPNTS NPC DDG Installation	1	2022	1	2022
GPS-based PNT Service (GPNTS): GPNTS Permanent DDG Installation	2	2022	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 0921 / NAVSTAR GPS Equipment	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
GPS-based PNT Service (GPNTS): GPNTS ACNS Installation and Checkout		1	2022	4	2022
GPS-based PNT Service (GPNTS): GPNTS ACNS NAVCERT		4	2022	4	2022
Air NAVWAR: Air Navigation F/A-18E/F & E/A-18G AJ Kit Procurement Contract		1	2022	4	2028
Air NAVWAR: Air Navigation UH-1Y/AH-1Z AJ MAGNA-I Procurement Contract		3	2024	4	2028
Air NAVWAR: Air Navigation GPS Anti-Jam and Assured PNT Studies/Demos/ Enhancements		1	2022	4	2028
Air NAVWAR: Air Navigation Aviation A-PNT Market Research/Capability Gap		1	2022	1	2023
Air NAVWAR: Air Navigation FARM Demonstrations		1	2022	2	2023
Air NAVWAR: Air Navigation System Engineering		1	2022	4	2028
Air NAVWAR: Air Navigation UH-1Y/AH-1Z MAGNA-I Integration		1	2022	4	2023
Air NAVWAR: Air Navigation UH-1Y/AH-1Z MAGNA-I Integration TDP Release		3	2023	3	2023
Air NAVWAR: Air Navigation UH-1Y/AH-1Z MAGNA-I Ground and Flight Testing		3	2022	3	2024
Air NAVWAR: Air Navigation UH-1Y/AH-1Z MAGNA-I DT/OT		3	2024	3	2024
Air NAVWAR: Air Navigation Installation of F/A-18E/F & EA-18G Kits		1	2022	4	2028
Air NAVWAR: Air Navigation Installation MAGNA-I on UH-1Y/AH-1Z		3	2025	4	2028
GPS Modernization: GPS Modernization M-Code Mandate		1	2022	1	2022
GPS Modernization: GPS Modernization CMV-22B/MV-22B MAGR2K-M Rqmt. Dev & SE		1	2022	1	2025
GPS Modernization: GPS Modernization E-6B Rqmt Dev & SE		1	2022	4	2023
GPS Modernization: GPS Modernization F/A-18E/F & EA-18G ANAV-M Rqmt. Dev & SE		1	2022	2	2028
GPS Modernization: GPS Modernization F/A-18E/F & EA-18G ANAV-M PVI		2	2024	2	2024
GPS Modernization: GPS Modernization F/A-18E/F & EA-18G ANAV-M PRU Buy		2	2023	2	2023
GPS Modernization: GPS Modernization F/A-18E/F & EA-18G ANAV-M PRU Delivery		2	2025	2	2025
GPS Modernization: GPS Modernization E-2D LN-351 Rqmt. Dev & SE		1	2022	2	2028
GPS Modernization: GPS Modernization E-2D LN-351 PRU Buy		4	2022	4	2022

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

0921 / NAVSTAR GPS Equipment

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
GPS Modernization: GPS Modernization E-2D LN-351 PRU Delivery	2	2024	2	2024
GPS Modernization: GPS Modernization E-2D LN-351 PVI	4	2024	4	2024
GPS Modernization: GPS Modernization CH-53K LN-351 Rqmt. Dev & SE	1	2022	2	2027
GPS Modernization: GPS Modernization CH-53K LN-351 PRU Buy	4	2022	4	2022
GPS Modernization: GPS Modernization CH-53K LN-351 PRU Delivery	2	2024	2	2024
GPS Modernization: GPS Modernization CH-53K LN-351 PVI	4	2023	4	2023
GPS Modernization: GPS Modernization UH-1Y/AH-1Z LN-351 Rqmt Dev & SE	1	2022	4	2028
GPS Modernization: GPS Modernization UH-1Y/AH-1Z LN-351 PRU Buy	3	2023	3	2023
GPS Modernization: GPS Modernization UH-1Y/AH-1Z LN-351 PRU Delivery	3	2025	3	2025
GPS Modernization: GPS Modernization UH-1Y/AH-1Z LN-351 PVI	4	2025	4	2025
GPS Modernization: GPS Modernization MH-60R/S LN-300 Rqmt Dev & SE	1	2022	4	2028
GPS Modernization: GPS Modernization MH-60R/S LN-300 PRU Buy	3	2025	3	2025
GPS Modernization: GPS Modernization MH-60R/S LN-300 PRU Delivery	1	2027	1	2027
GPS Modernization: GPS Modernization MH-60R/S LN-300 PVI	2	2027	2	2027
GPS Modernization: GPS Modernization P-8A LN-351 Rqmt Dev & SE	1	2023	4	2028
GPS Modernization: GPS Modernization P-8A LN-351 PRU Buy	3	2025	3	2025
GPS Modernization: GPS Modernization P-8A LN-351 PRU Delivery	1	2027	1	2027
GPS Modernization: GPS Modernization P-8A LN-351 PVI	4	2027	4	2027
GPS Modernization: GPS Modernization MQ-4C LN-351 Rqmt Dev & SE	1	2023	4	2028
GPS Modernization: GPS Modernization MQ-4C LN-351 PRU Buy	3	2023	3	2023
GPS Modernization: GPS Modernization MQ-4C LN-351 PRU Delivery	3	2025	3	2025
GPS Modernization: GPS Modernization MQ-4C LN-351 PRU Buy	2	2025	2	2025
GPS Modernization: GPS Modernization MQ-4C LN-351 PRU Delivery	1	2027	1	2027
GPS Modernization: GPS Modernization MQ-4C LN-351 PVI	2	2027	2	2027
GPS Modernization: GPS Modernization MQ-8C LN-351 Rqmt Dev & SE	1	2023	3	2028

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

0921 / NAVSTAR GPS Equipment

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
GPS Modernization: GPS Modernization MQ-8C LN-351 PRU Buy	3	2025	3	2025
GPS Modernization: GPS Modernization MQ-8C LN-351 PRU Delivery	1	2027	1	2027
GPS Modernization: GPS Modernization MQ-8C LN-351 PVI	4	2027	4	2027
GPS Modernization: GPS Modernization KC-130J H-764 Rqmt Dev & SE	1	2023	4	2028
GPS Modernization: GPS Modernization KC-130J H-764 PRU Buy	3	2025	3	2025
GPS Modernization: GPS Modernization KC-130J H-764 PRU Delivery	1	2027	1	2027
GPS Modernization: GPS Modernization KC-130J H-764 PVI	3	2027	3	2027
GPS Modernization: GPS Modernization CMV-22B/MV-22B MAGR2K-M Test	2	2024	3	2025
GPS Modernization: GPS Modernization CMV-22B/MV-22B MAGR2K-M DT/OT	2	2024	2	2024
GPS Modernization: GPS Modernization F/A-18E/F & EA-18G ANAV-M Test	2	2027	4	2028
GPS Modernization: GPS Modernization F/A-18E/F & EA-18G ANAV-M DT/OT	2	2027	2	2027
GPS Modernization: GPS Modernization E-2D EGI-M Test	2	2027	4	2028
GPS Modernization: GPS Modernization E-2D EGI-M DT/OT	2	2027	2	2027
GPS Modernization: GPS Modernization CH-53K EGI-M Test	1	2027	3	2028
GPS Modernization: GPS Modernization CH-53K EGI-M DT/OT	1	2027	1	2027
GPS Modernization: GPS Modernization UH-1Y/AH-1Z EGI-M Test	3	2028	4	2028
GPS Modernization: GPS Modernization UH-1Y/AH-1Z EGI-M DT/OT	3	2028	3	2028
GPS Modernization: GPS Modernization MH-60R/S LN-300 Test	3	2028	4	2028
GPS Modernization: GPS Modernization MH-60R/S LN-300 DT/OT	3	2028	3	2028
GPS Modernization: GPS Modernization MQ-8C LN-351 Test	2	2028	4	2028
GPS Modernization: GPS Modernization MQ-8C LN-351 DT/OT	2	2028	2	2028
GPS Modernization: GPS Modernization KC-130J H-764 Test	3	2028	4	2028
GPS Modernization: GPS Modernization KC-130J H-764 DT/OT	3	2028	3	2028
GPS Modernization: GPS Modernization E-6B MAGR2K-M Test	1	2023	3	2024
GPS Modernization: GPS Modernization E-6B MAGR2K-M DT/OT	3	2023	3	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 1411 / Sub Tact Comm System			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1411: Sub Tact Comm System	26.722	13.259	14.274	17.043	-	17.043	14.680	14.867	15.085	15.391	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books. The details of S3S within project 1411 are classified.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Common Submarine Radio Room (CSRR)  Articles:  FY 2023 Plans: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.  FY 2024 Base Plans: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.								10.195	10.743	13.963	0.000	13.963
								-	-	-	-	-
Title: Link 16  Articles:  FY 2023 Plans: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.  FY 2024 Base Plans:								3.064	3.223	3.080	0.000	3.080
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 1411 / Sub Tact Comm System			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.											
Title: S3S							0.000	0.308	0.000	0.000	0.000
Articles:							-	-	-	-	-
Description: Detailed information available at a higher classification.											
FY 2023 Plans: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.											
FY 2024 Base Plans: N/A											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.											
Accomplishments/Planned Programs Subtotals							13.259	14.274	17.043	0.000	17.043
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/3130: Submarine Communication Equipment	64.642	74.569	82.378	-	82.378	81.531	81.629	82.258	83.905	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 1411 / Sub Tact Comm System

**D. Acquisition Strategy**

The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 1411 / Sub Tact Comm System					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	19.279	9.892	Dec 2021	9.844	Dec 2022	11.787	Dec 2023	-		11.787	Continuing	Continuing	Continuing
S3S Platform Integration	MIPR	Army/TSMO : Redstone Arsenal, AL	1.713	0.000		0.308	Mar 2023	0.000		-		0.000	0.000	2.021	-
Subtotal			20.992	9.892		10.152		11.787		-		11.787	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	3.587	2.147	Nov 2021	1.858	Nov 2022	3.017	Dec 2023	-		3.017	Continuing	Continuing	Continuing
Subtotal			3.587	2.147		1.858		3.017		-		3.017	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	TBD	Not Specified : Not Specified	0.319	0.230	Nov 2021	1.118	Nov 2022	1.197	Nov 2023	-		1.197	Continuing	Continuing	Continuing
Subtotal			0.319	0.230		1.118		1.197		-		1.197	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	TBD	Not Specified : Not Specified	1.824	0.990	Nov 2021	1.146	Nov 2022	1.042	Nov 2023	-		1.042	Continuing	Continuing	Continuing
Subtotal			1.824	0.990		1.146		1.042		-		1.042	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 1411 / Sub Tact Comm System				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	26.722	13.259		14.274		17.043		-		17.043	Continuing	Continuing	N/A

**Remarks**  
- The details of Program Element 0604280N, Project 1411 are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 1411 / Sub Tact Comm System									

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 1411.L39																												
Classified (Place Holder)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 1411 / Sub Tact Comm System

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1411.L39				
Classified (Place Holder)	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 2126 / ATDLS Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2126: ATDLS Integration	39.342	21.715	32.039	31.874	-	31.874	28.597	23.730	23.916	24.403	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs, specifically Link 16 Network, Command and Control Processor (C2P) and Link Monitoring and Management Tool (LMMT).

ATDLS Integration Program develops new and improved capabilities for Navy TDL users. The ATDLS Integration Programs perform technical analyses and engineering efforts associated with implementation of new technology to enable rapid introduction of new products and technology, prevent obsolescence, and end of support issues. The programs insert new technology enhancements via incremental software & hardware upgrades and deliver as annual build release. The Navy Link 16 Network Increment II requires Enhanced Throughput (ET), concurrent multi-netting (CMN), current contention receive (CCR), and tactical targeting networking technology (TTNT), and tech refresh with Block Upgrade 3 (BU3). C2P is a critical component of the shipboard combat system enabling tactical data link integration with the combat systems. C2P is a critical component of the Aegis Ballistic Missile Defense (BMD) architecture. C2P Technology Refresh (TR) will modernize obsolete C2P system hardware components and improve C2P system cyber security posture. C2P Modernization (MOD) is a service life extension effort required to sustain C2P system viability and significantly improve its cyber resiliency. C2P MOD modernizes the legacy C2P system software to enable improved cyber resiliency, improved system operational availability and the ability to run in multiple hardware environments. Link 22 development and integration into the C2P allows for improved maritime tactical data link operations with coalition forces. LMMT will upgrade commercial off-the-shelf hardware and modernize software operating systems. LMMT will perform monitoring and management of all TDL and provide information in support of the Integrated Air & Missile Defense (IAMD) and Ballistic Missile Defense (BMD) missions.

Link 16 Network Increment II: (1) Develop modern Joint Tactical Radio System (JTRS) terminals to meet critical mandates, with connectivity to shore sites, ship [Next Generation Command and Control Processor, (NGC2P)], and via Integrated Shipboard Network Systems (ISNS) for Tactical Targeting Networking Technology (TTNT) control, and current Navy Joint Tactical Information Distribution System (JTIDS) airborne platforms; (2) Developmental Testing (DT) / Operational Testing (OT) of Navy platform JTRS modifications and the integration of TTNT; (3) provide product improvement for continued production capability Multifunctional Information Distribution System (MIDS) on Ship (MOS) Modernization (MOS Mod) and extensibility to new Tactical Data Link capabilities of shipboard Link 16 terminals, (4) the development and qualification to replace shipboard Link 16 4400 antenna with the 4557 antenna. JTIDS, MOS, and MOS Mod efforts in support of Joint Chiefs of Staff Joint Requirements Oversight Council Memorandum (JROCM) 075-17 for installation and integration of MIDS J terminals. JROCM 097-20 direction for Crypto Modernization (CM), Frequency Remapping (FR), Enhanced Throughput (ET), concurrent multi-netting (CMN), current contention receive (CCR), and JROC validated MIDS JTRS CPD (DTG). All Link 16 terminals are required to have these capabilities to support Link 16 Interoperability.

FY2024 Justification (Link 16): Integration of the MIDS Program Office (MPO) developed A(v)6 (inclusive of the latest Link 16 baselined unit (BU3), TTNT Transceiver and external power amp) into the MOS and MOS-Mod shipboard cabinet assemblies.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 2126 / ATDLS Integration				
Command and Control Processor (C2P): The two Research Development Test & Evaluation (RDT&E) initiatives are 1) C2P Technology Refresh (TR) cyber security update and 2) C2P Modernization which now includes Link 22 integration. C2P TR cyber security update is a new initiative driven by recently discovered cyber security risk to the C2P system in support of the BMD mission. The C2P TR Cyber security update is planned to support acceleration on all AEGIS BMD ships. C2P Modernization funds the transition of the C2Ps legacy Compiler Monitor System (CMS-2Y) software code (old Navy unique computer programming language from the 1980s) to a modern software language. Transition to a modern software language is required to sustain the system software, to adequately address growing cybersecurity and operational availability challenges, and to enable more affordable transition to new hardware processing components as a result of commercial of the shelf processor obsolescence. Link 22, which was previously planned for fielding in the C2P TR architecture, has been delayed until the fielding of C2P Modernization. This was based on prioritizing existing resources to address the emergent cyber security risk that has resulted in the C2P TR cybersecurity update plan. Link 22 is a modernized replacement for Link 11, providing beyond line of site (BLOS) tactical data communications using high frequency (HF) radios.						
FY2024 Justification (C2P): Implementing the development initiatives above will improve C2P cybersecurity hygiene, provide more reliable hardware, and create a architecture that is more cost effective for future upgrades and corrections to latent defects.						
Link Monitoring and Management Tool (LMMT) is a system delivered on commercial off-the-shelf hardware (HW) providing gateway functions for multiple Tactical Data Link (TDL) interface, routing and display of TDL data to include Link 16, Joint Range Extension (JRE) and Link 22. LMMT is also capable of performing TDL network monitoring and management, data forwarding between the TDLs and providing tactical data to the Integrated Air & Missile Defense (IAMD), Ballistic Missile Defense (BMD) network, and Global Command and Control System (GCCS) for establishing the common operational picture. LMMT requirements will be incrementally developed and delivered in capability drops via the Joint Capabilities Integration Development System (JCIDS) IT Box approach.						
FY2024 Justification (LMMT): Development and testing required to implement TTNT and Link 16 Concurrent Multi-netting and Concurrent Contention Receive (CMN-4/CCR) into LMMT for Capability Drop (CD) 4 capabilities.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Link 16 Network Increment II - Cryptographic Modernization (CM) / Frequency Remapping (FR)		1.040	10.596	8.516	0.000	8.516
Articles:		-	-	-	-	-
FY 2023 Plans:						
Initiates MIDS Program Office (MPO) contract for qualification of MIDS Joint Tactical Radio System (JTRS) BU3 ((Concurrent Multi-Netting (CMN)) terminal with 1553 Platform M (Ship) interface.						
Evaluates options for higher throughput in the MIDS JTRS to C2P interface.						
Continues Government Integration efforts of A(v)6 (BU3, TTNT, TEPA) into the Link 16 MOS SCAs.						
Continues Government development of TTNT Terminal Controller SW coding within C2P.						
Continues Government Integration efforts of A(v)6 (BU3, TTNT, TEPA) into the Link 16 MOS Mod ECA.						
FY 2024 Base Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 2126 / ATDLS Integration				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Will complete MPO contract for qualification of MIDS J BU3 (CMN) terminal with 1553 Platform M (Ship) interface. Will continue the MOS SCA and MOS Modernization (MOS Mod) External Cabinet Assembly (ECA) hardware integration with A(v)6. Will continue MOS and MOS Mod terminal controller updates to support integration of MIDS J BU3/TTNT Terminal Controller. LINK 16 will conduct government integration testing of MIDS JTRS, BU3, and TTNT Terminal Controller by C2P and will commence at Sea testing of A(v)6 capability in the shipboard environment. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> \$2.08M decrease from FY23 to FY24 is due to the Link 16 Program anticipating down-select to a single vendor performing A(v)6 integration into a MOS Mod cabinet.							
<b>Title:</b> Command and Control Processor (C2P)  <b>Articles:</b>  <b>FY 2023 Plans:</b> Continues C2P Modernization Development, Integration and Systems Engineering. Completes SW Release A IV&V and releases and completes C2P Mod SW Drop B.  <b>FY 2024 Base Plans:</b> Will Continue C2P Mod development, integration and engineering activity. C2P will initiate and complete C2P Mod Capability Build (CB 3) SW Drop and will commence the C2P Pre-Planned Product Improvement Program (P3I) to incorporate additional capability to the C2P Mod SW baseline.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The \$2.027M increase in funding from FY23 to FY24 reflects the commencement of the C2P Pre-Planned Product Improvement Program (P3I) to incorporate additional capability to the C2P Mod SW baseline.			18.895 -	19.331 -	21.358 -	0.000 -	21.358 -
<b>Title:</b> Link Monitoring and Management Tool (LMMT)  <b>Articles:</b>  <b>FY 2023 Plans:</b>			1.780 -	2.112 -	2.000 -	0.000 -	2.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy								Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)			Project (Number/Name) 2126 / ATDLS Integration				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Consolidates previous capability drops to create a single CD3 version, perform all required testing, and prepare all CD3 engineering and acquisition documents in preparation for Fielding Technical Review (FTR) (Q2 FY23) and Fielding Technical Decision (FDR) (Q3 FY23).											
FY 2024 Base Plans: Development and testing required to implement TTNT and Link 16 Concurrent Multi-netting and Concurrent Contention Receive (CMN-4/CCR) into LMMT for CD4 capabilities.											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: \$0.112M decrease to LMMT from FY23 to FY24 as the program completes CD3 development and begins development of CD4.											
Accomplishments/Planned Programs Subtotals							21.715	32.039	31.874	0.000	31.874
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/2614: Adv Tact Data Link Sys (ATDLS)	100.888	73.675	50.148	-	50.148	70.171	71.108	66.814	74.316	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
To address the WIN 11 implementation for the MOS and MOS Mod system, a new MOS Terminal Controller hardware and software is being developed, as required. MOS and MOS Mod integrates the MIDS JTRS terminal developed by the MIDS Program Office PMA-101. The MIDS JTRS BU2 terminal is being updated to BU3. In conjunction with the BU3 development, the TTNT capability is also under development and will field with the BU3 and associated Tactical Targeting Networking Technology External Power Amplifier (TEPA) [designated as A(v)6] for shipboard application. The Link 16 program will perform environmental qualification testing (EQT), to include electro-magnetic interference/compatibility (EMI/EMC) in the MOS and MOS Mod cabinets. The program is letting a contract integrating the A(v)6 into a MOS Mod cabinet, to include host-interface updates and integration efforts for shipboard application. The program office is using an organic government organization to integrate the A(v)6 into the MOS cabinet.											



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 2126 / ATDLS Integration
<p>The C2P Technology Refresh (TR) configuration will be replaced by C2P Modernization (MOD). C2P Mod will leverage existing commercial-off-the-shelf (COTS) hardware and be a complete modernization of the C2P software architecture significantly improving system cybersecurity. C2P Mod capabilities are implemented in software and will be developed in capability drops (CDs). C2P Mod development and support will be managed by Naval Information Warfare Center Pacific (NIWC PAC).</p> <p>The Link Monitoring and Management Tool (LMMT) capability will replace previously-fielded Air Defense Systems Integrator (ADSI) systems. LMMT will leverage existing government-off-the-shelf (GOTS) software and commercial-off-the-shelf (COTS) hardware. LMMT capabilities are implemented primarily in software and will be developed in Capability Drops (CDs). Existing GOTS software will be updated to incorporate network performance monitoring and management capabilities by Naval Information Warfare Center Pacific (NIWC PAC).</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 2126 / ATDLS Integration					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Link 16 Network Technical Design Agents	C/CPFF	SeaPort- Various : San Diego, CA	0.784	0.000		0.525	Apr 2023	1.650	Oct 2023	-		1.650	Continuing	Continuing	Continuing
Link 16 Network Systems Engineering	WR	NIWC PAC : San Diego, CA	1.039	1.040	Apr 2022	2.133	Nov 2022	2.750	Nov 2023	-		2.750	Continuing	Continuing	Continuing
Link 16 Network MIDS J Development and Qualification; TTNT GFE & Software	WR	PMA 101 : San Diego, CA	1.000	0.000		2.000	Jan 2023	0.000		-		0.000	0.000	3.000	-
Link 16 Network JTIDS Development and Qualification	C/CPIF	DLS (BAE/Collins) : Wayne, NJ	0.383	0.000		0.000		0.000		-		0.000	0.000	0.383	-
Link 16 Network ECA/ Shipboard Cabinet Development and Qualification	C/CPFF	TBD : TBD	0.000	0.000		2.898	Apr 2023	2.616	Apr 2024	-		2.616	Continuing	Continuing	Continuing
C2P Systems Engineering	WR	NIWC PAC : San Diego, CA	7.178	2.322	Oct 2021	2.970	Oct 2022	3.286	Oct 2023	-		3.286	Continuing	Continuing	Continuing
C2P IV&V	WR	NIWC PAC : San Diego, CA	0.485	0.451	Oct 2021	0.613	Oct 2022	1.950	Oct 2023	-		1.950	Continuing	Continuing	Continuing
C2P Development & Integration	WR	NIWC PAC : San Diego, CA	17.707	14.550	Oct 2021	14.146	Oct 2022	14.146	Oct 2023	-		14.146	Continuing	Continuing	Continuing
LMMT Development	WR	NIWC PAC : San Diego, CA	1.351	0.350	Oct 2021	0.450	Oct 2022	0.600	Oct 2023	-		0.600	Continuing	Continuing	Continuing
LMMT Systems Engineering	WR	NIWC PAC : San Diego, CA	1.120	0.496	Oct 2021	0.550	Oct 2022	0.450	Oct 2023	-		0.450	Continuing	Continuing	Continuing
LMMT IV&V	WR	NIWC PAC : San Diego, CA	0.718	0.257	Oct 2021	0.352	Oct 2022	0.600	Oct 2023	-		0.600	Continuing	Continuing	Continuing
Subtotal			31.765	19.466		26.637		28.048		-		28.048	Continuing	Continuing	N/A
Remarks															
The FY24 increase of \$1.411M in Product Development efforts is the result of a \$1.653M increase in C2P for Pre-Planned Product Improvement Program (P3I) to incorporate additional capability to the C2P Mod SW baseline; a \$0.540M decrease due to planned FY24 completion of Link 16 Network Multifunctional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS) Development and Qualification and MIDS On Ship (MOS) Shipboard Cabinet Assembly (SCA) and MOS Modernization (Mod)															

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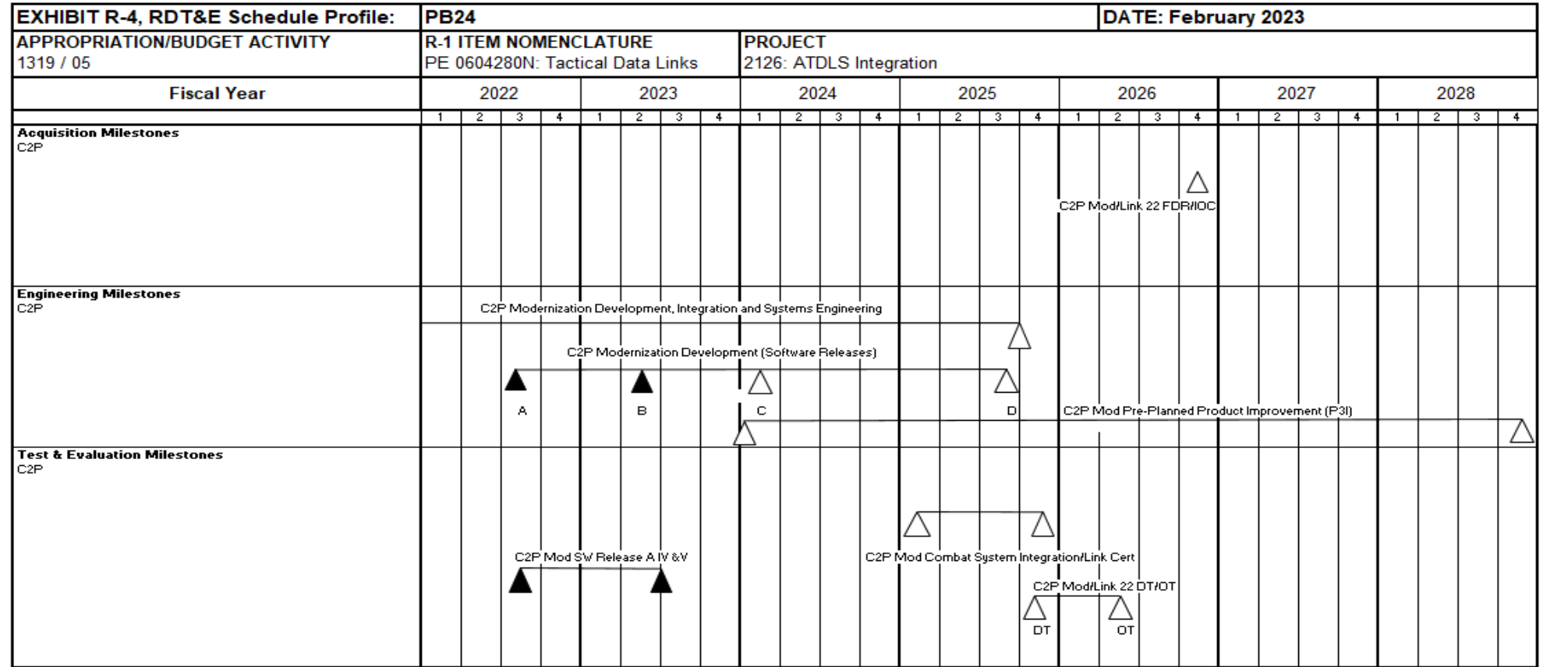
Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 2126 / ATDLS Integration					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
External Cabinet Assembly (ECA) hardware integration with MIDS J BU3/TTNT terminal to include TTNT external power amplifier; and a \$0.298M increase in LMMT as the program begins development and IV&V of Capability Drop (CD4) in FY24.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NIWC PAC : San Diego, CA	3.443	0.100	Oct 2021	3.040	Jan 2023	2.076	Oct 2023	-		2.076	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	OPTEV 4 : Norfolk, VA	0.125	0.157	Oct 2021	0.250	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			3.568	0.257		3.290		2.076		-		2.076	Continuing	Continuing	N/A
Remarks															
The FY24 decrease of \$1.214M in Test and Evaluation efforts is comprised of: The decrease of \$0.964M in Development Test and Evaluation (DT&E) initiatives that resulted from a \$1.540M decrease in Link 16, as vendor qualification and government integration testing of the Multifunctional Information Distribution System Joint Tactical Radio System (MIDS JTRS (MIDS J)) Block Upgrade 3 (BU3) terminal with shipboard 1553 interface into MIDS On Ship (MOS) Shipboard Cabinet Assembly (SCA) and MOS Mod External Cabinet Assembly (ECA) completes in FY24; a \$0.326 increase in C2P, as the planning initiates for the FY25 DT&E event and that funds C2P Mod cybersecurity testing to detect any technical vulnerabilities that may affect functional mission execution and operational resilience; and a \$0.250M increase in LMMT as the system begins conducting development testing for CD4. The \$0.250M decrease of Operation Test & Evaluation (OT&E) efforts is the result the completion of CD3 rollout.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Link 16 Network Program Management Support	C/CPFF	SeaPort- Various : San Diego, CA	0.139	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
C2P Program Management Support	C/CPFF	SeaPort- Various : San Diego, CA	1.491	0.786	Oct 2021	0.801	Oct 2022	0.825	Oct 2023	-		0.825	Continuing	Continuing	Continuing
C2P Systems Engineering Support	C/CPFF	SeaPort- Various : San Diego, CA	1.491	0.786	Oct 2021	0.801	Oct 2022	0.825	Oct 2023	-		0.825	Continuing	Continuing	Continuing
LMMT Program Management	C/CPFF	SeaPort- Various : San Diego, CA	0.888	0.420	Oct 2021	0.510	Oct 2022	0.100	Oct 2023	-		0.100	0.000	1.918	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)						Project (Number/Name) 2126 / ATDLS Integration			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			4.009	1.992		2.112		1.750		-		1.750	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			39.342	21.715		32.039		31.874		-		31.874	Continuing	Continuing	N/A
Remarks															
The FY24 decrease of \$0.165M in R-3 Total Area is the result of a \$2.027M total increase in Product Development, Test and Evaluation, Management Services efforts for C2P; a \$2.080M total decrease in Product Development and Test and Evaluation efforts for Link 16; and a \$0.112M decrease in Product Development, Test and Evaluation efforts and Management Services efforts for LMMT.															



Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 2126 / ATDLS Integration	



Legend:

C2P - Command and Control Processor  
DT - Developmental Test  
FDR - Fielding Decision Review  
IOC - Initial Operating Capability

IV&V - Independent Verificaiton and Validation  
OT - Operational Test  
P3I - Pre-Planned Product Improvement

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 05

R-1 Program Element (Number/Name)  
PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

Project (Number/Name)  
2126 / ATDLS Integration

EXHIBIT R-4, RDT&E Schedule Profile:		PB24																DATE: February 2023											
APPROPRIATION/BUDGET ACTIVITY 1319 / 05		R-1 ITEM NOMENCLATURE PE 0604280N: Tactical Data Links								PROJECT 2126: ATDLS Integration																			
Fiscal Year		2022				2023				2024				2025				2026				2027				2028			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones LMMT					▲ CD3 OTRR			△ CD3 ACT	△ CD3 FDR							△ CD4 OTRR				△ CD4 ACT	△ CD4 FDR								
Engineering Milestones LMMT								△ CD3 FTR			△ CD4 IV&V									△ CD4 FTR									
					▲ CD3 Production Release													△ CD4 Production Release											
Test & Evaluation Milestones LMMT			▲ CD3 DT		▲ CD3 OT							△ CD4 DT				△ CD4 OT													

## Legend:

ACT - Acquisition Coordination Team  
CD - Capability Drop  
DT - Developmental Test

FDR - Fielding Decision Review  
FTR - Fielding Technical Review  
OT - Operational Test  
OTRR - Operational Test Readiness Review

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

2126 / ATDLS Integration

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2126</b>				
Link 16 MIDS J BU3 Qual	3	2022	4	2023
Link 16 MOS A(v)6 Dev & Qual	1	2023	4	2024
Link 16 MOS Mod A(v)6 Dev & Qual	3	2023	3	2025
Link 16 MIDS J BU3 Integration Testing	2	2024	4	2024
Link 16 MOS A(v)6 Integration Testing	1	2025	3	2025
Link 16 MOS Mod A(v)6 Integration Testing	1	2025	3	2025
Link 16 A(v)6 DT	2	2025	4	2025
Link 16 A(v)6 FDR	1	2026	1	2026
Link 16 A(v)6 IOC	3	2026	3	2026
C2P Modernization Development, Integration and Systems Engineering	1	2022	3	2025
C2P Mod SW Release A IV&V	3	2022	2	2023
C2P Mod Software Release A	3	2022	3	2022
C2P Mod Software Release B	2	2023	2	2023
C2P Mod Software Release C	1	2024	1	2024
C2P Mod Software Release D	3	2025	3	2025
C2P Mod Combat Systems integration/Link 22 certification	1	2025	4	2025
C2P Mod/Link 22 DT/OT	4	2025	2	2026
C2P Mod/Link 22 FDR/IOC	4	2026	4	2026
C2P Mod P3I	1	2024	4	2028
LMMT CD3 DT	2	2022	2	2022
LMMT CD3 OTRR	4	2022	4	2022



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 2126 / ATDLS Integration
		Start		End
Events by Sub Project		Quarter	Year	Quarter Year
LMMT CD3 OT		4	2022	4 2022
LMMT CD3 Production Release		1	2023	1 2023
LMMT CD3 FTR		3	2023	3 2023
LMMT CD3 ACT		3	2023	3 2023
LMMT CD3 FDR		4	2023	4 2023
LMMT CD4 BD		4	2023	4 2023
LMMT CD4 IV&V		2	2024	2 2024
LMMT CD4 DT		4	2024	4 2024
LMMT CD4 OTRR		2	2025	2 2025
LMMT CD4 OT		3	2025	3 2025
LMMT CD4 Production Release		1	2026	1 2026
LMMT CD4 FTR		3	2026	3 2026
LMMT CD4 ACT		3	2026	3 2026
LMMT CD4 FDR		4	2026	4 2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 3020 / MIDS/JTRS			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3020: MIDS/JTRS	118.527	63.855	82.429	149.068	-	149.068	159.977	139.780	92.775	60.416	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 554												
A. Mission Description and Budget Item Justification												
<p>The Multifunctional Information Distribution System (MIDS) program office is the Performing Activity in the Navy (Lead Service for Department of Defense (DOD)) Link 16 capability and consists of two (2) product lines, MIDS Low Volume Terminal (LVT) (legacy hardware defined radio) and MIDS Joint Tactical Radio System (JTRS) (software (SW) defined radio). MIDS-LVT effort is a cooperative development program between France, Germany, Italy, Spain, and the United States with United States joint service participation (Navy, Army, Air Force), and has provided over 11,000 terminals to 48 Nations providing interoperability with North Atlantic Treaty Organization (NATO) and coalition partners. The Department of Defense (DoD) established the program to design, develop, and deliver low volume, lightweight tactical information system terminals for U.S. and allied fighter aircraft, bombers, helicopters, ships, and ground sites. MIDS-LVT significantly increases force effectiveness and minimizes hostile actions and friend-on-friend engagements. MIDS-LVT Block Upgrade 2 was executed as an ECP and provides the critical upgrades to the MIDS-LVT Terminal to enable U.S., Coalition and International partners' ability to meet the National Security Agency (NSA) mandated timelines for Cryptographic Modernization (CM) and the National Telecommunications and Information Agency (NTIA) and Federal Aviation Agency (FAA) mandated timelines for Frequency Remapping (FR).</p>												
<p>MIDS JTRS, designed as a Pre-Planned Product Improvement (P3I) and executed as an Engineering Change Proposal (ECP) to the production MIDS-LVT configuration, and is fully compatible with MIDS-LVT. The MIDS JTRS Core Terminal achieved Full Production &amp; Fielding (FP&amp;F) in March 2012. It facilitated the JTRS incremental approach for fielding advanced JTRS transformational networking capability and transformed the MIDS-LVT into a 4-channel, SW Communications Architecture (SCA) compliant, Joint Tactical Radio. A form-fit-function replacement to MIDS-LVT, MIDS JTRS also adds three programmable 2 Megahertz (MHz) to 2 Gigahertz (GHz) channels capable of hosting the JTRS legacy and networking waveforms. In addition to Link 16, Tactical Air Navigation (TACAN), and voice functionality found in MIDS-LVT, MIDS JTRS has four channels and adds capabilities such as Link 16 Enhanced Throughput (ET), Link 16 FR, SW programmability, CM, and Four Net Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4).</p>												
<p>MIDS JTRS Tactical Targeting Network Technology (TTNT), is a block upgrade to the MIDS JTRS CMN-4 Terminal providing an Internet Protocol-based networking capability on tactical aircraft. TTNT is a low latency, high throughput waveform that has the capability to support data exchange between fast-moving tactical aircraft, weapons, and unmanned aircraft, in addition to air, land, and sea-based command and control nodes, in a variety of air-to-air and air-to-ground missions including time sensitive targeting, air warfare, close air support, non-traditional ISR, and anti-surface warfare. TTNT and MIDS JTRS CMN-4 directly supports Naval Integrated Fire Control (NIFC) capability requirements. These capabilities provide Joint Airborne Network-Tactical Edge functionality to run advanced mission applications in a cross-platform/cross-domain tactical network enterprise.</p>												
<p>Currently when updated software or any bug fixes are available, the warfighter must return the terminal to the vendor and pay for the labor to install the latest software push. With the new Field Loadable capability, the vendors will update the terminal's software to allow the warfighter to use the front panel of the terminal to load the</p>												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 3020 / MIDS/JTRS		
latest software build in the field. The Field Loadable capability entails updating and rewriting the specifications documents for the front panel, new software to enable users in the field to push updates and retrofitting government furnished equipment for use in the new testing environments.						
The FY 2024 Budget completes the first software release (Block Cycle 1) for the MIDS Modernization Software and Firmware development and awards the next software release (Block Cycle 2). It completes the MIDS JTRS enhancements and begins lab and flight testing for the efforts in developmental and operational testing environments. The FY 2024 budget also supports the lead service core waveform development requirements for developing a reference implementation platform for prototyping and conducting frequency testing for the Link 16 and TTNT waveforms.						
The FY 2024 Budget continues to fund critical warfighter improvements to the TTNT Terminal Software and Waveform in order to out pace the threat. The TTNT J-series messages Over IP Networks (JOIN) effort enters into testing. It completes the development of the TTNT Consolidated Automated Support System (CASS) Test Program Sets (TPS). New TTNT enhancements development continues in FY2024 adding classified capabilities to the terminal.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: MIDS		63.855	82.429	149.068	0.000	149.068
Articles:		-	-	-	-	-
FY 2023 Plans:						
Continue MIDS Modernization Software/Firmware (SW/FW) development for the MIDS JTRS terminal enhancements. Industry will finalize the specification requirements, hold technical reviews with the Government, continue SW/FW development, prepare for system I&T and conduct dry run testing. Modify the contract to incorporate the MIDS JTRS TTNT J-series messages Over IP Networks (JOIN) and Dynamic Link Exchange Protocol (DLEP) technologies into the new Block Cycle 1 software release. Continue Electromagnetic Compatibility (EMC) Features testing on previous MIDS JTRS software releases and the newly developed Link 16 modernized hardware.						
Begin MIDS JTRS CMN-4 enhancements by investigating options for machine to machine interface (MMI) software download capability and user authentication to comply with terminal security requirements. Identify any impacts to the Functional and Allocated baselines. Develop and test a prototype MMI SW download capability. Begin MMI software download development and qualification for multiple terminal configurations. Test new crypto capabilities with the new software development.						
Continue the development/build of MIDS test equipment for a new government depot/test lab and the support for the depot/lab. Test and accept a new Test Bench for the new depot. Create test procedures for the newly developed Test Bench for depot.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 3020 / MIDS/JTRS		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue TTNT waveform changes and capability gap improvements with new Integrated Builds (IB) of Software drops to include IP applications and J-series messages Over IP Networks (JOIN) to provide enhanced networking capability. Industry will review performance metrics and impacts to the software and firmware while meeting the Cross Domain system requirements in order to implement JOIN. Industry will develop a method to filter message types and ensure they can be sent over both waveforms. Perform JOIN tests internal to the MIDS JTRS TTNT Terminal and test a TTNT Ethernet Channel method. Document the two methods' success rates, loads on the systems, waveform and power amplifier. Update software and firmware to incorporate JOIN into the MIDS JTRS TTNT terminal and release prototype on the current MIDS JTRS TTNT terminal. Begin merging/ incorporating JOIN with MIDS Modernization, the new Link 16 hardware and front panel loading capability for MIDS JTRS TTNT via Block Cycle 1 contract modification.						
Develop software enhancements to allow MIDS JTRS TTNT to use the Dynamic Link Exchange Protocol (DLEP). Industry will update software and firmware in order for TTNT to make routing decisions and share information externally to enable Coms as a service. Conduct Dry Run testing on the DLEP capability.						
Continue to integrate into the MIDS JTRS TTNT terminal different solutions from Federally Funded Research and Development Centers and Small Business that provide capability and improvements to terminal performance. Begin the risk reduction for the design and development for Mission Optimized Waveform (MOW) software, firmware and waveform updates in MIDS JTRS TTNT. This includes writing the spec development; these capabilities are classified. Continue to correct and implement JTRS problem reports (JPR) fixes into the terminals that come out of Operational Testing from the platforms.						
Continue the TTNT System of Systems (SoS) Modeling, Simulation, and Analysis (MS&A) effort by incorporating platform simulators, applications, and networks modeling to optimize the TTNT networks for increased warfighter capacity and capability. Use Modeling and Simulation to test the JOIN, DLEP and MOW. Continue the Consolidated Automated Support System (CASS) Test Program Sets (TPS) efforts for the MIDS JTRS TTNT terminal. Complete design and testing of the CASS TPS; build and test the three prototypes for qualification testing.						
Continue to support demonstrations, testing and exercises utilizing TTNT terminals and networks including Northern Edge 23 (NE23), Naval Tactical Grid enablers 2023 (NTGe-23), to ensure TTNT is interoperable with the fleet and performance is met						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 3020 / MIDS/JTRS		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue leading the Tactical Data Dissemination initiative (TDDi) project and coordinate targeted waveform specification updates, develop reference implementation capabilities, and initiate governance and Community of Interest (COI) coordination efforts.						
Continue the development of the TTNT FIT to support platform integration and testing efforts at various lead platform (EA-18G, F/A-18E/F, E-2D) facilities and DT/OT test squadrons.						
Continue MIDS systems engineering, communication security, IA and program management support.						
Continue Core Waveform, Link 16 Lead Service work in accordance with OSD memorandum dated 29MAR19. Work encompasses all eleven duties as laid out in the memorandum including System of Systems Analysis of Link 16 networks, waveform Mission Threads/Kill Chains and associated Information Exchange Requirements (IERS) to guide Joint fielding and terminal development recommendations with associated prioritizations. Develop basic digital model to guide Link 16 development strategies. Develop a Link 16 reference implementation platform for prototyping and to conduct frequency testing and testing other changes in standards and/or mandated updates. Continue with Link 16 development fixes and updates.						
FY 2024 Base Plans:						
Complete Block Cycle 1 (Software Release 1) formal contractor qualification testing. Conduct Government testing, and begin EMC Features testing on BC1 for transition of the software into production and provide software to fielded terminals for front panel upload. Fix any discrepancies found in EMC Features testing to ensure the transition and EMC approval. Begin requirements development and fixes to be included in Block Cycle 2 Link 16 requirements.						
Continue MIDS JTRS CMN-4 enhancements machine to machine interface (MMI) software download capability and user authentication to comply with terminal security requirements. Take machine to machine prototypes and interface studies and select to the most viable solution. Begin waveform updates for the machine to machine interface. Test new crypto capabilities with the new software development.						
Continue TTNT waveform changes and capability gap improvements with new Integrated Builds (IB) of Software drops. Begin testing JOIN and DLEP capability with MIDS Modernization hardware and front panel loading capability in the Block Cycle 1 release. Begin CFAQT, GFAQT and EMC Features testing of the new JOIN capabilities into MIDS JTRS TTNT and address any problem reports before testing is complete. Conduct						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 3020 / MIDS/JTRS		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
CFAQT, GFAQT and EMC Features testing of the new DLEP capabilities into MIDS JTRS TTNT and begin integration for fleet release and test. Investigate and fix any problem reports that come out of testing the new capability.						
Award contract for Advanced Tactical Datalinks (ATDL) Waveform development. Industry will take the current waveform and variants and modify for MIDS JTRS TTNT hardware in accordance with the government spec developed previously in risk reduction. Draft new Functional Baseline (FBL), Allocated Baseline (ABL) and design document requirements for the waveform to be in MIDS JTRS TTNT. Develop the initial architecture and conduct System Functional Review (SFR) and System Requirement Review (SRR) to determine the design stability. Investigate a software solution for switching from waveform to waveform in the MIDS JTRS TTNT terminals. Ensure ATDL Waveform is enabled for MIDS JTRS TTNT terminals but also current waveform users for increased interoperability.						
Continue the TTNT System of Systems (SoS) Modeling, Simulation, and Analysis (MS&A) effort by incorporating new TTNT platform simulators, applications, and networks modeling to optimize the TTNT networks for increased warfighter capacity and capability. Use modeling and simulation scenarios for MOW and ATDL waveform capabilities.						
Complete the Consolidated Automated Support System (CASS) Test Program Sets (TPS) prototype test and regression test for fleet release.						
Continue to Support multiple testing, demonstrations and exercises utilizing TTNT terminals and networks focused on the integration of TTNT terminals into newer, non-Lead Platform programs, including MQ-25, Surface Ships, and various Joint airborne platforms.						
Continue leading the Tactical Data Dissemination initiative (TDDi) project and coordinate targeted waveform specification updates, develop reference implementation capabilities, and initiate governance and Community of Interest (COI) coordination efforts.						
Continue the development of the TTNT FIT to support new platform integration and testing efforts at various platform integration sites, laboratory, and T&E facilities.						
Continue MIDS systems engineering, communication security, IA and program management support.						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		<b>Project (Number/Name)</b> 3020 / MIDS/JTRS	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Develop and establish Department of Defense (DoD) Tactical Aircraft Reference Implementation Laboratory (TACAIR RIL). The TACAIR RIL will develop a pre-vetted library of Services, Waveform Applications (WFAs) and Non-waveform Applications to enable accelerated delivery of capabilities to the warfighter.</p> <p>Continue Core Waveform, Link 16 Lead Service work in accordance with OSD memorandum dated 29MAR19. Continue System of Systems Analysis of Link 16 networks, waveform Mission Threads/Kill Chains and associated Information Exchange Requirements (IERS) to guide Joint fielding and terminal development recommendations with associated prioritizations. Continue to update the basic digital model to guide Link 16 development strategies. Use the Link 16 reference implementation platform for prototyping and conducting frequency testing and other changes in standards and/or mandated updates. Continue with Link 16 development fixes and updates.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> MIDS RDTE overall increase of \$66.6M is due to the funding of the development of ATDL waveform and DoD TACAIR Reference Implementation Laboratory.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>		63.855	82.429	149.068	0.000
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b> Multifunctional Information Distribution System Joint Tactical System (MIDS JTRS) development was initiated as a major modification to the MIDS-LVT using an Engineering Change Proposal to the existing production contracts. The U.S. prime contractors from the MIDS-LVT program, Data Link Solutions (DLS) and Viasat Inc., cooperatively designed and developed each of the MIDS JTRS terminal variants and Block Upgrade 2 for MIDS-LVT. The U.S. implemented a continuous competition strategy between DLS and ViaSat that will be maintained throughout the MIDS-LVT and MIDS JTRS production phases. This strategy has been successfully used on all MIDS variants.					

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

3020 / MIDS/JTRS

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years	Various	Various : Various	55.985	0.000		0.000		0.000		-		0.000	0.000	55.985	55.986
Link 16 Waveform Development	WR	NIWC PAC : San Diego, CA	0.823	0.345	Dec 2021	0.345	Jan 2023	0.345	Jan 2024	-		0.345	Continuing	Continuing	Continuing
TTNT Waveform/SW Updates	C/CPFF	DLS : Cedar Rapids, IA	2.605	3.766	Oct 2021	5.759	Oct 2022	6.048	Dec 2023	-		6.048	Continuing	Continuing	Continuing
TTNT Waveform/SW Updates	C/CPFF	ViaSat : San Diego, CA	1.268	1.049	Jan 2022	4.102	Nov 2022	4.307	Dec 2023	-		4.307	Continuing	Continuing	Continuing
TTNT Post Dev Test/ Problem Report Fixes	C/CPFF	DLS : Cedar Rapids, IA	0.900	3.250	Oct 2021	4.328	Oct 2022	4.544	Jan 2024	-		4.544	Continuing	Continuing	Continuing
TTNT Post Dev Test/ Problem Report Fixes	C/CPFF	Viasat : San Diego, CA	1.685	0.713	Nov 2021	3.000	Nov 2022	3.150	Jan 2024	-		3.150	Continuing	Continuing	Continuing
MIDS JTRS L16 HW Upgrade	C/CPFF	Viasat : San Diego, CA	18.468	6.506	Oct 2021	0.000		0.000		-		0.000	0.000	24.974	24.974
MIDS EMC Features Updates and Testing	C/CPFF	Viasat : San Diego, CA	1.737	4.615	Mar 2022	3.544	Nov 2022	4.430	Feb 2024	-		4.430	Continuing	Continuing	Continuing
MIDS EMC Features Updates and Testing	C/CPFF	DLS : Cedar Rapids, IA	0.621	2.948	Nov 2021	1.500	Mar 2023	2.625	Feb 2024	-		2.625	Continuing	Continuing	Continuing
MIDS Mod SW/FW Full Development	C/CPFF	DLS : Cedar Rapids, IA	0.960	8.162	Oct 2021	8.780	Dec 2022	11.889	Jan 2024	-		11.889	0.000	29.791	29.791
MIDS Mod SW/FW Full Development	C/CPFF	Viasat : San Diego, CA	0.224	3.107	Dec 2021	8.380	Dec 2022	7.927	Jan 2024	-		7.927	0.000	19.638	19.639
Field Loadable Capability Dev	C/CPFF	DLS : Cedar Rapids, IA	6.181	1.178	Nov 2021	0.000		0.000		-		0.000	0.000	7.359	7.359
Field Loadable Capability Dev	C/CPFF	Viasat : San Diego, CA	2.804	0.199	Nov 2021	0.000		0.000		-		0.000	0.000	3.003	3.003
Modernize Special Test Equipment WIN10	C/CPFF	DLS : Cedar Rapids, IA	3.685	0.653	Jun 2022	0.904	Mar 2023	0.000		-		0.000	0.000	5.242	5.242
Test Equipment for Depot/ lab	C/FFP	DLS : Cedar Rapids, IA	3.252	4.175	Dec 2021	2.536	Jun 2023	0.000		-		0.000	0.000	9.963	9.963
Test Equipment for Depot/ lab	C/FFP	ViaSat : San Diego, CA	1.858	3.167	Dec 2021	1.375	Jun 2023	0.000		-		0.000	0.000	6.400	6.400



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 3020 / MIDS/JTRS					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TTNT Advanced Techniques	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.000		5.441	Oct 2022	13.114	Nov 2023	-		13.114	Continuing	Continuing	Continuing
TTNT Advanced Techniques	C/CPFF	ViaSat : San Diego, CA	0.000	0.000		2.523	Apr 2023	9.741	Nov 2023	-		9.741	Continuing	Continuing	Continuing
TTNT Enhancements/Tech 1	C/CPFF	MIT LL : Hanscom, MA	0.000	0.719	Dec 2021	1.000	Nov 2022	1.968	Dec 2023	-		1.968	Continuing	Continuing	Continuing
MIDS JTRS CMN-4 Software Enhancements	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.532	Apr 2022	4.275	Oct 2022	5.880	Apr 2024	-		5.880	Continuing	Continuing	Continuing
MIDS JTRS CMN-4 Software Enhancements	C/CPFF	ViaSat : San Diego, CA	0.000	0.000		4.039	Oct 2022	3.920	Apr 2024	-		3.920	Continuing	Continuing	Continuing
MIDS Mod Enhancements	C/CPFF	BAE : Wayne, NJ	0.000	3.750	Apr 2022	0.500	Dec 2022	0.000		-		0.000	0.000	4.250	4.250
TTNT Advanced Development/ Enhancements	C/CPFF	MITRE : McLean, VA	0.000	0.000		1.587	Nov 2022	1.587	Jan 2024	-		1.587	0.000	3.174	3.174
SBIR Transition	C/CPFF	ADI : New York, NY	0.000	0.050	Feb 2023	0.050	Jun 2023	0.050	Mar 2024	-		0.050	0.000	0.150	0.150
ATDL Waveform Development	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.000		0.000		20.000	Jan 2024	-		20.000	Continuing	Continuing	Continuing
ATDL Waveform Development	C/CPFF	L3Harris : San Diego, Ca	0.000	0.000		0.000		17.219	Jan 2024	-		17.219	Continuing	Continuing	Continuing
TACAIR RIL	WR	NIWC PAC : San Diego, CA	0.000	0.000		0.000		6.100	Jan 2024	-		6.100	0.000	6.100	-
Subtotal			103.056	48.884		63.968		124.844		-		124.844	Continuing	Continuing	N/A
Remarks TTNT Advanced Techniques development increase in FY24 with DLEP and JOIN in test and Vital Smoke full development on-going with TRR events and modeling and simulation scenarios.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years	Various	Various : Various	2.116	0.000		0.000		0.000		-		0.000	0.000	2.116	2.116

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

3020 / MIDS/JTRS

## Support (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CSS TPS/Depot Support	WR	NAVAIR : North Island San Diego, CA	0.640	0.000		2.200	Nov 2022	1.563	Jan 2024	-		1.563	0.000	4.403	4.403
Modeling and Sim Suppt TTNT	WR	NAVAIR : China Lake, CA	1.021	0.150	Apr 2022	0.660	Dec 2022	0.825	Dec 2023	-		0.825	Continuing	Continuing	Continuing
CORE Waveform Support	WR	NIWC PAC : San Diego, CA	0.000	4.248	Oct 2021	4.591	Oct 2022	5.343	Oct 2023	-		5.343	Continuing	Continuing	Continuing
I-Level Support Equipment	C/CPFF	Viasat : San Diego, CA	1.619	1.152	Oct 2021	0.486	Mar 2023	0.000		-		0.000	0.000	3.257	3.257
NSA Certification Support	MIPR	NSA : Fort Meade, MD	0.030	0.100	Apr 2022	0.200	Apr 2023	0.350	Jan 2024	-		0.350	Continuing	Continuing	Continuing
MIDS Modernization/ Mission Network Support	WR	NAVAIR : China Lake, CA	0.081	1.723	Oct 2021	0.500	Nov 2022	0.500	Nov 2023	-		0.500	Continuing	Continuing	Continuing
NRL Support	WR	NRL : Washington DC	0.000	0.150	Feb 2022	0.000		0.000		-		0.000	0.000	0.150	0.150
IA Cert SUpport	WR	NIWC LANT : Charleston, SC	0.000	0.114	Feb 2023	0.123	Mar 2023	0.250	Jan 2024	-		0.250	Continuing	Continuing	Continuing
MIT LL Modeling and Sm	C/CPFF	MIT LL : Hanscom, AFB	1.500	0.000		0.605	Nov 2022	0.700	Dec 2023	-		0.700	0.000	2.805	2.805
<b>Subtotal</b>			7.007	7.637		9.365		9.531		-		9.531	Continuing	Continuing	N/A

## Test and Evaluation (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NIWC PAC : San Diego, CA	2.361	3.586	Nov 2021	5.202	Nov 2022	10.350	Nov 2023	-		10.350	0.000	21.499	21.499
Developmental Test & Evaluation (DT&E)	WR	COMOPTEVFOR : Norfolk, VA	0.185	0.008	May 2022	0.055	Apr 2023	0.200	Dec 2023	-		0.200	0.000	0.448	0.448
<b>Subtotal</b>			2.546	3.594		5.257		10.550		-		10.550	0.000	21.947	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 3020 / MIDS/JTRS					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Remarks</b> Government lab and flight testing (DT and OT) for MIDS Modernization (JTRS hardware enhancement) and testing of JOIN and DLEP capabilities for TTNT begin in FY2024.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years	Various	Various : Various	0.304	0.000		0.000		0.000		-		0.000	0.000	0.304	0.304
Systems Engineering Support	MIPR	MITRE : Bedford, MA	1.539	2.568	Dec 2021	1.394	Dec 2022	1.500	Dec 2023	-		1.500	Continuing	Continuing	Continuing
Government Engineering Support	WR	NIWC PAC : San Diego,CA	2.058	0.700	Nov 2021	0.750	Oct 2022	0.900	Nov 2023	-		0.900	Continuing	Continuing	Continuing
Data Link Analysis	WR	NAVAIR : Pax River, MD	0.335	0.106	Jan 2022	0.208	Dec 2022	0.215	Dec 2023	-		0.215	Continuing	Continuing	Continuing
Engineering Support	C/CPFF	Sentek Global : San Diego, Ca	0.690	0.066	Apr 2022	0.812	Dec 2022	0.853	Dec 2023	-		0.853	0.000	2.421	2.421
Information Assurance, Risk and Program Support	C/CPFF	G2 : San Diego, Ca	0.717	0.000		0.250	Jan 2023	0.250	Jan 2024	-		0.250	0.000	1.217	1.217
Information Assurance, Risk and Program SupportText	MIPR	AFRL : Rome, NY	0.275	0.300	Dec 2021	0.425	Dec 2022	0.425	Dec 2023	-		0.425	Continuing	Continuing	Continuing
Subtotal			5.918	3.740		3.839		4.143		-		4.143	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			118.527	63.855		82.429		149.068		-		149.068	Continuing	Continuing	N/A
<b>Remarks</b> Prior Year cost data is provided under PE 0205604N Project 3020.															

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PE 0604280N: *JT TACTICAL RADIO SYSTEM (JTRS)*  
Navy

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<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)
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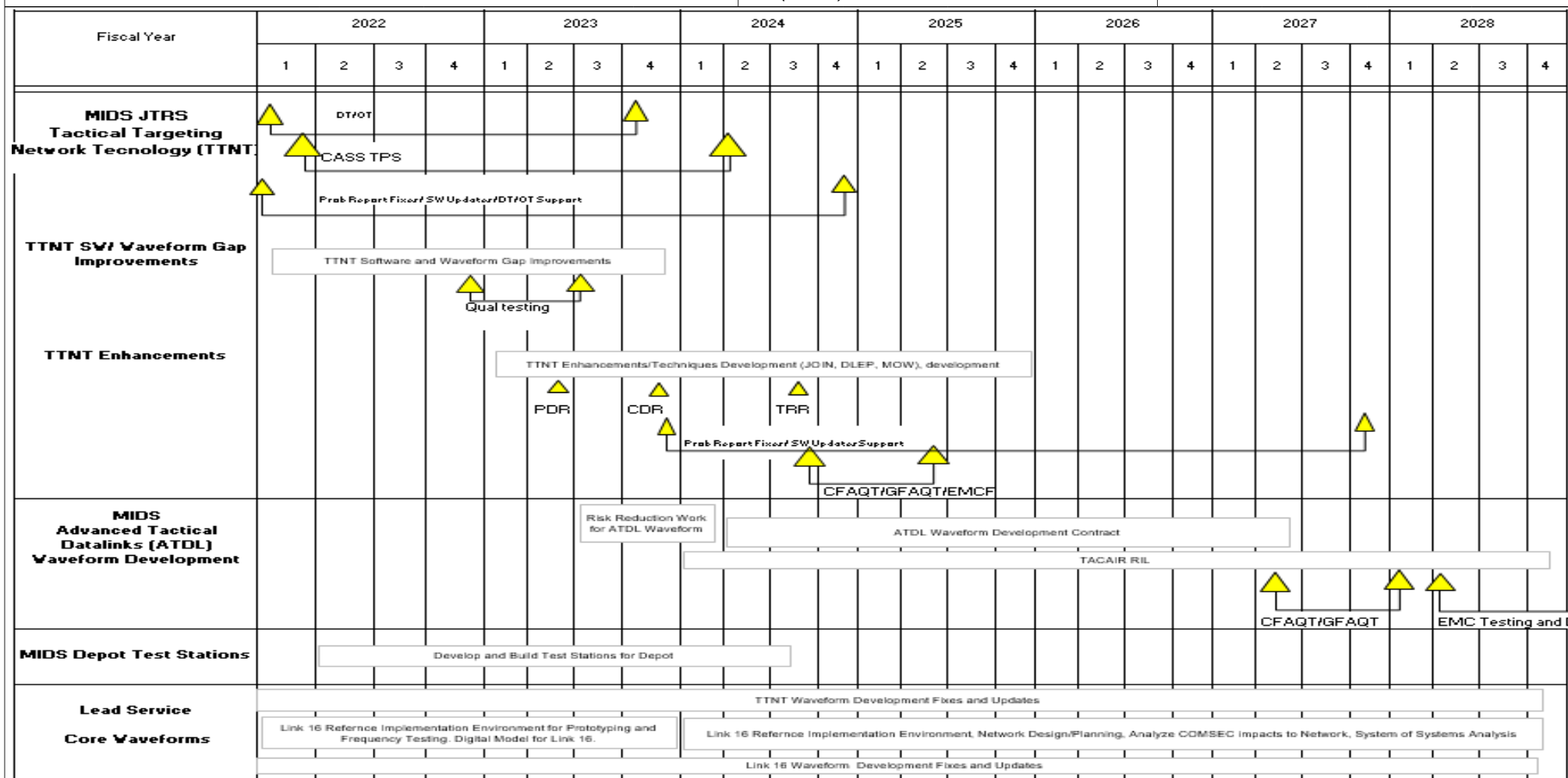
PE 0604280N: *JT TACTICAL RADIO SYSTEM (JTRS)*  
Navy

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Appropriation/Budget Activity	1319 / 5

<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)
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<b>Project (Number/Name)</b>	3020 / MIDS/JTRS
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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

3020 / MIDS/JTRS

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3020</b>				
MIDS JTRS Modernization Link 16 Hardware Transceiver Upgrade: Development Contract	1	2022	4	2022
MIDS JTRS Modernization Link 16 Hardware Transceiver Upgrade: Test Readiness Review	2	2022	2	2022
MIDS JTRS Modernization Link 16 Hardware Transceiver Upgrade: Contractor First Article Qualification Test (CFAQT)/EMC Testing	1	2022	4	2023
MIDS JTRS Modernization Software/Firmware: MIDS Modernization SW/FW development contract	1	2022	4	2024
MIDS JTRS Modernization Software/Firmware: BC 1 SW/FW Drop 1	3	2022	4	2024
MIDS JTRS Modernization Software/Firmware: BC 2 SW/FW Drop 2	1	2025	4	2026
MIDS JTRS Modernization Software/Firmware: BC1 EMC Testing and Developmental Test and Operational Test	2	2024	2	2025
MIDS JTRS Modernization Software/Firmware: BC2 EMC Testing and Developmental Test and Operational Test	3	2026	3	2027
Field Loadable Capability: Field Loadable Capability Development/Test and Integration	1	2022	4	2022
CMN-4 Enhancements/SW Baseline: CMN-4 Enhancements/Machine to Machine/ Crypto/Software Integrated Build	2	2023	4	2027
MIDS JTRS Modernization Special Test Equipment (STE): STE Update WIN10 Contract	2	2022	3	2023
NSA Information Assurance Security Requirements Document (IASRD): IASRD Contract	1	2022	2	2022
MIDS JTRS Tactical Targeting Network Technology (TTNT): Platform Developmental Test (DT) and Operational Test (OT)	1	2022	4	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 3020 / MIDS/JTRS	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MIDS JTRS Tactical Targeting Network Technology (TTNT): Consolidated Automated Support System (CASS) Test Program Sets (TPS)	1	2022	2	2024
MIDS JTRS Tactical Targeting Network Technology (TTNT): Problem Report Fixes/SW Updates DT/OT Support	1	2022	4	2024
TTNT Waveform Gap Improvements: TTNT SW/Waveform Gap Improvements	1	2022	4	2023
TTNT Waveform Gap Improvements: Qual Testing	4	2022	3	2023
TTNT Enhancements: Enhancements/Techniques Contract Award	1	2023	4	2025
TTNT Enhancements: Enhancements/Techniques Preliminary Design Review	2	2023	2	2023
TTNT Enhancements: Enhancements/Techniques Critical Design Review	4	2023	4	2023
TTNT Enhancements: Test Readiness Review	3	2024	3	2024
TTNT Enhancements: CFAQT/GFAQT/EMCF	3	2024	2	2025
TTNT Enhancements: Problem Report Fixes/SW Updates Support (Fixes out of test)	4	2023	4	2027
MIDS Advanced Tactical Datalinks Waveform Development: Risk Reduction Work for ATDL Waveform	3	2023	1	2024
MIDS Advanced Tactical Datalinks Waveform Development: TACAIR RIL	1	2024	4	2028
MIDS Advanced Tactical Datalinks Waveform Development: ATDL Waveform Development Contract	2	2024	2	2027
MIDS Advanced Tactical Datalinks Waveform Development: CFAQT/GFAQT	2	2027	1	2028
MIDS Advanced Tactical Datalinks Waveform Development: EMC Testing and DT/OT	2	2028	4	2028
MIDS Depot Test Stations: Test Station	1	2022	3	2024
MIDS Core Waveforms: TTNT Waveform Development Fixes and Updates	1	2022	4	2028
MIDS Core Waveforms: Link 16 Reference Implementation Environment for Prototyping and Frequency Testing	1	2022	4	2023
MIDS Core Waveforms: Link 16 Refernce Implementation Environment, Network Design/Planning, Analyze COMSEC impacts to Network, System of Systems Analysis	1	2024	4	2028
MIDS Core Waveforms: Link 16 Waveform Development Fixes and Updates	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 3078 / Digital Modular Radio			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3078: Digital Modular Radio	53.890	2.460	6.347	7.115	-	7.115	6.868	6.820	6.948	7.088	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Digital Modular Radio (DMR) with Integrated Waveform (IW) and Mobile User Objective System (MUOS) capable hardware is the Navy's technical solution for the IW/MUOS requirement. The DMR AN/USC-61(C), is the first software defined radio to become a communications system standard for the U.S. Military. The compact, multi-channel DMR provides 3G, Wideband Code Division Multiple Access (WCDMA) technology, for high speed/capacity voice and data satellite communications. DMR radios currently operate aboard U.S. Navy surface and subsurface vessels, fixed-sites and other Department of Defense (DoD) communication platforms using frequencies ranging from 2 MHz to 2 GHz. Certified to pass secure voice and data at Multiple Independent Levels of Security (MILS) over High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), and Satellite Communications (SATCOM) channels, the DMR system was developed to the U.S. Navy's specifications and meets all the stringent environmental, Electromagnetic Interference (EMI) and performance requirements for use in the U.S. Fleet. This system is formally specified by both Fleet Commanders as a threshold capability, for global maritime command control and communications in a Distributed Maritime Environment, to execute current warfighting plans and is required for National Command and Control capability. This program is for continued development/integration of the IW and MUOS waveforms into the DMR in accordance with Military Standards 188-181,2,3. Additionally, the enhancements of High Frequency Distribution Amplifier Group (HFDAG) and, HF Automated Link Establishment (ALE) and Second-Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) will also be developed/integrated into the DMR. HFDAG is a follow-on HF solution to fulfill transmit and receive HF communication capability with various modes of operation, such as ALE, for Navy platforms. HFDAG will utilize the existing DMR as the exciter/receiver. Generation 3 (GEN 3) HF ALE/HF wideband provides Navy users with improved HF communications, increased transmission rates from radio to radio, and serves as a supplement to SATCOM when SATCOM networks are overloaded or unavailable. SATURN is the follow-on HAVEQUICK II anti-jamming solution in accordance with NATO Standardization Agreement 4372. (Retirement date for HAVEQUICK II is no later than 1OCT24.) SATURN capability will counter adversaries' jamming efforts and ensure Navy's Assured Command and Control UHF communications operational end-to-end capability as well as enhance interoperability within/between DMR users and with Allied/Coalition partners. IW uses a Time Division Multiple Access (TDMA) communication system in an attempt to improve satellite bandwidth utilization over legacy SATCOM waveforms. This enables demand assigned services on UHF SATCOM networks to support new applications that require better performance and higher channel throughput. The MUOS waveform will enable MUOS satellites to provide worldwide communication satellite coverage for DoD requirements. MUOS will provide functionality comparable to commercial mobile phone systems.

FY24 will continue integration of the MUOS waveform 3.2 as well as development of the SATURN waveform from the currently used HAVEQUICK II (HQII) waveform; and complete development of Crypto Mod SINCGARS 3.x Phase 2.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> DMR	2.460	6.347	7.115	0.000	7.115
<b>Articles:</b>	-	-	-	-	-



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 3078 / Digital Modular Radio			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>Description:</b> Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion. DMR, with IW and MUOS capable hardware, is the Navy's technical solution for the IW/MUOS requirement. As the Navy's primary technical solution, DMR provides the UHF SATCOM IW and MUOS waveform capability to the Fleet. The MUOS waveform enables MUOS satellites to provide worldwide communication satellite coverage for DoD requirements, with functionality comparable to commercial mobile phone systems.</p> <p><b>FY 2023 Plans:</b> FY23 DMR will complete Advanced HF (AHF) Functionality Development, continue crypto mod integration, including MUOS waveform 3.2, and begin development of the Second generation Anti-jam Tactical UHF Radio for North Atlantic Treaty Organization (NATO) (SATURN) waveform. GDMS shall evaluate the 3.1 and 3.2 advanced modems which will require the confirmation and operational capability on the DMR. The Current 100W amplifiers will additionally need to be evaluated for performance with the SATURN WF.</p> <p><b>FY 2024 Base Plans:</b> FY24 DMR will complete crypto mod integration. DMR will continue MUOS waveform 3.2 integration as well as development of the Second generation Anti-jam Tactical UHF Radio for North Atlantic Treaty Organization (NATO) (SATURN) waveform.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The \$0.768M increase in funding from FY23 to FY24 is for continuation of the development of the SATURN waveform.</p>											
Accomplishments/Planned Programs Subtotals							2.460	6.347	7.115	0.000	7.115
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/3010: Shipboard Tactical Comms	43.212	36.941	29.776	-	29.776	27.350	32.087	35.622	36.392	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 3078 / Digital Modular Radio

**D. Acquisition Strategy**

General Dynamics Mission Systems (GDMS), formerly General Dynamics C4 Systems (GDC4S), owns the technical data rights to the Digital Modular Radio (DMR). Due to this fact, they are the only contractor with the unique capabilities and technical know-how to perform the required design work to complete the Integrated Waveform (IW) upgrade, the Mobile User Objective System (MUOS) interoperability efforts, and cryptographic modernization development.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)						<b>Project (Number/Name)</b> 3078 / Digital Modular Radio			

<b>Product Development (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
IW/MUOS Development	C/CPFF	GDMS : Scottsdale, AZ	24.671	0.000		0.000		0.000		-		0.000	0.000	24.671	-
AHF Functionality Development	C/CPFF	GDMS : Scottsdale, AZ	11.172	1.477	Oct 2021	0.000		0.000		-		0.000	0.000	12.649	-
IW/MUOS Development	WR	NIWC PAC : San Diego, CA	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	-
AHF Functionality Development	WR	NIWC PAC : San Diego, CA	1.130	0.200	Oct 2021	0.150	Oct 2022	0.000		-		0.000	0.000	1.480	-
Cryptographic Modernization Development	C/CPFF	GDMS : Scottsdale, AZ	1.170	0.000		0.000		0.000		-		0.000	0.000	1.170	-
Cryptographic Modernization Development	WR	NIWC PAC : San Diego, CA	0.370	0.200	Dec 2021	0.300	Dec 2022	0.780	Dec 2023	-		0.780	Continuing	Continuing	Continuing
SATURN Development	C/CPFF	GDMS : Scottsdale, AZ	0.000	0.000		4.128	Oct 2022	0.786	Oct 2023	-		0.786	Continuing	Continuing	Continuing
SATURN Development	WR	NIWC PAC : San Diego, CA	0.000	0.000		1.084	Oct 2022	4.776	Oct 2023	-		4.776	Continuing	Continuing	Continuing
<b>Subtotal</b>			39.113	1.877		5.662		6.342		-		6.342	Continuing	Continuing	N/A

**Remarks**

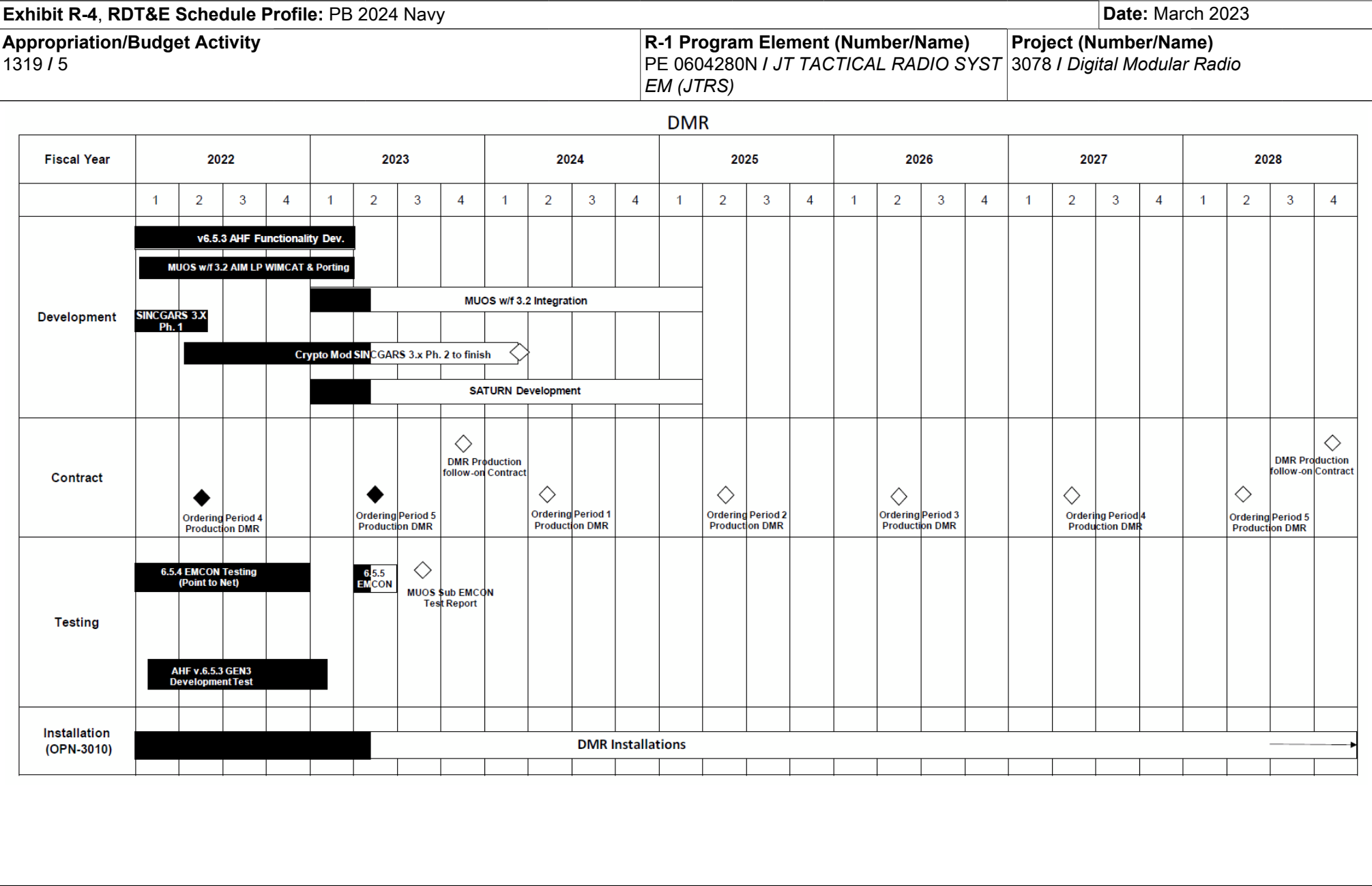
Product development increase between FY23 to FY24 is due to continued SATURN development effort. Cryptographic Modernization includes MUOS waveform 3.2 efforts as well.

<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
System Engineering Support	C/CPFF	NIWC PAC : San Diego, CA	8.091	0.228	Dec 2021	0.228	Dec 2022	0.228	Dec 2023	-		0.228	Continuing	Continuing	Continuing
<b>Subtotal</b>			8.091	0.228		0.228		0.228		-		0.228	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)						Project (Number/Name) 3078 / Digital Modular Radio					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	C/CPFF	GDMS : San Diego, CA	0.000	0.229	Dec 2021	0.229	Dec 2022	0.225	Dec 2023	-		0.225	Continuing	Continuing	Continuing		
Developmental Test & Evaluation (DT&E)	WR	NIWC PAC : San Diego, CA	0.000	0.063	Nov 2021	0.128	Nov 2022	0.120	Nov 2023	-		0.120	Continuing	Continuing	Continuing		
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	4.160	0.000		0.000		0.000		-		0.000	0.000	4.160	-		
Subtotal			4.160	0.292		0.357		0.345		-		0.345	Continuing	Continuing	N/A		
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Management Support	C/CPFF	BAH : San Diego, CA	2.526	0.063	Nov 2021	0.100	Nov 2022	0.200	Nov 2023	-		0.200	Continuing	Continuing	Continuing		
Subtotal			2.526	0.063		0.100		0.200		-		0.200	Continuing	Continuing	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			53.890	2.460		6.347		7.115		-		7.115	Continuing	Continuing	N/A		
Remarks																	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	<b>Project (Number/Name)</b> 3078 / Digital Modular Radio	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3078</b>				
Production Deliveries	1	2022	4	2028
DMR Installations	1	2022	4	2028
Crypto Mod SINCGARS 3.x Ph. 1 to CDR	1	2022	2	2022
6.5.4 Submarine EMCON Testing (Point to Net)	1	2022	4	2022
AHF ALE GEN 3 AHF Functionality Development (v6.5.3)	1	2022	1	2023
MUOS w/f 3.2 AIM LP WIMCAT & Porting	1	2022	1	2023
MUOS w/f 3.2 Integration	1	2023	1	2025
MUOS Sub EMCON Test Report	3	2023	3	2023
Crypto Mod SINCGARS 3.x Ph. 2 to finish	2	2022	1	2024
AHF ALE GEN 3 Software Development (v6.5.3) Development Test	1	2022	1	2023
SATURN Development	1	2023	1	2025
6.5.5 Submarine EMCON Testing	2	2023	2	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 3341 / Network Tactical Common Data Link			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3341: Network Tactical Common Data Link	71.274	19.162	6.037	3.017	-	3.017	5.489	4.444	5.636	4.650	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Network Tactical Common Data Link (NTCDL) provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, airborne, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video) across dissimilar joint, service, coalition, and civil networks. NTCDL provides warfighters with the capability to support multiple, simultaneous, networked operations with currently fielded Common Data Link (CDL)-equipped air platforms (e.g. MH-60R), in addition to next generation manned and unmanned platforms (e.g., P-8, Triton, MQ-25 (Stingray), small tactical unmanned aircraft systems (STUAS) and Fire Scout). NTCDL is an incremental capability (surface, airborne, sub-surface, man-portable) providing modular, scalable, multiple-link networked communications. NTCDL benefits the fleet by providing a horizon extension for line-of-sight sensor systems for use in time-critical strike missions and supports tasking, collection, processing, exploitation, and dissemination (TCPED) via its ISR networking capability. NTCDL supports Resilient Command and Control (RC2) through its relay capability, and supports TCPED through its ISR networking capability.

FY 2024 request is for NTCDL to conduct Initial Operational Test and Evaluation and continue development of Initial Capability to support high speed waveforms, and high speed data rates (up to 45 Mbps), and platform communication equipment.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Network Tactical Common Data Link (NTCDL)	19.162	6.037	3.017	0.000	3.017
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Network Tactical Common Data Link (NTCDL) provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, airborne, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video) across dissimilar joint, service, coalition, and civil networks. NTCDL provides warfighters with the capability to support multiple, simultaneous, networked operations with currently fielded Common Data Link (CDL)-equipped air platforms (e.g. MH-60R), in addition to next generation manned and unmanned platforms (e.g., P-8, Triton, MQ-25 (Stingray), small tactical unmanned aircraft systems (STUAS) and Fire Scout). NTCDL is an incremental capability (surface, airborne, sub-surface, man-portable) providing modular, scalable, multiple-link networked communications. NTCDL benefits the fleet by providing a horizon extension for line-of-sight sensor systems for use in time-critical strike missions and supports tasking, collection, processing,					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy							Date: March 2023				
Appropriation/Budget Activity 1319 / 5			R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)			Project (Number/Name) 3341 / Network Tactical Common Data Link					
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>							<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
exploitation, and dissemination (TCPED) via its ISR networking capability. NTCDL supports Resilient Command and Control (RC2) through its relay capability, and supports TCPED through its ISR networking capability.											
FY 2024 request is for NTCDL to conduct Initial Operational Test and Evaluation and continue development of Initial Capability to support high speed waveforms, and high speed data rates (up to 45 Mbps) and platform communication equipment.											
<b>FY 2023 Plans:</b> FY 2023 plans include development of Engineering Development Models (EDM) Initial Capability software (Ku). Continued maturation of software supporting the initial hardware capability and providing increased CDL bandwidth, platform communication equipment, and data rates.											
<b>FY 2024 Base Plans:</b> FY 2024 plans include the commencing Tech Evaluation and Initial Operational Test & Evaluation, and continued maturation of software supporting the initial hardware capability and providing continuing maturation of software to provide increased CDL bandwidth, platform communication equipment, and data rates.											
<b>FY 2024 OCO Plans:</b> N/A											
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The FY24 funding decreased by \$3.02M due to completion EDM #2 technical data package (TDP) and functional configuration audit (FCA) as well as completion of DT-B2, EDM PAA #2 First Article Test completion.											
Accomplishments/Planned Programs Subtotals							19.162	6.037	3.017	0.000	3.017
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/2950: Network Tactical Common Data Link (CDL)	8.795	11.792	16.475	-	16.475	9.070	12.602	7.435	13.233	Continuing	Continuing
<b>Remarks</b> NTCDL is the follow-on program for the CDLS Tech Refresh. The OPN for this program began in FY22.											



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 3341 / Network Tactical Common Data Link

D. Acquisition Strategy

NTCDL will utilize the evolutionary acquisition approach for: surface, air, sub-surface, man-portable in a scalable development approach. EDMs and LRIPs will provide Ku-band Phased Array Antennas (PAAs) with 4 simultaneous links, with a range of 110-150 nautical miles and speeds of up to 45Mbps; with the future ability, if funded, to deliver Full Capability which will include 2 additional simultaneous links (X/Ku), increase range up to 240 nautical miles, and increase speeds up to 274Mbps.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 3341 / Network Tactical Common Data Link					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NTCDL Product Development	C/CPIF	BAE Systems, Int : Wayne, NJ	58.158	11.848	Oct 2021	3.581	Oct 2022	0.000		-		0.000	0.000	73.587	-
NTCDL Software Development	C/CPIF	TBD : TBD	0.000	0.000		0.000		0.633	Jun 2024	-		0.633	0.000	0.633	Continuing
NTCDL Software Development	WR	NIWC PAC : San Diego, CA	3.226	4.448	Nov 2021	0.400	Nov 2022	0.456	Nov 2023	-		0.456	Continuing	Continuing	Continuing
NTCDL Software Development	C/IDIQ	Technology Unlimited Group : San Diego, CA	1.326	0.719	Feb 2022	0.255	Feb 2023	0.511	Feb 2024	-		0.511	Continuing	Continuing	Continuing
Subtotal			62.710	17.015		4.236		1.600		-		1.600	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NTCDL Systems Engineering	WR	NIWC PAC : San Diego, CA	3.481	0.430	Nov 2021	0.433	Nov 2022	0.228	Nov 2023	-		0.228	Continuing	Continuing	Continuing
NTCDL Logistics Engineering	C/CPFF	CSA : San Diego, CA	0.202	0.000		0.000		0.000		-		0.000	0.000	0.202	-
Subtotal			3.683	0.430		0.433		0.228		-		0.228	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NIWC PAC : San Diego, CA	3.896	0.855	Nov 2021	0.700	Nov 2022	0.516	Nov 2023	-		0.516	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	MIPR	JITC : Fort Huachuca, AZ	0.021	0.040	Dec 2021	0.220	Nov 2022	0.150	Nov 2023	-		0.150	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	MIPR	COMOPTEVFOR : Norfolk, VA	0.044	0.022	Dec 2021	0.230	Nov 2022	0.295	Nov 2023	-		0.295	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)						Project (Number/Name) 3341 / Network Tactical Common Data Link			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			3.961	0.917		1.150		0.961		-		0.961	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NTCDL Program Management Support	C/CPFF	BAH : San Diego, CA	0.920	0.800	Nov 2021	0.218	Nov 2022	0.228	Nov 2023	-		0.228	Continuing	Continuing	Continuing
Subtotal			0.920	0.800		0.218		0.228		-		0.228	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			71.274	19.162		6.037		3.017		-		3.017	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

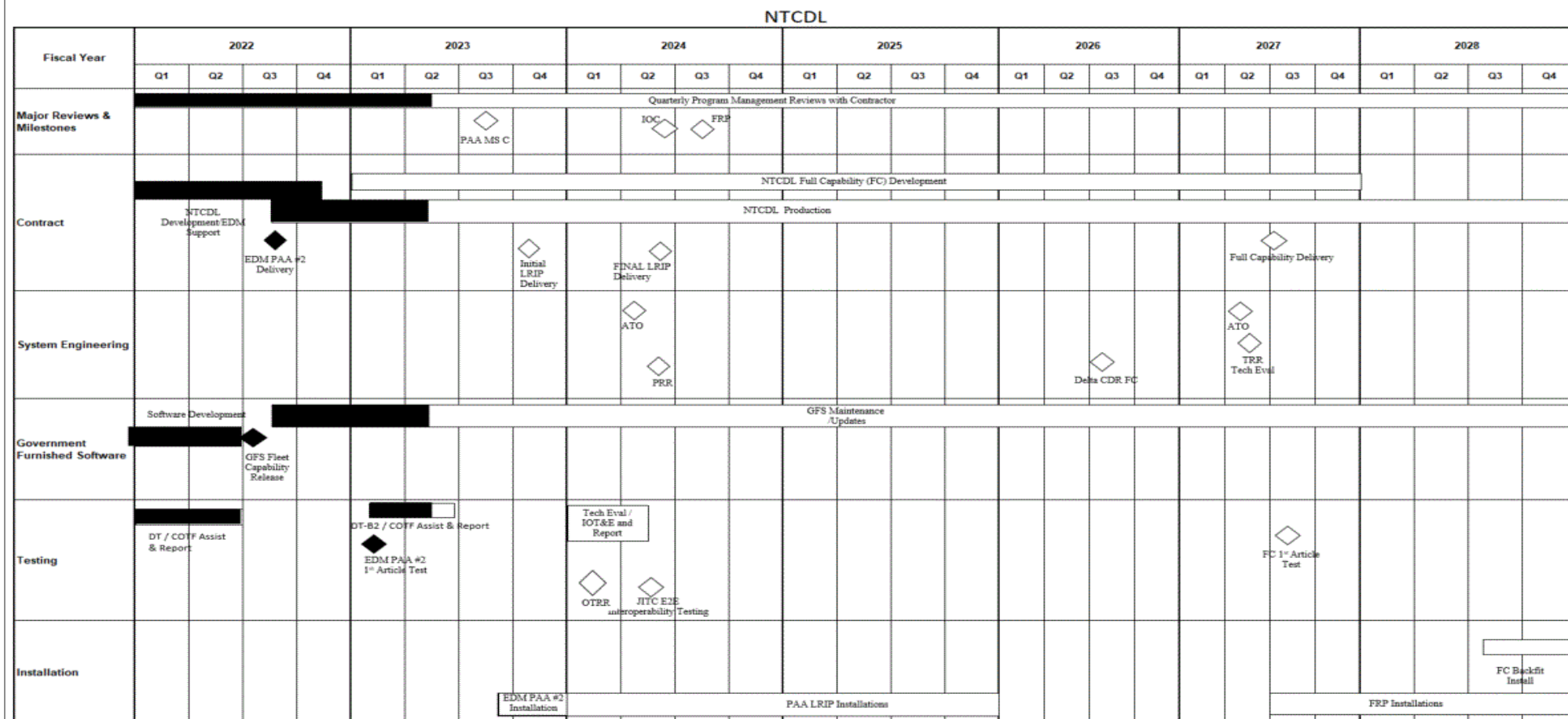
1319 / 5

R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

Project (Number/Name)

3341 / Network Tactical Common Data Link



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604280N / JT TACTICAL RADIO SYST  
EM (JTRS)

## Project (Number/Name)

3341 / Network Tactical Common Data Link

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3341</b>				
Quarterly Program Management Review with Contractor	1	2022	4	2028
NTCDL Development/EDM Support Contract	1	2022	4	2022
Government Furnished Software (GFS) Development	1	2022	2	2022
Development Testing (DT) / COTF Assist & Report	1	2022	2	2022
Operational Test Readiness Review (OTRR) 1	1	2024	1	2024
NTCDL Full Capability Development	1	2023	4	2027
GFS Fleet Capability Release	3	2022	3	2022
EDM PAA #2 First Article Test	1	2023	1	2023
JITC E2E Interoperability Testing	2	2024	2	2024
PAA Milestone C	3	2023	3	2023
NTCDL Production Contract	3	2022	4	2028
GFS Maintenance/Updates	3	2022	4	2028
EDM 2 PAA Delivery (QTY 1)	3	2022	3	2022
FC First Article Test	3	2027	3	2027
Delta Critical Design Review (CDR) Full Capability (FC)	3	2026	3	2026
Initial LRIP Delivery	4	2023	4	2023
TRR Tech Eval	2	2027	2	2027
Tech Evaluation / IOT&E and Report	1	2024	2	2024
PAA LRIP Installations	1	2024	4	2025
Initial Operational Capability (IOC)	2	2024	2	2024
ATO 2	2	2027	2	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 3341 / Network Tactical Common Data Link
		Start		End
Events by Sub Project		Quarter	Year	Quarter Year
Full Capability (FC) Delivery		3	2027	3 2027
Final LRIP Delivery		2	2024	2 2024
Production Readiness Review (PRR)		2	2024	2 2024
FRP Installations		3	2027	4 2028
ATO		2	2024	2 2024
Full Capability Back-fit Install		3	2028	4 2028
DT-B2 / COTF Assist & Report		1	2023	2 2023
FRP		3	2024	3 2024
EDM PAA #2 Installation		3	2023	4 2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
4011: Naval Coastal Warfare Surv and C4I Sys	5.494	2.059	3.314	3.274	-	3.274	3.062	3.111	3.163	3.227	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Navy Expeditionary project supports the Navy Expeditionary Combat Command (NECC) mission to detect, deter or interdict potential threats to DoN assets using agile, modular and scalable technology. NECC units have a number of current and future Command, Control, Communications, Computers & Intelligence (C4I) technological requirements for Tactical/Command Operations Center, tactical vehicles, combatant craft, and dismounted personnel. NECC operations require units to maintain effective command and control, develop and display a common tactical picture, and share intelligence and current operational information with higher headquarters, subordinate units, joint forces and coalition allies. Small, Medium and Large Scale Communication Systems (LSCS) are the C4I hub for the NECC; Navy Enterprise Tactical Command and Control (NETC2) is the converged LSCS baseline. Future C4I research and development include enhanced information transport, network cyber security posture, cloud-based architecture, assured communications in denied environments along with agility and mobility. Funding also supports testing and evaluation of cyber security issues associated with obsolescence of network items and if not addressed will impact the ability of the Program Office to maintain system accreditation under Risk Management Framework (RMF) revoking multiple LSCS assets authority to connectivity on the Department of Defense Information Network (DoDIN). Efforts are in alignment with NECC's strategic Expeditionary Warfare Improvement Program (EXWIP) Integrated Priority Capability List (IPCL) priorities and maintain alignment with greater DoD initiatives, such as Joint Information Environment (JIE), Mission Partner Environment (MPE) in order to maintain interoperability and drive down DoN enterprise costs.

The future of large scale communications assets such as Navy Enterprise Tactical Command and Control (NETC2) (V) 1 and 2, Expeditionary Carry-on Network (ExCON), Assured Command and Control (AC2), will be converging to a Common Expeditionary and Shore Baseline culminating in a single RMF Authority to Operate (ATO). Next generation air, surface and subsurface surveillance systems, as well as enhanced C4I capabilities, are required to meet operational objectives. Future technologies are being evaluated as enabling capabilities to expand situational awareness, providing additional tactical decision aids to the local area commander. Future C4I research and development efforts will be identified within NECC strategic Expeditionary Warfare Improvement Program (EXWIP) Integrated Priority Capability List (IPCL) priorities to increase agility, mobility and network security posture. Additional efforts will be driven by greater DoD initiatives, such as JIE Inc II, in order to maintain interoperability and drive down DoN enterprise costs.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> NECC C4ISR Modernization	2.059	3.314	3.274	0.000	3.274
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)		Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Evaluate technologies to support migration to Impact level 6 (IL6) and Impact Level 7 (IL7) cloud environments. Keep expanding capabilities of common infrastructure to increase speed to capability through containerization technologies and utilization of DevSecOps in order to rapidly deliver mission tailored applications and cloud based services. Develop Tier 1 capabilities to support multi-cloud environments. Additionally, C4I Arsenal will participate in military exercises to prove concept and timing requirements can be met.						
FY 2024 Base Plans: Continue to evaluate technologies to support migration to Impact level 6 (IL6) and Impact Level 7 (IL7) cloud environments. Keep expanding capabilities of common infrastructure to increase speed to capability through containerization technologies and utilization of DevSecOps in order to rapidly deliver mission tailored applications and cloud based services. Develop Tier 1 capabilities to support multi-cloud environments. Additionally, C4I Arsenal will participate in military exercises to prove concept and timing requirements can be met.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.04 million from FY23 to FY24 is a result of the reduction of onsite surveys in preparation of Operation Exercises.						
Accomplishments/Planned Programs Subtotals		2.059	3.314	3.274	0.000	3.274
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks						
D. Acquisition Strategy Funding supports an evolutionary acquisition strategy supporting the dynamically evolving rapid action mission of Navy Expeditionary Forces. Small, Medium and Large Scale Communication Systems (LSCS) funding will align LSCS to the Deployable Joint Command and Control (DJC2) product baseline. The project will continuously analyze operational utilization of the systems and will roll analysis results into periodic system upgrades to address cyber security vulnerabilities, obsolescence, and maximize operational effectiveness. The intent of this strategy is to drive down development, production, and logistics costs, while leveraging technologies developed for other agencies to increase the capabilities of Navy Expeditionary Forces. The baseline configuration for Large Scale Communication Systems (LSCS) is the Navy Enterprise Tactical Command and Control (NETC2), a system scalable to Adaptive Force Package (AFP) levels. Efforts include development of capabilities based on emergent						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys
<p>requirements, operational feedback, alignment with Dept. of Defense initiatives such as Joint Information Environment (JIE) / Mission Partner Environment, and identification through strategic Expeditionary and Warfare Improvement Program (EXWIP) Integrated Priority Capability List (IPCL) priorities to include reach back for tactical vehicles and craft, blue force tracking, tactical data link capability, and sensor technologies in support of surveillance and reconnaissance missions.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering - Expeditionary	WR	NSWC : PANAMA CITY, FL	1.503	0.556	Nov 2021	0.895	Nov 2022	0.883	Nov 2023	-		0.883	Continuing	Continuing	Continuing
Hardware/Software Development	C/CPAF	GTRI : ATLANTA, GA	2.343	0.886	Nov 2021	1.425	Nov 2022	1.406	Nov 2023	-		1.406	Continuing	Continuing	Continuing
Subtotal			3.846	1.442		2.320		2.289		-		2.289	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	NSWC : PANAMA CITY, FL	0.425	0.257	Nov 2021	0.521	Nov 2022	0.512	Nov 2023	-		0.512	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC : PANAMA CITY, FL	0.742	0.175	Nov 2021	0.175	Nov 2022	0.175	Nov 2023	-		0.175	Continuing	Continuing	Continuing
Subtotal			1.167	0.432		0.696		0.687		-		0.687	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support - Expeditionary	WR	NIWC PAC : SAN DIEGO, CA	0.481	0.185	Nov 2021	0.298	Nov 2022	0.298	Nov 2023	-		0.298	Continuing	Continuing	Continuing
Subtotal			0.481	0.185		0.298		0.298		-		0.298	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			5.494	2.059		3.314		3.274		-		3.274	Continuing	Continuing	N/A
Remarks Prior Year cost data is provided under PE 0604230N Project 4011															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)					Project (Number/Name) 4011 / Naval Coastal Warfare Surv and C4I Sys	

Proj 4011	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
System Development																													
			DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲				DT/OT ▲		
	NETC2 Capability Development																												
Production																													
	LSCS Upgrades Refresh																												
	Tactical Vehicles and Combatant Crafts PR/TR																												
	Expeditionary VHF/UHF/SATCOM (EVUS) UHF TACSAT Upgrade																												
	Expeditionary SIPR/NIPR Network Upgrades/Refresh																												
	Converged IP																												
	VoISP																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	<b>Project (Number/Name)</b> 4011 / Naval Coastal Warfare Surv and C4I Sys	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 4011</b>				
System Development: NECC C4ISR Development: Navy C4I Test and Certification Events FY22	3	2022	3	2022
System Development: NECC C4ISR Development: Navy C4I Test and Certification Events FY23	3	2023	3	2023
System Development: NECC C4ISR Development: Navy C4I Test and Certification Events FY24	3	2024	3	2024
System Development: NECC C4ISR Development: Navy C4I Test and Certification Events FY25	3	2025	3	2025
System Development: NECC C4ISR Development: Navy C4I Test and Certification Events FY26	3	2026	3	2026
System Development: NECC C4ISR Development: Navy C4I Test and Certification Events FY27	3	2027	3	2027
System Development: NECC C4ISR Development: Navy C4I Test and Certification Events FY28	3	2028	3	2028
System Development: NECC C4ISR Development: NETC2 Capability Development	1	2022	4	2028
Production: NECC C4ISR Procurement: LSCS Upgrades Refresh	1	2022	4	2028
Production: NECC C4ISR Procurement: Tactical Vehicles and Combatant Crafts PR/ TR	1	2022	4	2028
Production: NECC C4ISR Procurement: Expeditionary VHF/UHF/SATCOM (EVUS) UHF TACSAT Upgrade	1	2022	4	2028
Production: NECC C4ISR Procurement: Expeditionary SIPR/NIPR Network Upgrades/ Refresh	1	2022	4	2028
Production: NECC C4ISR Procurement: Converged IP	1	2022	4	2028
Production: NECC C4ISR Procurement: VoISP	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This Congressional Add provides for the development, test and evaluation of enhanced capabilities for Satellite Communications by furthering Science & Technology (S&T) research and transition activities associated with resilient communications capabilities. Specifically, this funding will provide for technology development, test, demonstration and validation for a Luneburg Lens antenna system for Low Earth Orbit (LEO) and Medium Earth Orbit (MEO) satellites (e.g., SpaceXs Starlink, OneWeb, Amazons Kuiper, etc.). This antenna system will include the development of a unique and enabling capability to perform direct conversion of Radio Frequency (RF) energies to/from photons, which is required to significantly reduce the complexity of signals routing and size for the Luneburg Lens based solid state phased array antenna system.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b>Congressional Add:</b> Integrated photonic systems	0.000	5.000
<b>FY 2022 Accomplishments:</b> N/A		
<b>FY 2023 Plans:</b> Fund Science & Technology (S&T) projects for Satellite Terminal (transportable) Non-Geostationary (STtNG), which are broken in to the following 9 tasks:		
1. System-level Study: This study will determine the Luneburg Lens antenna system requirements based on link-budget analyses and constraints set by the Government customer. The identified requirements will translate to a set of technical specifications for each sub-system, which will influence the system architecture design.		
2. Luneburg Lens Development: Identify potential external commercial Luneburg lens providers/manufacturers and possible materials for internal/in-house Luneburg lens fabrication. The performer will compare the identified fabrication methods and will decide on the best way forward to build and test prototype lenses with planar or curved probe arrays.		
3. Hemispheric Antenna Feed Development: Identify critical antenna feed features and refine the performance specifications. The performer will investigate lens configurations to meet these specifications and design, simulate, fabricate and test feed prototypes. This will result in a build of a full antenna feed array.		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	<b>Project (Number/Name)</b> 9999 / Congressional Adds

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
4. Rx/Tx/TRx Photonic Integrated Circuits (PICs) Development: Expand the current Phase II Small Business Innovative Research (SBIR) development of silicon PICs on a system-level vice device-level. This task will include the continued heterogeneous integration development as required for implementation of desired TRx modules, as well as the development of layout designs for a manufacturing run of PICs suitable for integration into the Luneburg lens system.		
5. Develop Modulators: Develop Thin-Film Lithium Niobate (TFLN) modulators with high conversion efficiency and large operational bandwidth, as well as suitable packing techniques for hemispherical integration.		
6. Develop Photodetectors: Develop photodetectors with high power and high linearity for the Tx and a balanced configuration on the Rx with a very high common-mode-rejection-ratio (CMRR), which is used to mitigate relative intensity noise (RIN).		
7. RF/EO TRx Modules: Design, fabricate and test: RF gain and diplexer section, optical/photonic carrier, and ultimately, a full RF/EO module with antenna feed.		
8. Build a Multi-Module System: This task will develop the fabrication processes for an increased module count.		
9. Develop controls, monitoring and processing software for the Luneburg lens antenna system.		
<b>Congressional Adds Subtotals</b>	0.000	5.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

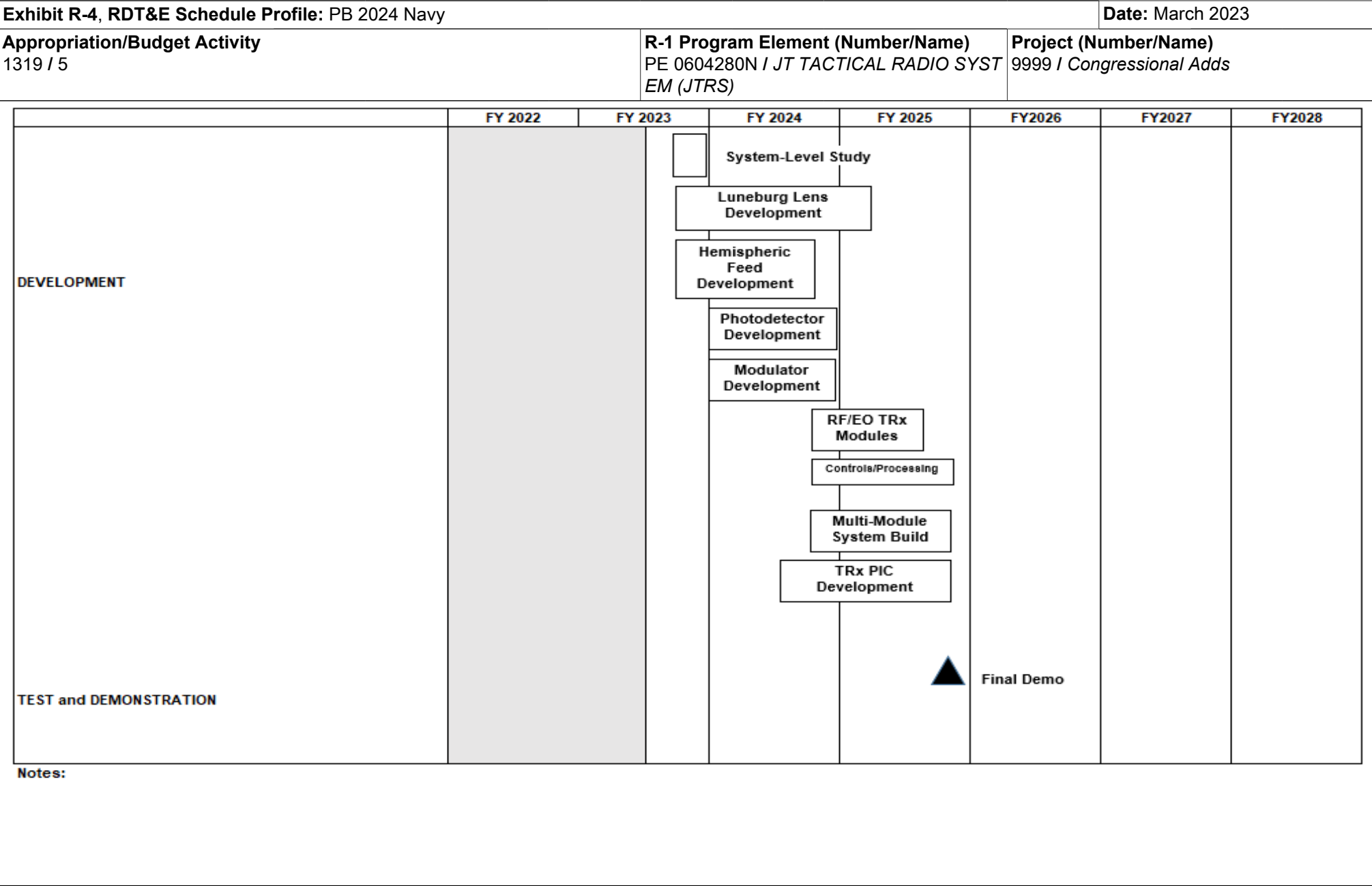
  

**D. Acquisition Strategy**  
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)						Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Product Development	C/CPFF	BASCOM : Baton Rouge, LA	0.000	0.000		4.400	Aug 2023	0.000		-		0.000	0.000	4.400	-		
Subtotal			0.000	0.000		4.400		0.000		-		0.000	0.000	4.400	N/A		
Remarks FY23 Funding to provide support for Science and Technology (S&T) Projects in support of for Satellite Terminal (transportable) Non-Geostationary (STtNG) efforts.																	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Engineering Support Services	WR	NIWC PAC : San Diego, CA	0.000	0.000		0.400	Apr 2023	0.000		-		0.000	0.000	0.400	-		
Engineering Support Services	WR	NUWC : Newport, RI	0.000	0.000		0.200	Apr 2023	0.000		-		0.000	0.000	0.200	-		
Subtotal			0.000	0.000		0.600		0.000		-		0.000	0.000	0.600	N/A		
Remarks FY23 Funding provided Engineering Support Services for Science and Technology (S&T) Projects in support of for Satellite Terminal (transportable) Non-Geostationary (STtNG) efforts.																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.000	0.000		5.000		0.000		-		0.000	0.000	5.000	N/A		
Remarks																	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604280N / JT TACTICAL RADIO SYST EM (JTRS)	Project (Number/Name) 9999 / Congressional Adds	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 9999</b>				
System Level Study	4	2023	4	2023
Lunenburg Lens Development	4	2023	2	2025
Hemisphere Feed Development	4	2023	4	2024
Photodetector Development	1	2024	4	2024
Modulator Development	1	2024	4	2024
RF/EO TRx Modules	4	2024	3	2025
Controls Processing	4	2024	4	2025
Multi-Module System	4	2024	4	2025
TRx PIC Development	3	2024	4	2025
Final Demo	4	2025	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604282N I NEXT GENERATION JAMMER (NGJ) INC II							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	328.089	72.937	135.467	250.577	-	250.577	285.195	314.968	324.332	331.808	502.111	2,545.484
3380: Next Generation Jammer Inc II	328.089	72.937	135.467	250.577	-	250.577	285.195	314.968	324.332	331.808	502.111	2,545.484
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P520												
A. Mission Description and Budget Item Justification												
<p>The Next Generation Jammer (NGJ) is the next step in the evolution of Airborne Electronic Attack (AEA) and is a critical capability necessary to address current, emerging, and evolving Electronic Warfare gaps, ensure kill chain wholeness against growing threat capabilities and capacity, keep pace with enemy threat weapon systems' advancements, and support the continuous expansion of the AEA mission areas that exceed the capability of currently fielded systems. NGJ will utilize enhanced techniques and tactics to deliver significantly improved radar and communications jamming effectiveness as well as other classified capabilities. Utilizing an Open Systems Architecture that supports software and hardware updates to rapidly counter emergent and evolving threats, NGJ is a key enabler and force multiplier for operations across the spectrum of missions defined in the Defense Strategic Guidance, including strike warfare, projecting power despite highly contested environments, and counterinsurgency/irregular warfare. NGJ will also address the shortfalls in scalability, flexibility, supportability, interoperability, availability, and capability of the existing AN/ALQ-99 Tactical Jamming System.</p>												
<p>This Program Element (PE 0604282N) supports the Next Generation Jammer - Low Band (NGJ-LB) (formerly known as Next Generation Jammer Increment 2) program. NGJ-LB will address AEA capability and sufficiency gaps against enemy threats operating in the lower frequency bands of the electromagnetic spectrum. NGJ-LB will provide the ability to effectively engage enemy threats from increased stand-off distances, employ increased capacity (number of jamming assignments) against enemy targets, and support agile employment by operators and increases survivability and lethality of 4th and 5th generation platforms and strike weapons. The NGJ-LB system will be integrated on the EA-18G tactical aircraft and will augment and then replace the legacy AN/ALQ-99 Tactical Jamming System in the low band frequencies. NGJ-LB is a Cooperative development program with Australia.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		PE 0604282N I NEXT GENERATION JAMMER (NGJ) INC II			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	146.596	301.737	352.873	-	352.873
Current President's Budget	72.937	135.467	250.577	-	250.577
Total Adjustments	-73.659	-166.270	-102.296	-	-102.296
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-166.270			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-69.433	0.000			
• SBIR/STTR Transfer	-4.226	0.000			
• Program Adjustments	0.000	0.000	-101.980	-	-101.980
• Rate/Misc Adjustments	0.000	0.000	-0.316	-	-0.316
<b><u>Change Summary Explanation</u></b>					
FY2024 Decrease of \$102.296M from PB23 to PB24 is due to the EMD contract award delay.					
Schedule: Updates reflect a new Engineering Manufacturing and Development (EMD) contract award date.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II				Project (Number/Name) 3380 / Next Generation Jammer Inc II			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3380: Next Generation Jammer Inc II	328.089	72.937	135.467	250.577	-	250.577	285.195	314.968	324.332	331.808	502.111	2,545.484
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: P520												
A. Mission Description and Budget Item Justification												
This Program Element (PE 0604282N) supports the Next Generation Jammer - Low Band (NGJ-LB) program. NGJ-LB will address Airborne Electronic Attack (AEA) capability and sufficiency gaps against enemy threats operating in the lower frequency bands of the electromagnetic spectrum. NGJ-LB will provide the ability to effectively engage enemy threats from increased stand-off distances, employ increased capacity (number of jamming assignments) against enemy targets, and support agile employment by operators and increases survivability and lethality of 4th and 5th generation platforms and strike weapons. The NGJ-LB system will be integrated on the EA-18G tactical aircraft and will augment and then replace the aging AN/ALQ-99 Tactical Jamming System in the low band frequencies.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Title: Next Generation Jammer Low Band Primary Hardware Development							0.000	65.656	144.096	0.000	144.096	
Articles:							-	-	-	-	-	
FY 2023 Plans:												
Award of the NGJ-LB Engineering Manufacturing and Development (EMD) contract focusing on pod (hardware and software) design, development, and support, and development of interim flight clearance in preparation for flight testing. Conduct the Design Familiarization Review (DFR)/Critical Design Review (CDR). Continue development of peculiar support equipment, provide data to support the EA-18G H build software configuration set and training materials in cooperation with the EA-18G aircraft Original Equipment Manufacturer (OEM).												
FY 2024 Base Plans:												
Continue execution of the NGJ-LB EMD contract focusing on pod (hardware and software) design, development, and support finalizing interim flight clearance in support of Technical Review-2 (TR-2). Conduct the Integrated Baseline Review (IBR), continue building and deliver the two (2) aeromechanical test pods, and continue building the two (2) mission systems test pods. Continue development of peculiar support equipment, provide data to support the EA-18G H build software configuration set and training materials in cooperation with the EA-18G aircraft OEM.												
FY 2024 OCO Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II		Project (Number/Name) 3380 / Next Generation Jammer Inc II	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increases from FY23 to FY24 as EMD efforts ramp up with the build of 2 aeromechanical and 2 mission systems test pods.					
Title: Next Generation Jammer Low Band Systems Engineering		31.819	25.024	43.984	0.000
Articles:		-	-	-	-
FY 2023 Plans: NGJ-LB EMD Systems engineering efforts, which will support design activities required to demonstrate DFR/ CDR compliance, system performance specification verification, Software Integration Lab testing, platform software integration at the government and contractor facilities, and prepare for Aeromechanical Flight tests and Mission Systems chamber testing. Provide Systems Engineering support to the integration and test activities.					
FY 2024 Base Plans: Continue the NGJ-LB EMD Systems Engineering efforts, which will support system performance specification verification and subsystem qualification, Software Integration Lab testing, platform software integration at government and contractor facilities, as well as Aeromechanical Flight test and Mission Systems chamber test preparation. Provide Systems Engineering support to the integration and test activities.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increases from FY23 to FY24 as NSMA related system engineering efforts increase.					
Title: Next Generation Jammer Low Band Support & Management Services		3.440	4.455	3.673	0.000
Articles:		-	-	-	-
FY 2023 Plans: Provide support and management services associated with the NGJ-LB Program.					
FY 2024 Base Plans: Continue support and management services associated with the NGJ-LB Program.					
FY 2024 OCO Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II		Project (Number/Name) 3380 / Next Generation Jammer Inc II		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreases from FY23 to FY24 due to the completion of EMD source selection in FY23.						
Title: Next Generation Jammer Low Band Integration		29.077	37.847	50.264	0.000	50.264
Articles:		-	-	-	-	-
FY 2023 Plans: Continue software development and aircraft integration efforts. Continue Software Anomaly Report analysis, implementation and test. Continue to support development of advance techniques, Jammer Training Mode and Receive-Only capabilities. Begin the development of the training materials in cooperation with the NGJ-LB pod prime contractor for EA-18G operators and maintainers and continue Platform Integration activities. Conduct mitigation activities to reduce risk of RF damage to platform. Continue non-recurring engineering in support of the NGJ-LB engineering change proposal.						
FY 2024 Base Plans: Continue software development and aircraft integration efforts, to include Software Integration Lab testing. Continue non-recurring engineering in support of the NGJ-LB engineering change proposal and begin the delivery and installation of NGJ-LB validation and verification A-kits into test aircraft. Continue Software Anomaly Report analysis, implementation and test. Continue to support development of advanced techniques, Jammer Training Mode and Receive-Only capabilities. Continue the development of the training materials in cooperation with the NGJ-LB prime contractor for EA-18G operators and maintainers and continue Platform Integration activities. Begin Integration activities in support of the wind tunnel, ground and flight testing for NGJ-LB capability. Continue mitigation activities to reduce risk of RF damage to platform. Conduct studies and analysis in support of NGJ-LB Interim Flight Clearance.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increases from FY23 to FY24 as software and aircraft integration activities increase in alignment with continued execution of the EMD contract.						
Title: Next Generation Jammer Low Band Test & Evaluation		2.001	2.485	8.560	0.000	8.560
Articles:		-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II		Project (Number/Name) 3380 / Next Generation Jammer Inc II		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>FY 2023 Plans:</b> Continue Capabilities Test and Evaluation Planning for integrated Developmental Testing (DT)/ Operational Testing (OT); continue Modeling and Simulation and risk reduction activities and required modifications of prospective test facilities. Review and approve OEM Test and Evaluation Program Plan. Monitor and review individual OEM verification test plans and reports. Initiate System Security Supply Chain Risk Management (SCRM) and Table Top assessments with the OEM.						
<b>FY 2024 Base Plans:</b> Continue Capabilities Test and Evaluation Planning for integrated DT/OT testing; continue Modeling and Simulation and risk reduction activities and required modifications of prospective test facilities. Review and approve OEM Test and Evaluation Program Plan. Monitor and review individual OEM verification test plans and reports. Continue System Security Supply Chain Risk Management (SCRM) and Table Top assessments with the OEM. Conduct Wind Tunnel Testing with OEM provided design models. Instrument and configure test aircraft. Upon delivery of aeromechanical test pods, begin test aircraft integration and ground testing events.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding increases from FY23 to FY24 as (2) Aeromechanical Test Pods deliver in Q4 FY24 and aeromechanical development testing begins.						
<b>Title:</b> Next Generation Jammer Low Band Below Threshold Reprogramming		6.600	0.000	0.000	0.000	0.000
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> N/A						
<b>FY 2024 Base Plans:</b> N/A						
<b>FY 2024 OCO Plans:</b> N/A						
Accomplishments/Planned Programs Subtotals		72.937	135.467	250.577	0.000	250.577



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II				Project (Number/Name) 3380 / Next Generation Jammer Inc II			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0591: Next Generation Jammer (NGJ)	255.393	463.146	426.396	-	426.396	455.001	448.263	480.017	440.755	5,187.134	8,319.840
Remarks											
D. Acquisition Strategy											
The NGJ-LB program is designated an ACAT-IB Major Defense Acquisition Program (MDAP), MDAP program number 520. The activity will focus on the Engineering and Manufacturing Development (EMD) phase, to develop and build (4) NGJ-LB test pods (2 aeromechanical and 2 mission systems) for developmental test and deliver (8) operational prototypes for an early fleet introduction.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMM ER (NGJ) INC II				Project (Number/Name) 3380 / Next Generation Jammer Inc II					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary H/W Dev - EMD	C/CPIF	TBD : TBD	0.000	0.000		65.656	Jun 2023	144.095	Nov 2023	-		144.095	501.964	711.715	711.715
Primary H/W Dev - BOA	SS/CPIF	TBD : TBD	0.000	0.000		0.000		0.000		-		0.000	479.801	479.801	479.801
Primary H/W Dev - Logistics	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	19.377	19.377	19.377
Aircraft Integration	WR	NAWCWD : China Lake, CA	8.189	3.211	Nov 2021	3.275	Nov 2022	3.450	Nov 2023	-		3.450	43.386	61.511	-
Aircraft Integration	SS/CPIF	Boeing : St. Louis, MO	0.000	3.595	Nov 2021	14.094	Nov 2022	16.998	Nov 2023	-		16.998	9.141	43.828	43.828
Software Integration	WR	NAWCWD : Point Mugu, CA	6.545	7.752	Nov 2021	8.907	Nov 2022	12.030	Nov 2023	-		12.030	62.493	97.727	-
Software Integration	SS/CPIF	Boeing : St. Louis, MO	11.933	10.606	Nov 2021	7.578	Nov 2022	7.871	Nov 2023	-		7.871	51.969	89.957	87.478
Software Integration	SS/CPIF	NGC : Bethpage, NY	9.067	3.914	Nov 2021	3.993	Nov 2022	7.928	Nov 2023	-		7.928	37.711	62.613	60.085
Software Integration - Development	Various	Various : Various	0.000	0.000		0.000		1.988	Jun 2024	-		1.988	15.072	17.060	-
Systems Engineering	TBD	NSMA : Arlington, VA	15.126	2.674	Jun 2022	3.836	Dec 2022	18.455	Dec 2023	-		18.455	94.182	134.273	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	56.273	12.635	Nov 2021	12.894	Nov 2022	13.540	Nov 2023	-		13.540	85.923	181.265	-
Systems Engineering	WR	NAWCWD : Point Mugu, CA	13.746	2.488	Nov 2021	3.629	Nov 2022	2.493	Nov 2023	-		2.493	14.116	36.472	-
Systems Engineering	WR	NSWC Crane : Crane, IN	10.544	2.586	Nov 2021	2.091	Nov 2022	2.950	Nov 2023	-		2.950	28.777	46.948	-
Systems Engineering	SS/CPFF	JHU : Laurel, MD	17.106	6.126	Dec 2021	2.325	Dec 2022	3.303	Dec 2023	-		3.303	20.180	49.040	49.040
Systems Engineering	Various	Various : Various	2.164	5.309	Dec 2021	0.249	Dec 2022	3.243	Dec 2023	-		3.243	24.595	35.560	-
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	160.045	0.000		0.000		0.000		-		0.000	0.000	160.045	-
FY22 Below Threshold Reprogramming	TBD	TBD : TBD	0.000	6.600	Sep 2023	0.000		0.000		-		0.000	0.000	6.600	-
Subtotal			310.738	67.496		128.527		238.344		-		238.344	1,488.687	2,233.792	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II				Project (Number/Name) 3380 / Next Generation Jammer Inc II					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks Funding increases from FY23 to FY24 as EMD efforts ramp up with the build of 2 aeromechanical and 2 mission systems test pods, as well as NSMA related activities.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Eng & Tech Svc (Non FFRDC)	Various	Various : Various	11.944	3.433	Dec 2021	4.360	Dec 2022	3.576	Dec 2023	-		3.576	27.116	50.429	50.429
Subtotal			11.944	3.433		4.360		3.576		-		3.576	27.116	50.429	N/A
Remarks Funding decreases from FY23 to FY24 due to completion of EMD source selection in FY23.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	3.305	1.872	Nov 2021	2.353	Nov 2022	6.503	Nov 2023	-		6.503	189.333	203.366	-
Developmental Test & Evaluation (DT&E)	TBD	Boeing : St. Louis, MO	0.000	0.000		0.000		1.786	Nov 2023	-		1.786	34.381	36.167	36.167
Developmental Test & Evaluation (DT&E)	TBD	Various : Various	1.409	0.000		0.000		0.000		-		0.000	0.000	1.409	1.409
Developmental Test & Evaluation (DT&E)	SS/FFP	FSC : San Diego, CA	0.646	0.129	Nov 2021	0.132	Nov 2022	0.271	Nov 2023	-		0.271	9.035	10.213	10.212
Operational Test & Evaluation (OT&E)	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	13.653	13.653	-
Subtotal			5.360	2.001		2.485		8.560		-		8.560	246.402	264.808	N/A
Remarks Funding increases from FY23 to FY24 as aeromechanical developmental testing begins.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II				Project (Number/Name) 3380 / Next Generation Jammer Inc II					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	Various : Various	0.047	0.007	Oct 2021	0.095	Oct 2022	0.097	Oct 2023	-		0.097	0.731	0.977	-
Subtotal			0.047	0.007		0.095		0.097		-		0.097	0.731	0.977	N/A
Remarks FY 2024 increases due to inflation.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			328.089	72.937		135.467		250.577		-		250.577	1,762.936	2,550.006	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

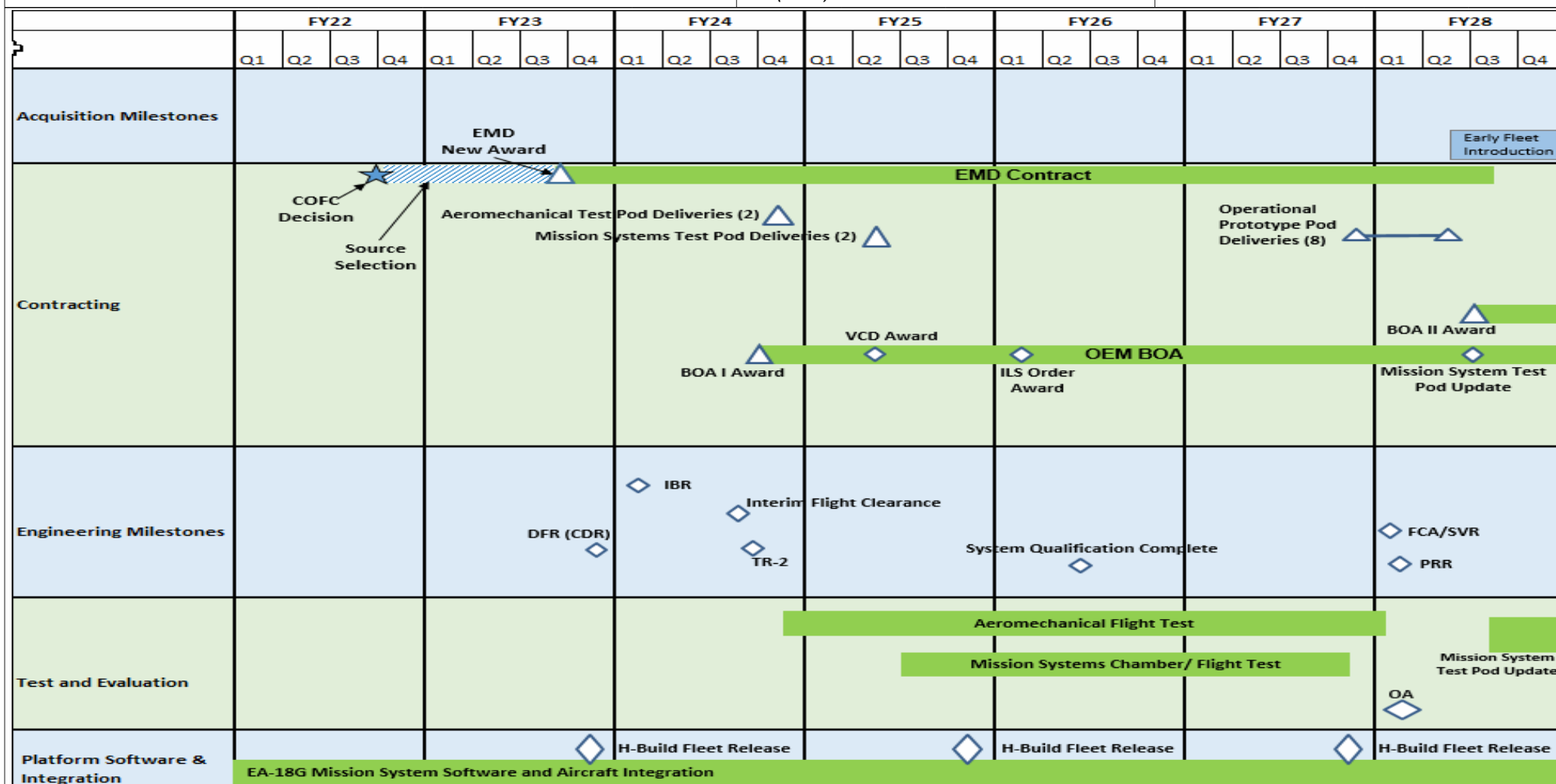
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R-1 Program Element (Number/Name)

PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II

Project (Number/Name)

3380 / Next Generation Jammer Inc II



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II

Project (Number/Name)

3380 / Next Generation Jammer Inc II

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Next Generation Jammer Low Band (Increment II)</b>				
Acquisition Milestones: Court of Federal Claims Decision	3	2022	3	2022
Acquisition Milestones: Source Selection	3	2022	3	2023
Contracting Milestones: Engineering Manufacturing and Development Contract Award	3	2023	3	2023
Contracting Milestones: Engineering Manufacturing and Development Contract	3	2023	3	2028
Contracting Milestones: Aeromechanical Test Pod Deliveries (2)	4	2024	4	2024
Contracting Milestones: Mission Systems Test Pod Deliveries (2)	2	2025	2	2025
Contracting Milestones: Basic Ordering Agreement I Award (OEM)	4	2024	4	2028
Contracting Milestones: Verification Correction Deficiencies Award	2	2025	2	2025
Contracting Milestones: Integrated Logistics Support Order award	1	2026	1	2026
Contracting Milestones: Prototype Pod Deliveries (8)	4	2027	2	2028
Contracting Milestones: Mission System Test Pod Update Order Award	3	2028	3	2028
Contracting Milestones: Basic Ordering Agreement II Award (OEM)	3	2028	4	2028
Engineering Milestones: Design Familiarization Review / Critical Design Review	4	2023	4	2023
Engineering Milestones: Integrated Baseline Review	1	2024	1	2024
Engineering Milestones: Interim Flight Clearance	3	2024	3	2024
Engineering Milestones: Technical Review 2	3	2024	3	2024
Engineering Milestones: System Qualification Complete	2	2026	2	2026
Engineering Milestones: Functional Configuration Audit / System Verification Review	1	2028	1	2028
Engineering Milestones: Production Readiness Review	1	2028	1	2028
Test and Evaluation: Aeromechanical Flight Test	4	2024	1	2028
Test and Evaluation: Mission Systems Chamber/ Flight Test	3	2025	4	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604282N / NEXT GENERATION JAMMER (NGJ) INC II	Project (Number/Name) 3380 / Next Generation Jammer Inc II		
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Test and Evaluation: Operational Assessment	1	2028	1	2028
Test and Evaluation: NGJ-LB Platform Software: H-Build Release 1	4	2023	4	2023
Test and Evaluation: NGJ-LB Platform Software: H-Build Release 2	4	2025	4	2025
Test and Evaluation: NGJ-LB Platform Software: H-Build Release 3	4	2027	4	2027
Test and Evaluation: NGJ-LB Platform Software: EA-18G Mission System Software and Aircraft Integration	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	5,197.019	321.118	345.489	453.311	-	453.311	469.226	426.331	335.068	330.575	Continuing	Continuing
1447: Surf Combatant Combat System Imp	5,126.834	314.186	329.110	445.124	-	445.124	458.121	416.322	327.380	323.091	Continuing	Continuing
3357: Aegis Training Improvement Program	70.185	6.932	6.379	8.187	-	8.187	11.105	10.009	7.688	7.484	Continuing	Continuing
9999: Congressional Adds	0.000	0.000	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 180												
Note Specific Project Increases for FY24 are summarized below:  - Aegis Capability Package (CP)2026 (\$19.365M increase over FY23) begins development to implement necessary warfighter improvements to pace the threat. - Aegis DDG 51 Class Flight III Baseline (BL) 10 Upgrades (\$48.024M increase over FY23) to support multiple concurrent efforts integrating SPY-6 radar variants as part of the New Construction and Modernization programs. In FY24, Aegis BL 10.0 (DDG 125/126) will be completing its testing efforts integrating SPY-6(V)1 Anti-Air Warfare (AAW) functionality, Aegis BL 10.1 (DDG 128 and follows) will be conducting Code Development and Integration testing of Integrated Air and Missile Defense (IAMD) capabilities with the SPY-6(V)1 radar, and Aegis BL 10.M (first ship: DDG 91) will complete early requirements mapping, system architecture, systems engineering, and early code development as required to integrate the SPY-6(V)4 radar. - Combat System Test Bed (CSTB) (\$7.541M increase over FY23) to complete 13 M&S tool updates to incorporate weapons, sensor, and threat models; execute model verification and validation and conduct analyses to enable the tool to supplement Developmental Test (DT) and Operational Test (OT) at-sea data in support of Initial Operational Test and Evaluation (IOT&E) requirements for Aegis DDG and FFG configurations. - MK-6 MOD X Computing Infrastructure (CI) (\$20.537M increase over FY23) to implement Infrastructure as a Service (IaaS) within the TI 16 MOD 0 and MOD 1 hardware configurations, enabling proliferation of ICS CI Software Deliveries. - Software Factory (\$39.000M increase over FY23) to enable refactoring Aegis and Ship Self Defense System (SSDS) legacy computer programs existing capabilities into a single Integrated Combat System (ICS) configuration. - Aegis Training Improvements and Integration (\$1.343M increase over FY23) to update Advance Training Domain (ATD) products to implement code changes within the training domain to ensure shipboard training is provided to maintain sailor readiness within the tactical environment and effectively operate the ship.												
A. Mission Description and Budget Item Justification This project delivers Aegis Combat System (ACS) upgrades and integrates new capabilities to rapidly enhance the combat effectiveness of Arleigh Burke class destroyers (DDG 51) and Constellation class frigates (FFG 62) in order to confront an increasing array of strategic, operational, and tactical challenges.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng				
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		331.820	347.233	373.469	-	373.469
Current President's Budget		321.118	345.489	453.311	-	453.311
Total Adjustments		-10.702	-1.744	79.842	-	79.842
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-11.744			
• Congressional Rescissions		-	-			
• Congressional Adds		-	10.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.022	0.000			
• SBIR/STTR Transfer		-10.680	0.000			
• Program Adjustments		0.000	0.000	75.914	-	75.914
• Rate/Misc Adjustments		0.000	0.000	3.928	-	3.928
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 9999: Congressional Adds						
Congressional Add: Enabling Condition-Based Maintenance Plus (CBM+)						
Congressional Add Subtotals for Project: 9999						
Congressional Add Totals for all Projects						
Change Summary Explanation						
The Total K1447 Control Adjustments for FY 2023-2024 are as follows:						
FY23 funding request was reduced by \$11.744M for AEGIS CP 2024 delay.						
FY24 funding request was reduced by \$7.003M for Inflation Adjustment, Total Force Management and NAVSEA adjustments.						
FY24 funding request was increased by \$13.000M for AEGIS CP 2026.						
FY24 funding request was increased by \$7.026M for Combat System Test Bed (CSTB) Model Updates.						
FY24 funding request was increased by \$39.000M for Software Factory.						
FY24 funding request was increased by \$26.137M for Infrastructure as a Service (IaaS).						
The Total K3357 Control Adjustments for FY 2023-2024 are as follows:						
FY24 funding request was increased by \$0.144M for Inflation Adjustment, Total Force Management and NAVSEA adjustments.						
FY24 funding request was increased by \$0.950M to support Fleet Training Wholeness. Funding increase develops and fields an AEGIS integrated ship and shore LVC test and training architecture supporting all phases of training to enable Unit and Strike Group, in-port and at-sea high-end fight combat systems tactical training and debrief for Aegis FFG, DDG, and CG.						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng	
<p>FY24 funding request was increased by \$1.488M to design, development, and test of Advanced Training Domain (ATD)/Internal Training Domain (ITD) modifications aligned to the ICS architecture to deliver LVC training in-stride with Combat System deliveries from the SW Factory.</p> <p>The Total 9999 Control Adjustments for FY 2023 are as follows: FY23 funding request was increased by \$10.000M for Enabling Condition-Based Maintenance Plus (CBM+).</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng				Project (Number/Name) 1447 / Surf Combatant Combat System Imp			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1447: Surf Combatant Combat System Imp	5,126.834	314.186	329.110	445.124	-	445.124	458.121	416.322	327.380	323.091	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 180												
A. Mission Description and Budget Item Justification												
AEGIS BL 10.0 provides critical warfighter improvements on AEGIS FLT III DDGs, delivering in FY24. AEGIS BL 10.0 combat system development efforts include integration of the Air and Missile Defense Radar (AMDR) SPY-6(V)1 radar while building upon AEGIS BL 9 to form the AEGIS FLT III DDG Combat System. BL 10.0 delivers previous BL 9 Common Source Library (CSL) capabilities plus SPY-6(V)1; Mk 160 Gun Combat System (GCS) concurrent engagements; Close in Weapon System (CIWS) sensor integration; Tactical Data Link (TDL) J3.4 message; and the Missile Defense Agency's Ballistic Missile Defense 6.0 (BMD 6.0) program. Fields to new construction FLT III DDGs beginning FY24 in support of Air and Missile Defense Commander (AMDC) fleet requirement.												
AEGIS BL 10.1 continues combat system development efforts to include integration of SPY-6(V)1 radar performance updates, BMD 6.0.1, MK 6 MOD 1 hardware, and Cybersecurity updates. Fields to new construction FLT III DDGs beginning FY26 in support of the AMDC fleet requirement, BMD Flight Test Missions, and Full Operational Capability (FOC).												
AEGIS BL 10.M will provide similar combat system capabilities to AEGIS FLT IIA Destroyers, integrating theSPY-6(V)4 radar and associated warfighting improvements. Fields to modernization FLT IIA DDG's in FY27.												
AEGIS BL 9.2.2 delivered in FY21 integrated previous CSL capabilities plus Surface Electronic Warfare Improvement Program (SEWIP) BLK 2 integration (auto association); MH-60R integration; Advanced Training Doman; Boundary Defense Capability; Integrated Air and Missile Defense (IAMD) mission planner; Above Water Sensor Coordinator; Agile Moondog, Sirocco, Sundog part 1, Silent Squall part 1, and Vortex; Advanced Calibration Experiment; Cyber enhancements (cyber resource services, boundary proxy service, Security Information and Event Management (SIEM), network device integrity, update manager); and BMD 5.1.3.1 (MDA-developed).												
AEGIS Capability Package (CP) 2022 builds upon previous CSL capabilities, integrating Multi Mission Signal Processor (MMSP)-Restoration (AMOD DDG only); AEGIS Linear Processing System (ALPS); High-Energy Laser with Integrated Optical-Dazzler and Surveillance (HELIOS); SM-2 Blk IIIC initial capability; Agile Firestorm; Mk 38 Mod 4 Engineering Operational Sequencing System (EOSS) integration; and BMD 5.1.4 (MDA-developed) capabilities. A variant, CP 2022-2, will deliver to DDG 91 to support its modernization test program, including first-of capabilities in FY24. Dependent on SEWIP BLK 3 Integration effort.												
AEGIS Capability Package 2024 delivers previous CSL capabilities, integrating additional warfighting improvements to include Evolved Sea Sparrow Missile (ESSM) BLK 2 Optimized, Elevated Radar Advanced Experiment (ERACE) integration, SEWIP BLK 3 Test Certification, Cooperative Engagement Capability (CEC) BLK II Integration Capability Group 3 (CIG 3), urgent fleet needs, and BMD 5.1.5 with SBT Inc 3 (MDA-developed). Dependent on SEWIP BLK 3 Integration effort.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng	Project (Number/Name) 1447 / Surf Combatant Combat System Imp				
<p>SEWIP BLK 3 Integration brings non-kinetic electronic attack capability into the AEGIS Weapons Systems inventory, expanding the number of threats the AEGIS Fleet can counter. Electronic attack is a cornerstone capability that will meet the urgent operational needs of the Fleet as the pace and complexity of emerging threats continues to escalate.</p> <p>AEGIS Capability Package 2026 delivers previous CSL capabilities plus additional warfighting improvements necessary to improve operational effectiveness and address future threats. Specific warfighting improvements will be defined in FY24.</p> <p>TASK FORCE CYBER AWAKENING assesses and delivers design improvements to AEGIS Combat System Computer Program and hardware configurations to counter emerging cyber threats. These improvements are implemented within AEGIS Combat Systems configurations currently fielded and under development and include updates to Boundary Defense Components (BDC) and other cyber capabilities.</p> <p>AEGIS BL 5.4.1 delivers NGSSR integration; Global Positioning System (GPS), Navigation, and Timing Service (GPNT)S; portions of Agile Sundog, Silent Squall, &amp; Vortex; Command and Control Processor (C2P) tech refresh; and BMD 4.1.3 (MDA-developed). Supports installations beginning in FY25.</p> <p>COMBAT SYSTEMS TEST BED (CSTB) addresses the current limitations in AEGIS Modeling and Simulation (M&amp;S) highlighted by Director of Operational Test and Evaluation (DOT&amp;E) in previous AEGIS BL's. CSTB will provide M&amp;S supporting program test and evaluation to represent conceptual systems that do not exist and existing systems which cannot be subjected to actual environments due to safety requirements or resource limitations. CSTB supports Development Test (DT) and Operational Test (OT) runs-for-record for AEGIS BL 9 DDG's, BL 10 FLT III DDG's and BL 10F FFG's.</p> <p>MK 6 MOD X (previously ICS) Computing Infrastructure (CI) delivers the developmental efforts and prototypes to enable future delivery of Infrastructure as a Service (IaaS) in support of all surface combatants (e.g., LUSV, DDG, FFG, and DDG(X)). IaaS provides hatchable hardware abstracted from software, enabling upgrade outside modernization periods (agility) to more ships (capacity). The MK 6 MOD X CI is a foundational element of the surface Navy's ICS System supporting all future ship classes. ICS Top Level Requirements (TLR) validated in the Initial Capabilities Document for the Future Surface Combatant Force. IaaS will also be delivered as an ORDALT package to in-service MK 6 MOD 0 and MOD 1 platforms.</p> <p>SW FACTORY provides a continuous integration/continuous delivery (CI/CD) pipeline for software where combat system applications are developed, tested, certified, and fielded to the Fleet at speed. The AEGIS and Ship Self Defense System (SSDS) computer programs will be re-factored into a single ICS computer program. Provides rapid combat system development, test, certification and authorization; more frequent delivery, and faster turnaround of Fleet feedback into working software and fielding to the IaaS-enabled fleet.</p>							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: AEGIS DEVELOPMENT SUPPORT			16.779	26.940	27.445	0.000	27.445
Articles:			-	-	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p><b>Description:</b> AEGIS Development Support includes the following: AEGIS Technical Design Agent (TDA), AEGIS System Engineering, Commercial Off-the-Shelf (COTS), Obsolescence Evaluation, AEGIS Development Site Operations and Maintenance, Small Business Innovation Research (SBIR), and Computer Program SW License Procurements.</p> <p><b>FY 2023 Plans:</b> Continue to provide AEGIS System Engineering evaluation of AEGIS Combat System performance and development of the AEGIS Capability Phasing Plan to ensure that warfighter improvements are implemented through future Combat System upgrades to meet emerging threats. These efforts are focused on defining future capability upgrades to the AEGIS Combat System. Conduct System Engineering review for CP 2026+ to evaluate current gaps and external weapon element updates available to address and determine most effective way to complete integration.</p> <p>Continue to provide AEGIS COTS Obsolescence mitigation including evaluation of systems currently delivered as well as those under development. These updates are focused on replacing high failure rate components in addition to monitoring and resolving obsolescence issues for all AEGIS hardware configurations. Hardware configurations include: Q-70, TI-12, TI-12H, MK 6 MOD 0 and MK 6 MOD 1.</p> <p>Continue to provide AEGIS Development Site Operation and Maintenance for the Land Based Test Sites (LBTS) to ensure that LBTS support is able to execute all planned AEGIS baseline development efforts. The LBTS include: Combat System Engineering Development Site (CSEDS), Program Generation Center (PGC), SPY-1A Test Facility (STF), Naval Systems Computing Center (NSCC), and Surface Combat System Center (SCSC). In FY23, these sites are supporting testing on BL 5, CP 2022, CP 2024, MK 6 MOD X, BL 10 FLT III DDG and BL 10 SPY-6 Integration Testing (BL 10.0, and BL 10.1).</p> <p>Continue DevSecOps environment to support Continuous Development and Continuous Integration process to include the operation and maintenance of the forge, Cloud computing environment and software licenses.</p> <p>Provide SBIR withhold in accordance with the appropriation law.</p> <p><b>FY 2024 Base Plans:</b> Continue to provide AEGIS System Engineering evaluation of AEGIS Combat System performance and development of the AEGIS Capability Phasing Plan to ensure that warfighter improvements are implemented</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
through future Combat System upgrades to meet emerging threats. These efforts are focused on defining future capability upgrades to the AEGIS Combat System. Conduct System Engineering review for CP 2026+ to evaluate current gaps and external weapon element updates available to address and determine most effective way to complete integration.						
Continue to provide AEGIS COTS Obsolescence mitigation to include evaluation of systems currently delivered as well as those under development. These updates are focused on replacing high failure rate components in addition to monitoring and resolving obsolescence issues for all AEGIS hardware configurations. Hardware configurations include: Q-70, TI-12, TI-12H, MK 6 MOD 0, MK 6 MOD 1, and MK 6 MOD X.						
Continue to provide AEGIS Development Site Operation and Maintenance for the Land Based Test Sites (LBTS) to ensure that LBTS support is able to execute all planned AEGIS baseline development efforts. The LBTS include: Combat System Engineering Development Site (CSEDS), Program Generation Center (PGC), SPY-1A Test Facility (STF), Naval Systems Computing Center (NSCC), and Surface Combat System Center (SCSC). In FY24, these sites are supporting testing on BL 5, CP 2022, CP 2024, MOD X, BL 10 FLT III DDG and BL 10 SPY-6 Integration Testing (BL 10.0, and BL 10.1).						
Continue DevSecOps environment to support Continuous Development and Continuous Integration process to include the operation and maintenance of the forge, Cloud computing environment and software licenses.						
Provide Software Factory code development in support of the Integrated Combat System (ICS).						
Provide SBIR withhold in accordance with the appropriation law.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY24 is associated with labor rate increases and expected Land-Based Test Site usage required to support all the development projects within the K1447 budget line.						
Title: AEGIS CAPABILITY PACKAGE 2022		51.400	14.700	7.200	0.000	7.200
Articles:		-	-	-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p><b>Description:</b> AEGIS Capability Package (CP) 2022 captures additional warfighting improvements to include Multi-Mission Signal Processor Restoration Hardware, SM2-IIIC Functional Capability, AEGIS Linear Processor System (ALPS), ASToCs (Agile Sundog Part 2 and Silent Squall Part 2), and MK 38 MOD 4 Gun Weapon System (GWS) Initial Capability, High Energy Laser with Optical-Dazzler and Surveillance (HELIOS), Expanded AEGIS BMD Threat Space, Hypersonic Tactical Data Information Link (TADIL) Upgrades, Electronic Attack / Electronic Protection Inc 1, Missile Power Application Non-Launch (MPAN) Inc 2, AEGIS Ashore and BMD Warfighter Improvements capabilities. Computer Program development supported AEGIS Light Off (ALO) on first ship installation on DDG 87 in the 2nd QTR FY21. Provides CP 2022-2 computer program in support of DDG 91 AEGIS Modernization and Testing in FY24.</p> <p><b>FY 2023 Plans:</b>  AEGIS CP 2022-1 Combat System Certification Panel (CSCP) Q3 FY23  AEGIS CP 2022-2 In Progress Review #5 (IPR) Q3 FY23  AEGIS CP 2022-2 In Progress Review #6 (IPR) Q4 FY23</p> <p>Continue to support the incremental design, development and integration of Capability Package 2022, entering the Capability Package Phase 4 Combat System Shipboard Testing, Final Certification and fielding. Continue to support incremental design, development and integration of the capabilities identified in the description above.</p> <p>Continue weapon system integration and combat system test events to include test planning, execution, and analysis. Continue executing integration events, maintainability events, and stability events. Finalize training curriculum and documentation updates to reflect new capabilities.</p> <p>Continue to test and make computer program updates to address various hardware configurations and Weapon System Elements. Continue development of DDG at-sea test plans in support of at-sea test event execution and post event support efforts executed to field AEGIS CP 2022 on DDG 81, 84-89, 121-124 &amp; 127 includes:  Installation and checkout of computer program  Combat System Test events 1 and 2  Discrepancy investigation and resolution  Scenario development  CSSQT planning DDG's 81, 85, 88 and 123 (FY23 CSSQTs)</p>					



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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Execute remaining AEGIS CP 2022 design decisions, Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).						
Execute all Test activities and stimulation capability required to validate system functionality system interfaces, performance requirements, multi-unit interoperability and ensure system stability.						
Execute Change Review Boards (CRB) to review computer program defects, characterize risk to system performance, and identify defect corrections.						
Conduct Combat System certification activities required to support planned FY23 Certification.						
Conduct and maintain all risk management activities required to identify, mitigate and resolve critical risk that would impact the fielding of CP 2022.						
Continue to develop criteria evaluation metrics for technical and programmatic events in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRRs) as required to support the requirements of each milestone to ensure program success.						
Execute Combat System Safety Program to address all Weapon System Explosive Safety Review Board (WSESRB) requirements.						
Provide programmatic and technical leadership in a collaborative Navy and industry environment. Identify, test and fix critical issues identified that impact the operational effectiveness of the AEGIS Combat System.						
FY 2024 Base Plans: AEGIS CP 2022-2 Combat System Ship Qualification Test (CSSQT) Q1-Q2 FY24 AEGIS CP 2022-2 Code Delivery Q3 FY24						
Continue weapon system integration and combat system test events to include test planning and analysis.						

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue executing integration events, maintainability events, and stability events.						
Continue the development of DDG at-sea test plans in support of at-sea test event execution and post event support efforts executed to field AEGIS CP 2022 on DDG 81, 89, 122,124 & 127.						
Continue to support installation and checkout of computer programs.						
Execute Change Review Boards (CRB) to review computer program defects, characterize risk to system performance, and identify defect corrections.						
Conduct and maintain all risk management activities required to identify, mitigate and resolve critical risk that would impact the fielding of CP 2022.						
Continue to develop criteria evaluation metrics for technical and programmatic events in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRRs) as required to support the requirements of each milestone to ensure program success.						
Execute Combat System Safety Program to address all Weapon System Explosive Safety Review Board (WSESRB) requirements.						
Identify, test and fix critical issues identified that impact the operational effectiveness of the AEGIS Combat System.						
Provide programmatic and technical leadership in a collaborative Navy and industry environment.						
Continued execution of development and test program. CSSQT on DDG 91 SEWIP BLK 3 system test program on DDG 91.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Decrease is a result of the phasing of the effort and final delivery of Capability Package 2022 as currently planned.						
Title: AEGIS DESTROYER BL 9 UPGRADES  Articles:  Description: Develops and delivers AEGIS BL 9 Destroyer upgrades: AEGIS BL 9 2020 includes integration of SEWIP BLK 2 (Phased - including Early Hard Kill/Soft Kill Coordination/ Advanced Off-board Electronic Warfare communication/ Radar Cued Engagement), ESSM BLK 2 Functional, NIFC-CA 2019, NIFC Collateral III, ASToC (Agile Thunder), TACAIR Phase 1, and integration of IFF M4/5 SBT Inc II CU, Mid-Term discrimination, 9-State Boost Phase Communication, Space Domain Awareness and Designated Engagement capabilities. Computer Program installed on first ship USS HOWARD (DDG 83) in FY19.  AEGIS BL 9 2021 includes SEWIP BLK 2 (Phased - Including Auto Association), Advanced Training Domain, MH-60R Integration, BOC, IAMD Mission Planner, Above Water Sensor Coordinator, Advanced Calibration Experiment (ACE), and ASToCs (Agile Sirocco, Moondog, Sundog Part 1, Silent Squall Part 1, and Vortex) and integration of Missile Power Application Non-Launch Inc I for SM-3 BLK IIA and Initial Active Sensor Bias.  FY 2023 Plans: N/A  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A		19.500 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: AEGIS CAPABILITY PACKAGE 2024  Articles:  Description: AEGIS Capability Package 2024 captures additional warfighting improvements to include ESSM BLK 2 Optimized, Elevated Radar Advanced Experiment (ERACE) integration, SEWIP BLK 3 Test Certification, CEC BLK II Capability Group 3 Integration, urgent fleet needs, and BMD 5.1.5 with SBT Inc 3 as delivered by Missile Defense Agency. Initial architecture realignment to support the Integrated Combat System. CP 2024 is dependent on SEWIP BLK 3 integration line item.		21.344 -	40.389 -	40.000 -	0.000 -	40.000 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>FY 2023 Plans:</b> AEGIS CP 2024 In-Progress Review #1 Q2 FY23 AEGIS CP 2024 In-Progress Review #2 Q4 FY23  Executing Phase 2 Code Development and Integration and supporting early Level 1-2 Testing requirements. Support incremental design, development and integration of AEGIS code for the following capabilities: Transition CSL to Red-Hat Enterprise Linux (RHL) Version 8 Operating environment MK 6 MOD 1 integration - updated computing infrastructure ESSM BLK 2 Optimized CEC BLK 2 Capability Group 3 ERACE SEWIP BLK 3 Test Certification Urgent fleet needs (Software Updates)  Integrate BMD capabilities as delivered by MDA.  Conduct systems engineering, software engineering and program management tasks to include develop and review specifications, interface definition, code development, component level testing, element verification, and early system level integration.  Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Execute AEGIS CP 2024 design decisions, Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).  Continue to develop criteria evaluation metrics for technical and programmatic events in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRRs) as required to support the requirements of each milestone to ensure program success. Provide programmatic and technical leadership in a collaborative Navy and industry environment.					
<b>FY 2024 Base Plans:</b> CP 2024 In-Progress Review #3 Q2 FY24					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
CP 2024 In-Progress Review #4 Q4 FY24						
Continue design, development and integration of Capability Package 2024 and entering the Capability Package Phase 4 Combat System Shipboard Testing, Final Certification and fielding.						
Conduct Combat System Safety Program to address all Weapon System Explosive Safety Review Board (WSESRB) requirements.						
Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Execute AEGIS CP 2024 design decisions, Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).						
Continue to develop criteria evaluation metrics for technical and programmatic events in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRRs) as required to support the requirements of each milestone to ensure program success.						
Provide programmatic and technical leadership in a collaborative Navy and industry environment.						
Planning in support of Combat System certification.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to transition from Phase 2 to Phase 3 in capability development process, Combat System and Weapon Element Integration testing.						
Title: SEWIP BLK 3 INTEGRATION		5.138	17.000	8.000	0.000	8.000
Articles:		-	-	-	-	-
Description: SEWIP BLK 3 Integration brings non-kinetic electronic attack options to The AEGIS Fleet to counter threats. Electronic attack is a cornerstone capability that will meet the urgent operational needs of the						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Fleet as the pace and complexity of emerging threats continues to escalate. This functionality will be fielded as part CP 2024.						
FY 2023 Plans: SEWIP BLK 3 integration In-Progress Review #2 Q2 FY23 (Completed) SEWIP BLK 3 integration In-Progress Review #3 Q4 FY23						
Starting SEWIP BLK 3 Combat System Requirements definition based on Interface Design Definition (IDD) and Concept of Operations (CONOPS).						
Incremental design, development and integration of AEGIS code to support SEWIP BLK 3 Integration.						
Conduct systems engineering, software engineering and program management tasks to include develop and review specifications, interface definition, code development, component level testing, element verification, and early system level integration.						
Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Participate in and evaluate Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).						
Provide support for technical and programmatic meetings in support of In Process Reviews (IPR), Software Increment Reviews (SWIR), Program Reviews, and Test Readiness Reviews (TRR) as required to support the requirements of each milestone to ensure program success.						
Support first installation on DDG 91.						
FY 2024 Base Plans: SEWIP BLK 3 integration TECHEVAL Q2 FY24. SEWIP BLK 3 integration IOT&E Q2-Q3 FY24.						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue SEWIP BLK 3 Combat System Requirements definition based on Interface Design Definition (IDD) and Concept of Operations (CONOPS).						
Continue incremental design, development and integration of AEGIS code to support SEWIP BLK 3 Integration.						
Continue to Conduct systems engineering, software engineering and program management tasks to include develop and review specifications, interface definition, code development, component level testing, element verification, and early system level integration.						
Continue to provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Participate in and evaluate Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).						
Continue to provide support for technical and programmatic meetings in support of In Process Reviews (IPR), Software Increment Reviews (SWIR), Program Reviews, and Test Readiness Reviews (TRR) as required to support the requirements of each milestone to ensure program success.						
Support SEWIP BLK 3 Technical Evaluation.						
Support SEWIP BLK 3 IOT&E Efforts in support of AEGIS integration.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is based on the requirement to finalize SEWIP BLK 3 Integration.						
Title: AEGIS CAPABILITY PACKAGE 2026		0.000	0.000	19.365	0.000	19.365
Articles:		-	-	-	-	-
Description: AEGIS Capability Package 2026 builds open previous CSL capabilities, implementing necessary warfighting improvements to improve operational effectiveness and address future threats. Specific warfighting						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
improvements will be defined in FY24 to address fleet priorities. CP 2026 will be the first delivery of AEGIS utilizing the ICS Code base.						
FY 2023 Plans: NA						
FY 2024 Base Plans: Begin Capability Package 2026 development. Leverage best practices from previous capability package development. Conduct systems engineering, software engineering and program management tasks to include develop and review specifications, interface definition, code development, component level testing, element verification, and early system level integration.						
Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Participate in and evaluate Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).						
Provide support for technical and programmatic meetings in support of In Process Reviews (IPR), Software Increment Reviews (SWIR), Program Reviews, and Test Readiness Reviews (TRR) as required to support the requirements of each milestone to ensure program success.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Increase in AEGIS Capability Package 2026 (\$19.365M) to commence development to implement and integrate necessary warfighter improvements to continue to pace the threat.						
Title: AEGIS FLT III DESTROYER BL 10 UPGRADES		139.178	146.906	194.930	0.000	194.930
Articles:		-	-	-	-	-
Description: AEGIS Baseline 10.0 provides critical warfighter improvements to the AEGIS FLT III DDG's, and delivers in FY24. AEGIS BL 10.0 combat system development efforts include integration of the Air and Missile Defense Radar (AMDR) SPY-6(V)1 Radar while building upon AEGIS BL 9 to form the AEGIS FLT						



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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>III DDG Combat System. Delivers subset of previous BL 9 Common Source Library (CSL) capabilities plus SPY-6(V)1; Mk 160 Gun Combat System (GCS) concurrent engagements; Close in Weapon System (CIWS) sensor integration; Tactical Data Link (TDL) J3.4 message; and Ballistic Missile Defense 6.0 (BMD 6.0). Fields to new construction FLT III DDG beginning FY24 in support of Air and Missile Defense Commander (AMDC) fleet requirement.</p> <p>AEGIS BL 10.1 continues combat system development efforts include integration of the SPY-6(V)1 performance updates, BMD6.0.1, MK 6 MOD 1 Hardware, and Cyber Security updates. Fields to new construction FLT III DDG beginning FY26 in support of Air and AMDC fleet requirement, BMD Flight Test Missions, and Full Operational Capability (FOC).</p> <p>AEGIS BL 10M will provide similar combat system capabilities to AEGIS FLT IIA Destroyers, integrating the SPY-6(V)4 radar and associated warfighting improvements. Fields to modernization FLT IIA DDG's in FY27</p> <p><b>FY 2023 Plans:</b> AEGIS BL 10.0 In-Progress Review #8 Q1 FY23 (Completed) AEGIS BL 10.0 Engineering Assessment Q3 FY23</p> <p>Continued Site activation and integration efforts required to support AEGIS BL 10.1 Development and Integration Testing.</p> <p>SPY-6(V)1 Radar Integration within the AEGIS Combat System.</p> <p>Continue to support the integration of SPY-6(V)1 Radar and BMD 6.0 functionality including: Code development, Component level testing, element verification, early system level integration, weapon system and subsystem integration.</p> <p>Continue to support incremental design, development and integration of AEGIS code and integration for the following capabilities as part of BL 10.0/BL 10.1: SPY-6(V)1 BMD 6.0.1 MK 6 Mod 1 Cross Domain Solution</p>						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>		<b>Project (Number/Name)</b> 1447 / <i>Surf Combatant Combat System Imp</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Conduct integration events, maintainability events, and stability events.</p> <p>Update training curriculum and documentation to reflect new capabilities.</p> <p>Support Land Based testing at CSEDS to validate code development and reduce risk to Shipboard testing programs. Support Sea Trials of DDG 125.</p> <p>Develop FLT III DDG test plan to include the following: Sea Trials of DDG 125 in second QTR FY23 Initial shipboard checkout and subsequent at-sea event preparation</p> <p>Support the installation of AEGIS BL 10.0 on DDG 125 to include the following: Installation and checkout of computer program Combat System Test events 2 and 3 (BRAVO and CHARLIE Trials)</p> <p>Discrepancy investigation and resolution Scenario development</p> <p>Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test &amp; Evaluation (T&amp;E), Certification, and Subject Matter Experts (SME). Participate in and evaluate remaining AEGIS BL 10.0 design decisions, Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).</p> <p>Execution of all Test activities and stimulation capability required to validate system functionality, system interfaces, performance requirements, multi-unit interoperability and ensure system stability.</p> <p>Conduct Change Review Boards (CRB) to review computer program defects, characterize risk to system performance, and identify defect corrections.</p> <p>Conduct Combat System certification activities required to support planned FY24 Certification.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng	Project (Number/Name) 1447 / Surf Combatant Combat System Imp	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Develop and maintain risk management activities required to identify, mitigate and resolve critical risk that would impact the fielding of BL 10.0</p> <p>Continue to develop criteria metrics for technical and programmatic events in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRR) as required to support the requirements of each milestone to ensure program success.</p> <p>Conduct Combat System Safety Program to address all Weapon System Explosive Safety Review Board (WSESRB) requirements. Provide programmatic and technical leadership in a collaborative Navy and industry environment.</p> <p>Continue to evaluate and monitor DDG 125 schedule to ensure all required products are delivered to the ship to support continued shipboard testing as planned.</p> <p>Identify, test and fix critical issues identified that impact the operational effectiveness of the AEGIS Combat System.</p> <p><b><i>FY 2024 Base Plans:</i></b>  AEGIS BL 10.1 In-Progress Review #9 Q2 FY24  AEGIS BL 10.M In-Progress Review #1 Q3 FY24  AEGIS BL 10.0 Combat System Certification Panel Q4 FY24</p> <p>Continued Site activation and integration efforts required to support AEGIS BL 10.1 Development and Integration Testing.</p> <p>SPY-6(V)1 Radar Integration within the AEGIS Combat System.</p> <p>Continue to support the integration of SPY-6(V)1 Radar and BMD 6.0 functionality including: Development and review of specifications, Code development, Component level testing, Element verification, Early system level integration, weapon system and subsystem integration.</p> <p>Continue to support incremental design, development and integration of AEGIS code and integration for the following capabilities as part of BL 10.1:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
SPY-6(V)1 BMD 6.0.1 MK 6 Mod 1 Cross Domain Solution  Continue to support incremental design, development and integration of AEGIS code and integration for the following capabilities as part of BL 10.M: SPY-6(V)4  Conduct integration events, maintainability events, and stability events.  Update training curriculum and documentation to reflect new capabilities.  Support Land Based testing at CSEDS to validate code development and reduce risk to Shipboard testing programs. Support Sea Trials of DDG 128.  Execute FLT III DDG test plan to include the following: Combat System Ship's Qualification Trials (CSSQT) on DDG 125 in Q3 FY24 Sea Trials of DDG 128 in Q4 FY24 Initial shipboard checkout and subsequent at-sea event preparation  Support the installation of AEGIS BL 10.1 on DDG 128 to include the following: Installation and checkout of computer program Combat System Test events 2 and 3 (BRAVO and CHARLIE Trials) Discrepancy investigation and resolution Scenario development  Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Participate in and evaluate remaining AEGIS BL 10.1 design decisions, Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt S ys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Execution of all Test activities and stimulation capability required to validate system functionality, system interfaces, performance requirements, multi-unit interoperability and ensure system stability.						
Conduct Change Review Boards (CRB) to review computer program defects, characterize risk to system performance, and identify defect corrections.						
Conduct Combat System certification activities required to support planned FY24 Certification.						
Develop and maintain risk management activities required to identify, mitigate and resolve critical risk that would impact the fielding of BL 10.0 / BL 10.1 / BL 10.M.						
Continue to develop criteria metrics for technical and programmatic events in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRR) as required to support the requirements of each milestone to ensure program success.						
Conduct Combat System Safety Program to address all Weapon System Explosive Safety Review Board (WSESRB) requirements. Provide programmatic and technical leadership in a collaborative Navy and industry environment.						
Continue to evaluate and monitor DDG 125 schedule to ensure all required products are delivered to the ship to support continued shipboard testing as planned.						
Continue to evaluate and monitor DDG 128 schedule to ensure all required products are delivered to the ship to support AEGIS Light-Off and continued shipboard testing as planned.						
Identify, test and fix critical issues identified that impact the operational effectiveness of the AEGIS Combat System.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: AEGIS FLT III Destroyer BL 10 Upgrades (\$48.024M) to support multiple concurrent efforts involving the integration of three SPY-6 Radar variants as part of the New Construction and Modernization programs.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
In FY24, AEGIS BL 10.0 (DDG 125/126) will be completing it testing efforts integrating SPY-6(V)1 AAW Functionality, AEGIS BL 10.1 (DDG 128+) will be conducting Code Development and Integration testing SPY-6(V)1 Integrated Air and Missile Defense (IAMD), and AEGIS BL 10.M (DDG 91) will completing early system engineering, requirements mapping, system architecture, and early code development as required to integrated SPY-6(V)4.						
Title: AEGIS DESTROYER BL 5 UPGRADES		11.000	20.745	18.480	0.000	18.480
Articles:		-	-	-	-	-
Description: AEGIS BL 5.4.1 delivers NGSSR integration; Global Positioning System (GPS), Navigation, and Timing Service (GPNT)S; portions of Agile Sundog, Silent Squall, & Vortex; Command and Control Processor (C2P) tech refresh; and BMD 4.1.3 (MDA-developed). Required to support first install planned in FY25.						
FY 2023 Plans:						
BL 5.4.1 In-Progress Review #1 Q4 FY23						
Start AEGIS BL 5.4.1 code development without Low Noise Amplifier (LNA), integration, and testing to support the planned updates to bring capability to 21 BL 5 DDGs.						
Continue to support AEGIS BL 5.4.0 installations and at sea testing to validate the operational effectiveness of the upgrade Code.						
Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test & Evaluation (T&E), Certification, and Subject Matter Experts (SME). Execute AEGIS BL 5.4.1 design decisions, Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).						
Execute all Test activities and stimulation capability required to validate system functionality, system interfaces, performance requirements, multi-unit interoperability and ensure system stability.						
Support Change Review Boards (CRB) to review computer program defects, characterize risk to system performance, and identify defect corrections.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Conduct and maintain all risk management activities required to identify, mitigate and resolve critical risk that would impact the fielding of BL 5.4.1.</p> <p>Continue to develop briefs for technical and programmatic meetings in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRR) as required to support the requirements of each milestone to ensure program success.</p> <p>Execute Combat System Safety Program to address all Weapon System Explosive Safety Review Board (WSESRB) requirements.</p> <p>Support BL 5.4.0 installation on 10 ships.</p> <p><b>FY 2024 Base Plans:</b> BL 5.4.1 In-Progress Review #2 Q3 FY24</p> <p>Continued AEGIS BL 5.4.1 code development, integration, and testing to support the planned updates to bring capability to 21 BL 5 DDGs.</p> <p>Provide system engineering efforts required to support the Integrated Product Teams. Program Management Team (PMT), System Engineering Cross Product Team (SECPT), Element, Safety, Configuration Management (CM), Test &amp; Evaluation (T&amp;E), Certification, and Subject Matter Experts (SME). Participate in and evaluate remaining AEGIS BL 5.4.1 design decisions, Engineering Technical Reviews (ETR), Specification Change, Review, Implementation, and baseline governance boards and Navy Review Team (NRT).</p> <p>Execute all Test activities and stimulation capability required to validate system functionality, system interfaces, performance requirements, multi-unit interoperability and ensure system stability.</p> <p>Support Change Review Boards (CRB) to review computer program defects, characterize risk to system performance, and identify defect corrections.</p> <p>Conduct and maintain all risk management activities required to identify, mitigate and resolve critical risk that would impact the fielding of BL 5.4.1.</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue to develop briefs for technical and programmatic meetings in support of Mission Readiness Assessments (MRA), In Process Reviews (IPR), Program Reviews, and Test Readiness Reviews (TRR) as required to support the requirements of each milestone to ensure program success.					
Execute Combat System Safety Program to address all Weapon System Explosive Safety Review Board (WSESRB) requirements.					
Support BL 5.4.0 installation on 2 ships.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Aegis Baseline (BL) 5.4.1 (BMD 4.2) is a joint effort between Navy and MDA that refurbishes existing DDG AN/SPY-1 radar arrays with the installation of antenna Low Noise Amplifiers (LNAs). The program is being restructured as a result of cost growth, supply chain issues, and schedule delays for the LNA portion of the program. The software only capability enhancements will be retained and the LNA capability removed. Navy and MDA jointly realigned the LNA program to include software upgrades with no LNA hardware procurements. The restructured program will deliver to 21 Flight I/II DDGs beginning in FY25.					
Title: COMBAT SYSTEMS TEST BED (CSTB)		16.647	16.366	23.937	0.000
Articles:		-	-	-	-
Description: Combat Systems Test Bed (CSTB) is an AEGIS Modeling and Simulation (M&S) tool built to conduct high fidelity analysis for AEGIS Developmental Test (DT) and Operational Test (OT) that DOT&E highlighted in previous AEGIS baselines. CSTB models AEGIS Combat System (ACS) performance against adversary threats through the use of high-fidelity M&S, generating Objective Quality Evidence (OQE) that directly supports Director, Operational Test and Evaluation (DOT&E) evaluations of new AEGIS baselines. CSTB reduces Navy OT costs by enabling portions of AEGIS operational testing to be conducted via M&S increasing requirements coverage and avoiding the costs of targets and weapons that would ordinarily be required to conduct OT solely via live fire events. In letters dated August 9, 2013 and June 9, 2014, DOT&E has established the requirement that Navy use tactical code-based M&S (CSTB) in conjunction with live tests for AEGIS OT. IWS1 and Commander Operational Test and Evaluation Force (OPT) will continue to use CSTB for AEGIS Baseline 9 and Baseline 10 Critical Operational Issue evaluations in 2023 and beyond.					



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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>CSTB has also been used extensively to develop pre-flight performance predictions and post-flight performance reconstructions for AEGIS Baseline live fire tests since January 2015. During this time, CSTB has established a track record of accurate predictions over 185,000 missile scenarios - identifying mission-critical software defects that led directly to \$584M in cost avoidance and precluded numerous flight test failures.</p> <p>In addition to its support for AEGIS BL9/10 OT and flight test predictions, CSTB is also critical to Frigate (FFG) Combat System and Integrated Combat System Development. CSTB end to end Hard Kill capabilities are available to SM-2 missile models to support BL9 testing. Delivery of Hardkill/Software (HK/SK) models are planned to provide additional functionality in support of BL9, BL10, and FFG Combat System testing requirements.</p> <p><b>FY 2023 Plans:</b> Code Delivery #6 Q1 FY23 (Completed) Code Delivery #7 Q2 FY23 Code Delivery #8 Q3 FY23 CP22-1 OT Run For Record Q3 FY23</p> <p>Continue Federate development and integration of AWS, SPQ-9B, VLS, SM-2 BIIIA/B, NULKA decoy, Digital Threat models and Common Services.</p> <p>Commence Federate development and integration of ESSM Block 2, SM-6 BI (AW), NULKA decoy, CIWS, Interactive Threat models, and AAW Debris models. (6 Additional efforts).</p> <p>Continue Verification and Validation (V&amp;V) AWS, SPQ-9B, VLS, and SM-2 Block IIIA/IIIB.</p> <p>Conduct Pre and Post-Live Fire Comparison analysis in support of DDG 123 DT/OT Runs for Record.</p> <p>Conduct 2 Simulation Control Panel Readiness Reviews Boards and BL9/CP22-1 DT/OT Runs for Record (Q4FY23)</p> <p><b>FY 2024 Base Plans:</b> Code Delivery #9 Q1 FY24 Code Delivery #10 Q2 FY24</p>						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
BL10.0 OT Runs For Record Q3 FY24 Code Delivery #11 Q3 FY24						
Continued Federate development and integration of ESSM Block 2, SM-6 BI (AW), NULKA decoy, CIWS, Interactive Threat models, and BMD Debris models. Commence Federate development and integration SKCS/BAM, SM-3 Blk IB/IIA, SM-6 BIA (SBT), SLQ-32(V)6, and Lethality Models. (6 Additional efforts)						
Commence Verification and Validation (V&V) SM-6 BI (AW), SPY-6(V)1, SLQ-32(V)6, SM-3 BI/IIA, ESSM Block 2, SM-3 Blk IB/IIA, CIWS, NULKA decoy, Interactive Threat models, and AAW/BMD Debris model capabilities. (13 Additional efforts)						
Conduct Pre and Post-Live Fire Comparison analysis in support of DDG 125 DT/OT Runs for Record, FTX-23, and FTM-32.						
Conduct 2 Simulation Control Panel Readiness Reviews Boards and CSTB BL10.0 IOC M&S Runs for Record (Q3FY24).						
FFG-62 Support: Commence Federate development and integration of SPY-6(V)3 and SM-2 Blk IIIC models in support of FFG-62.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Combat System Test Bed (CSTB) (\$7.541M) to complete 13 M&S tool updates to incorporate weapons, sensor, and threat models; execute model verification and validation and conduct analyses to enable the tool to supplement Developmental Test (DT) and Operational Test (OT) at-sea data in support of Initial Operational Test and Evaluation (IOT&E) requirements for AEGIS DDG and FFG configurations.						
Title: TASK FORCE CYBER AWAKENING (TFCA)		15.000	15.164	15.330	0.000	15.330
Articles:		-	-	-	-	-
Description: Provides solutions to address AEGIS Cyber deficiencies and vulnerabilities. Solutions include the AEGIS Cyber security toolkit, file integrity checker, anti-malware, USB media detection, boundary proxy						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
service, system incident and event manager, common user interface, network device integrity, identification management, certificate management, secure boot, application whitelisting, sandbox, cross domain and daily report capabilities. These solutions will be delivered as part of planned AEGIS BL 9 and 10 updates.  <b>FY 2023 Plans:</b> In-Progress Review #14 2Q FY23 (Completed) In-Progress Review #15 4Q FY23  Continue to implement the AEGIS Cyber Roadmap which will introduce enterprise grade cyber security protection to the AEGIS Weapon System. Prepare cyber solutions for transition into DevSecOps and evaluate zero trust options. Support the evaluation of the DevOps software pipeline security from developer to ship to assess Cyber requirements coverage.  <b>FY 2024 Base Plans:</b> In-Progress Review #16 2Q FY24 In-Progress Review #17 4Q FY24  Continue to implement the AEGIS Cyber Roadmap which will introduce enterprise grade cyber security protection to the AEGIS Weapon System. Prepare cyber solutions for transition into DevSecOps and evaluate zero trust options. Support the evaluation of the DevOps software pipeline security from developer to ship to assess Cyber requirements coverage.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase is based on rates and pricing adjustments required to support planned contract actions in support of TFCA development efforts.							
Title: MK 6 MOD X COMPUTING INFRASTRUCTURE (CI) (Previously ICS)			18.200	30.900	51.437	0.000	51.437
Articles:			-	-	-	-	-
Description: Development and delivery MK 6 MOD X Computing Infrastructure (CI) and Infrastructure as a Service. The CI MK 6 MOD X and IaaS are foundational elements of the surface Navy's efforts to achieve Continuous Integration / Continuous Delivery (CI/CD) and supports all future ship classes. MK 6 MOD X replaces legacy Combat System hardware configurations enabling continuous hardware upgrades to deliver							

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
improved capability to the Fleet faster. The IaaS ORDALT will be developed to support modification of in-service MK 6 Mod 0 and Mod 1 hardware (Lead Ship DDG 123).  <b>FY 2023 Plans:</b> MK 6 MOD X Level II TDP 1Q FY23 (Completed) MK 6 MOD X In-Progress Review #3 Q2 FY 23 MK 6 MOD X In-Progress Review #4 Q4 FY 23 MK 6 MOD X Equipment Qualification Test (EQT) Support Q3 FY23 - Q1 FY24  Complete and deliver MK 6 Mod X Level II TDP. Development of MK 6 MOD X Level III TDP in support of Q1 FY24 delivery. Finalize Ship Integration Government Furnished Information (GFI) to support GFI artifacts (mounting drawings, cabinet information, cable routing data etc.) to support Computing Infrastructure delivery for AEGIS Modernization DDG 101 and 103) and new construction DDGs (DDG 140 and follow). Complete Environmental Qualification Testing (EQT) on the MK 6 MOD X cabinets.  Complete Secure Voice Communication System (SVCS) Telecommunications Electronics Material Protected from Emanating Spurious Transmission (TEMPEST) Testing and release the Report and Certification. Deliver SVCS EQT Reports.  Complete inheritance model for hardware and achieve Authority To Operate (ATO). Sites development and planning to include unclassified and classified lab for MK 6 MOD X development. Continue to mature MK 6 MOD X MBSE.  <b>FY 2024 Base Plans:</b> MK 6 Mod X Level III TDP Q1 FY24 Complete MK 6 MOD X EQT Q1 FY24 MK 6 MOD 0 Hardware Delivery Q1 FY24 MK 6 MOD X In-Progress Review #5 Q2 FY24 MK 6 Mod 0 Combat System Certification Panel Q2 FY24 MK 6 Mod 1 Test and Certification Q1 FY24 - Q3 FY25 MK 6 MOD 1 Hardware Delivery Q3 FY24 MK 6 MOD X In-Progress Review #6 Q4 FY24						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue to address Diminishing Manufacture Sources (DMS) issues identified as part of MK 6 MOD X configurations. Establish unclassified and classified lab for MK 6 MOD X development. Continue to mature MK 6 MOD X MBSE. Test and Certify virtualized AEGIS Weapon System with MK 6 MOD 0 ORDALT configuration. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase for MK-6 MOD X Computing Infrastructure (CI) (\$20.537M) to support the implementation of Infrastructure as a Service (IaaS) within the MK 6 MOD 0 and MOD 1 hardware configurations to support the future proliferation of the ICS CI Software Deliveries.						
Title: SOFTWARE (SW) FACTORY <div>Articles:</div> <b>Description:</b> Surface Force Combat System SW Factory. Provide a continuous integration/continuous delivery (CI/CD) pipeline, where CS applications are developed, tested, certified, and fielded to the Fleet at speed. AEGIS and SSDS will be re-factored into a single ICS computer program by FY2028. Provides rapid CS development, test, certification, authorization, more frequent delivery, and faster turnaround of Fleet feedback into working SW and fielding to the Infrastructure-as-a-Service (IaaS) Fleet. <b>FY 2023 Plans:</b> NA <b>FY 2024 Base Plans:</b> iL6 Cloud Development Environment established Q1 FY24 CI/CD Continuous Authority To Operate (ATO) Q3 FY24 Program Increment Demo and Planning Q4 FY24 ICS Software release Q4 FY24 ICS Reference Architecture complete Q4 FY24  Begin re-architecture of AEGIS and SSDS to ICS with the SW Factory using Agile development and management practices to include breaking down work into Program Increments. ICS re-architecture plan includes:		0.000 -	0.000 -	39.000 -	0.000 -	39.000 -

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Development of ICS Reference Architecture by allocating current combat system functions to ICS sub-domains and components Prioritization of system threads and development of corresponding functional flows. Execution of Code Convergence Plan aligned to prioritization of system threads  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase in Software Factory (\$39.000M) to support the refactoring of AEGIS and Ship Self Defense System (SSDS) legacy computer programs existing capabilities into a single Integrated Combat System (ICS) configuration.					
<b>Accomplishments/Planned Programs Subtotals</b>	314.186	329.110	445.124	0.000	445.124

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• SCN 2122: <i>DDG 51</i>	3,841.740	7,870.766	4,709.131	-	4,709.131	4,524.569	4,321.240	4,351.256	4,767.817	4,927.728	137,974.806
• OPN 0900: <i>DDG Modernization</i>	535.667	744.341	628.532	-	628.532	927.280	855.780	942.398	958.412	9,631.876	19,383.298

**Remarks**

**D. Acquisition Strategy**

Combat system improvements are implemented in Capability Packages (CP) as described in the project mission statement. After the combat system is completed and tested, the computer program and associated equipment are delivered to the new construction shipbuilders and modernization shipyards where the computer program and equipment are installed and tested along with all other elements of the shipboard combat system and associated combat support systems. The computer program is a Government Furnished Computer Program (GFCP) deliverable Combat System deliveries that certify by 2024 will be provided using the Combat System Engineering Agent (CSEA) contract, with future Integrated Combat System (ICS) deliveries developed and certified under the pending competitively awarded Systems Engineering and Software Integration (SESI) contract. The latter will utilize the SFSF for software development within the US Navy Forge ecosystem. Additional modifications to the existing contracts will address war fighting improvements as directed by Office of the Chief of Naval Operations (OPNAV). Currently PEO IWS 1.0 and IWS X has existing contracts or pending contract actions supporting all efforts defined within the Budget Exhibit. A summary of contracts and contractual actions are captured below.

AEGIS executes Capability Package development in a 4 phased approach as outlined below.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>	<b>Project (Number/Name)</b> 1447 / <i>Surf Combatant Combat System Imp</i>
<ul style="list-style-type: none"> <li>- Phase 1 Combat System Requirements definition and Specification Development</li> <li>- Phase 2 Code Development and Integration and supporting early Level 1-2 Testing requirements</li> <li>- Phase 3 Combat System and Weapon Element Integration and continuing Level 3-5 Testing</li> <li>- Phase 4 Combat System Shipboard Testing, Final Certification and fielding</li> </ul> <p>Active Major Contracts:</p> <p>N00024-13-C-5116: Competitive award to support AEGIS BL 9 2018 and follow on efforts - Period of Performance FY13-23</p> <p>N00024-23-C-5123: AEGIS Fielding and Sustainment to complete development and certification of Baseline 10.0/10.1 and Capability Packages 22 and 24, and sustain/maintain in-service AEGIS BLs - Period of Performance FY23-29</p> <p>N00024-13-C-5103: Sole source follow on to support NJ Sites - Period of Performance FY18-23</p> <p>N00024-14-C-5104: Sole source to support ship installation and test - Period of Performance FY14-23</p> <p>N00024-15-C-5151: AEGIS ship integration and test - Period of Performance FY15-25</p> <p>N00024-21-C-5100 Automated Test and Analysis (ATA) capability, FY21-26</p> <p>N00024-21-F-5114: IT Ops, Cyber, and Classified Space - Period of Performance FY21-26</p> <p>N00024-21-9-5150: Forge Classified Infrastructure - Period of Performance FY21-26</p> <p>N00024-21-9-5151: Forge Software Factory Development Teams. Period of Performance FY21-24</p> <p>N00024-21-9-5153: Forge Software Factory Development Teams. Period of Performance FY21-24</p> <p>N00024-22-9-5154: Forge Software Factory Development Teams. Period of Performance FY22-24</p> <p>N00024-22-F-5101: Black Pearl DevSecOps Pipeline. Period of Performance FY22-27</p> <p>Contract Amendments:</p> <p>N00024-13-C-5116: Sole Source extension to FY26 for systems engineering, FFG-62 and USCG to support transition out of to the Competitive SESI (currently in source selection)</p> <p>New Contracts:</p> <p>N00024-19-R-2126: Surface Combatant Software Factory - Planned Award Date MAY 2024</p> <p>N00024-22-R-5117: Surface Combatant System Engineering and Software Integration - Planned Award Date JUNE 2023</p> <p>Follow-on IT Ops, Cyber, and Classified Space - Planned Award Date APRIL 2024</p> <p>In addition, PEO IWS 1.0 leverages contracts maintained by other organizations in support AEGIS Development. These include:</p> <p>MDA-LM BMD Contract (AEGIS BL 5 2020/2023 DEV)</p> <p>NAVSEA - BAH, MANTECH, Strategic Insight, Tech Marine Business and Engility (PSS/ESS)</p> <p>JHU APL - Technical Direction Agent</p> <p>NSWC DD - Lead System Engineer</p> <p>NSWC PHD - Life cycle logistics support</p>		

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>						<b>Project (Number/Name)</b> 1447 / <i>Surf Combatant Combat System Imp</i>			

<b>Product Development (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Systems Engineering	C/CPIF	Lockheed Martin : Moorestown, NJ	3,669.036	205.049	Oct 2021	209.402	Oct 2022	253.333	Oct 2023	-		253.333	Continuing	Continuing	Continuing
Systems Engineering	SS/CPFF	APL : Baltimore, MD	180.082	16.320	Oct 2021	17.211	Oct 2022	17.301	Oct 2023	-		17.301	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Dahlgren, VA	608.061	36.614	Oct 2021	30.231	Oct 2022	40.024	Oct 2023	-		40.024	Continuing	Continuing	Continuing
Systems Engineering	SS/CPAF	BAE Systems : Rockville, MD	85.082	7.100	Oct 2021	7.382	Oct 2022	7.288	Oct 2023	-		7.288	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	Raytheon : St. Petersburg, FL	12.542	3.500	Oct 2021	8.430	Oct 2022	8.501	Oct 2023	-		8.501	0.000	32.973	-
Systems Engineering	WR	NSWC : Port Hueneme, CA	112.216	5.013	Oct 2021	12.322	Oct 2022	12.484	Oct 2023	-		12.484	Continuing	Continuing	Continuing
Systems Engineering	WR	NWAS : Corona, CA	53.725	2.684	Oct 2021	2.980	Oct 2022	2.960	Oct 2023	-		2.960	Continuing	Continuing	Continuing
Systems Engineering	WR	SPAWAR : San Diego, CA	17.840	1.254	Oct 2021	6.211	Oct 2022	6.220	Oct 2023	-		6.220	Continuing	Continuing	Continuing
Systems Engineering	C/IDIQ	TBD : TBD	223.591	22.440	Oct 2021	16.223	Oct 2022	16.332	Nov 2023	-		16.332	Continuing	Continuing	Continuing
Award fees	WR	Various : Various	10.935	0.000	Oct 2021	0.000	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	Technology Service Corporation : Silver Spring , MD	1.747	4.900	Oct 2021	9.122	Oct 2022	5.206	Nov 2023	-		5.206	0.000	20.975	-
Systems Engineering	C/IDIQ	Various : Various	0.000	0.000	Oct 2021	0.000	Oct 2022	62.250	Nov 2023	-		62.250	0.000	62.250	-
<b>Subtotal</b>			4,974.857	304.874		319.514		431.899		-		431.899	Continuing	Continuing	N/A

**Remarks**

Various Performing Activities consist of multiple performing activities with funding for each no greater than \$1 million per year. These larger performing activities include CDSA Dam Neck and NSWC/Crane.

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	Department of Interior : Boise, Idaho	48.142	1.250	Oct 2021	1.342	Oct 2022	1.345	Oct 2023	-		1.345	Continuing	Continuing	Continuing



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng						Project (Number/Name) 1447 / Surf Combatant Combat System Imp					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NAVAIR : Pax River, MD	23.225	1.804	Oct 2021	1.902	Oct 2022	1.940	Oct 2023	-		1.940	Continuing	Continuing	Continuing		
Developmental Test & Evaluation (DT&E)	Various	PMRF : Hawaii, HI	6.532	1.132	Oct 2021	1.209	Oct 2022	1.198	Oct 2023	-		1.198	0.000	10.071	-		
Subtotal			77.899	4.186		4.453		4.483		-		4.483	Continuing	Continuing	N/A		
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Management Support	SS/CPAF	Mantech : Washington DC	37.667	1.824	Oct 2021	1.902	Oct 2022	3.105	Oct 2023	-		3.105	Continuing	Continuing	Continuing		
Program Management Support	SS/CPAF	TMB : Mclean, VA	34.604	3.302	Oct 2021	3.241	Oct 2022	2.955	Oct 2023	-		2.955	Continuing	Continuing	Continuing		
Program Management Support	Various	Booz Allen Hamilton : Washington DC	1.807	0.000	Oct 2021	0.000		2.682	Oct 2023	-		2.682	0.000	4.489	-		
Subtotal			74.078	5.126		5.143		8.742		-		8.742	Continuing	Continuing	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			5,126.834	314.186		329.110		445.124		-		445.124	Continuing	Continuing	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng					Project (Number/Name) 1447 / Surf Combatant Combat System Imp				

RDT&E/N/BA-5					0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING																1447/Surface Combatant Combat System Implementation							
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AEGIS DESTROYER BL 9 UPGRADES																												
	Underway Testing																											

- PB 2023 to PB 2024 Change Summary:
- No Change

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PE 0604307N: *Surface Combatant Cmbt Sys Eng*  
Navy

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<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>
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<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt S</i> <i>ys Eng</i>
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<b>Project (Number/Name)</b>	1447 / Surf Combatant Combat System Imp
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RDT&E,N/BA-5				0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING												1447/Surface Combatant Combat System Implementation												
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CAPABILITY PACKAGE 2022	IPR #4				BL 9 2022-1 (CB-1.3) CSCP				BL 9 2022-1 (CB-1.4) CSCP																			
CAPABILITY PACKAGE 2022-1	ST&I				Underway Testing																							
CAPABILITY PACKAGE 2022-2 (DDG 91)					IPR #5				IPR #6				CSQQT				BL 9 2022-2 Delivery											
					CD				SI&T				UW Test															

- **PB 2023 to PB 2024 Change Summary:**
- Delayed BL 9 2022-1 Combat System Certification Panel from 3<sup>RD</sup> QTR FY22 to 4<sup>th</sup> QTR FY22 (CB 1.3)
- Delayed BL 9 2022-1 Combat System Certification Panel from 1<sup>ST</sup> QTR FY23 to 3<sup>rd</sup> QTR FY23 (CB 1.4)
- Added BL 9 2022-2 Efforts due to DDG 91 Unique Configuration (SEWIP)

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy															Date: March 2023				
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng					Project (Number/Name) 1447 / Surf Combatant Combat System Imp				

RDT&E/N/BA-5					0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING																1447/Surface Combatant Combat System Implementation							
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CAPABILITY PACKAGE 2024																												
					IPR #1				IPR #2				IPR #3				IPR #4				BL 9 2024 CSCP							
					Code Develop				System Test and Integration				Underway Testing															

- PB 2023 to PB 2024 Change Summary:
- Added CP 2024 In-Progress Review (IPR) #4 in 4<sup>th</sup> QTR FY24.
- Updated Combat Systems Certification Panel from 3<sup>rd</sup> QTR FY24 to 3<sup>rd</sup> QTR FY25.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy															Date: March 2023				
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng					Project (Number/Name) 1447 / Surf Combatant Combat System Imp				

RDT&E,N/BA-5					0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING																1447/Surface Combatant Combat System Implementation							
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SEWIP BLK III INTEGRATION																												

- PB 2023 to PB 2024 Change Summary:
- Delayed SEWIP TECH EVAL from 1<sup>ST</sup> QTR FY24 to Second QTR FY24.

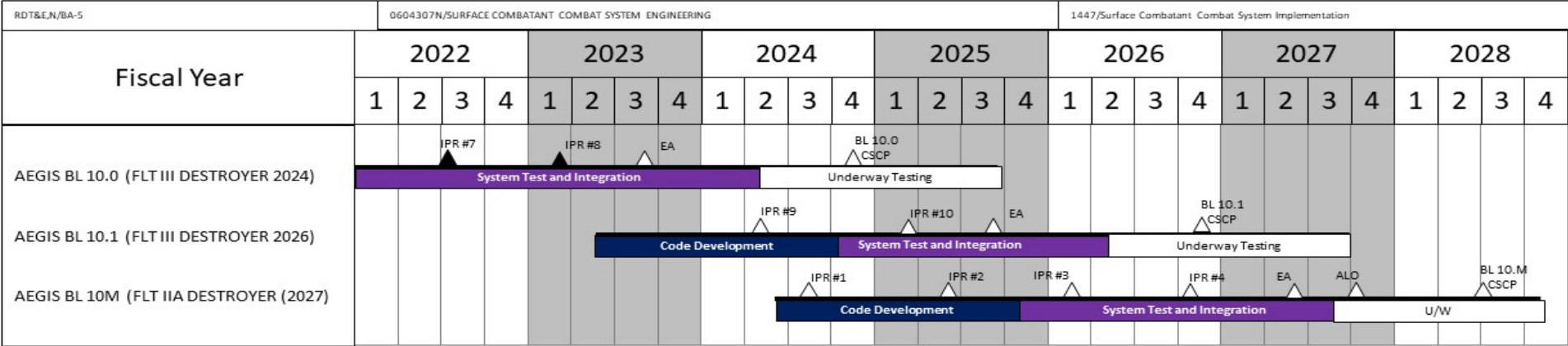
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng	Project (Number/Name) 1447 / Surf Combatant Combat System Imp	

RDT&E/N/BA-5				0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING												1447/Surface Combatant Combat System Implementation												
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CAPABILITY PACKAGE 2026																												
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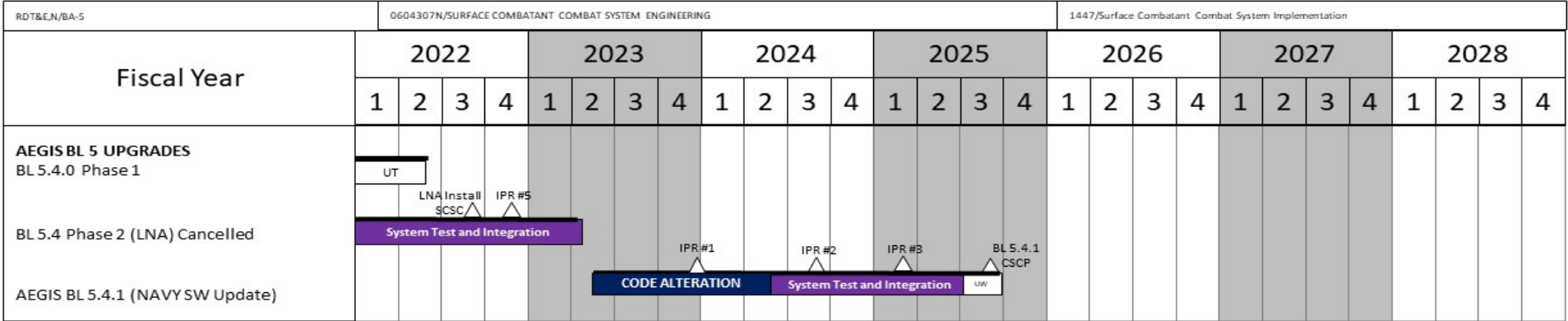
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng					Project (Number/Name) 1447 / Surf Combatant Combat System Imp				



- PB 2023 to PB 2024 Change Summary:
- Delayed BL 10.0 Combat System Certification Panel from 2<sup>nd</sup> QTR FY24 to 4<sup>th</sup> QTR FY24
- Delayed BL 10.1 Combat System Certification Panel from 2<sup>nd</sup> QTR FY26 to 4<sup>th</sup> QTR FY26

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp	



- PB 2023 to PB 2024 Change Summary:
- BL 5.2 (Phase 2 LNA) Cancelled – BOD Meeting FEB2023
- BL 5.4.1 Directed to implement Warfighting Improvements with Existing Radar Configurations



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 5		PE 0604307N / Surface Combatant Cmbt Sys Eng		1447 / Surf Combatant Combat System Imp	

RD T&E/N/BA-5					0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING																1447/Surface Combatant Combat System Implementation											
Fiscal Year					2022				2023				2024				2025				2026				2027				2028			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
COMBAT SYSTEM TEST BED (CSTB)					CD #3	CD #4	CD #5		CD #6	CD #7	CD #8		CD #9	CD #10	CD #11		CD #12	CD #13	CD #14		CD #15	CD #16	CD #17		CD #18	CD #19						
					CP22-1 DT RFR #1	CP22-1 DT RFR #2				CP22-1 OT RFR				BL 10.0 OT IOC RFR			BL 10.0 OT BMD RFR					BL 10.0 OT IAMD RFR										

- PB 2023 to PB 2024 Change Summary:
- Eliminated CP 22-1 RFR Number 3/4/5 (Effort will be complete in conjunction CP 22-1 DT RFR #4)
- Eliminated BL 10.0 DT RFR
- Delayed BL 10.0 OT IOC RFR from 1<sup>st</sup> QTR FY24 to 3<sup>rd</sup> QTR FY24
- Accelerated BL 10.0 OT BMD RFR from 3<sup>rd</sup> QTR FY26 to 4<sup>th</sup> QTR FY25
- Corrected CD Numbering (CD# 9-19)

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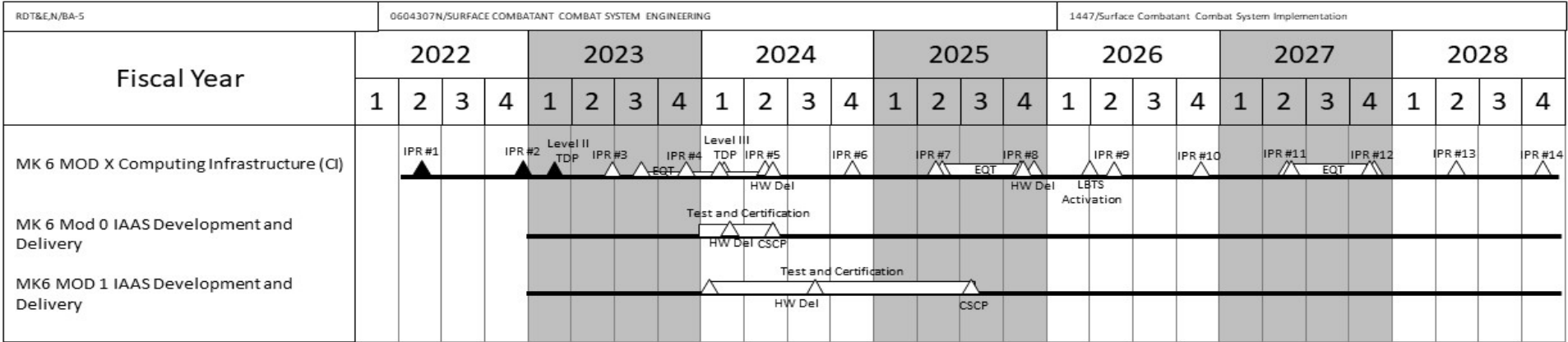
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp	

RDT&E/N/BA-5					0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING												1447/Surface Combatant Combat System Implementation											
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TASK FORCE CYBER AWAKENING	IPR #12				IPR #13					IPR #16				IPR #17					IPR #18									

- PB 2023 to PB 2024 Change Summary:
  - Added IPR #18 in 2<sup>nd</sup> QTR FY25
  - Added IPR #19 in 4<sup>th</sup> QTR FY25

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp	



- PB 2023 to PB 2024 Change Summary:
- Revised Program Title Integrated Combat System → TI16 MK 6 MOD X
- Added Hardware Factory Deliveries for TI 16 MOD X
- Added TI 16 MOD 0 / TI 16 MOD 1 IaaS Development Schedule

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604307N / Surface Combatant Cmbt Sys Eng

Project (Number/Name)  
1447 / Surf Combatant Combat System Imp

RDTE&N/BA-5					0604307N/SURFACE COMBATANT COMBAT SYSTEM ENGINEERING																1447/Surface Combatant Combat System Implementation													
Fiscal Year					2022				2023				2024				2025				2026				2027				2028					
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
SW FACTORY													iL6 Cloud Env				PI Event	ICS Reference Architecture				PI Event				PI Event				PI Event				PI Event
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- PB 2023 to PB 2024 Change Summary:
- Added Software Factory Schedule

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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy</b>			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>	<b>Project (Number/Name)</b> 1447 / <i>Surf Combatant Combat System Imp</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1447</b>				
CAPABILITY PACKAGE 2022: CP 2022-1 IN-PROGRESS REVIEW (IPR) #4	1	2022	1	2022
CAPABILITY PACKAGE 2022: CP 2022-1 COMBAT SYSTEM CERTIFICATION PANEL (CB-1.3)	4	2022	4	2022
CAPABILITY PACKAGE 2022: CP 2022-1 COMBAT SYSTEM CERTIFICATION PANEL (CB-1.4)	3	2023	3	2023
CAPABILITY PACKAGE 2022: CP 2022 IN-PROGRESS REVIEW (IPR) #5	3	2023	3	2023
CAPABILITY PACKAGE 2022: CP 2022 IN-PROGRESS REVIEW (IPR) #6	4	2023	4	2023
CAPABILITY PACKAGE 2022: Combat System Ships Qualification Trials (CSSQT)	1	2024	2	2024
CAPABILITY PACKAGE 2022: CP 2022-2 COMPUTER PROGRAM DELIIVERY	3	2024	3	2024
CAPABILITY PACKAGE 2024: CP 2024 IN-PROGRESS REVIEW (IPR) #1	2	2023	2	2023
CAPABILITY PACKAGE 2024: CP 2024 IN-PROGRESS REVIEW (IPR) #2	4	2023	4	2023
CAPABILITY PACKAGE 2024: CP 2024 IN-PROGRESS REVIEW (IPR) #3	2	2024	2	2024
CAPABILITY PACKAGE 2024: CP 2024 IN-PROGRESS REVIEW (IPR) #4	4	2024	4	2024
CAPABILITY PACKAGE 2024: CP 2024-1 COMBAT SYSTEM CERTIFICATION PANEL	3	2025	3	2025
SEWIP BLK III INTEGRATION: SEWIP BLK III IN-PROGRESS REVIEW #1	4	2022	4	2022
SEWIP BLK III INTEGRATION: SEWIP BLK III IN-PROGRESS REVIEW #2	2	2023	2	2023
SEWIP BLK III INTEGRATION: SEWIP BLK III IN-PROGRESS REVIEW #3	4	2023	4	2023
SEWIP BLK III INTEGRATION: SEWIP TECH EVAL	2	2024	2	2024
SEWIP BLK III INTEGRATION: SEWIP IOT&E	2	2024	3	2024
CAPABILITY PACKAGE 2026: CP 2026 IN-PROGRESS REVIEW (IPR) #1	2	2025	2	2025
CAPABILITY PACKAGE 2026: CP 2026 IN-PROGRESS REVIEW (IPR) #2	3	2025	3	2025

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604307N / Surface Combatant Cmbt Sys Eng

## Project (Number/Name)

1447 / Surf Combatant Combat System Imp

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CAPABILITY PACKAGE 2026: CP 2026 IN-PROGRESS REVIEW (IPR) #3	1	2026	1	2026
CAPABILITY PACKAGE 2026: CP 2026 IN-PROGRESS REVIEW (IPR) #4	4	2026	4	2026
CAPABILITY PACKAGE 2026: CP 2026-1 COMBAT SYSTEM CERTIFICATION PANEL	2	2027	2	2027
BL10.0: BL 10.0 IN-PROGRESS REVIEW (IPR) #7	3	2022	3	2022
BL10.0: BL 10.0 IN-PROGRESS REVIEW (IPR) #8	1	2023	1	2023
BL10.0: BL 10.0 ENGINEERING ASSESSMENT (EA)	3	2023	3	2023
BL10.0: BL 10.0 COMBAT SYSTEM CERTIFICATION PANEL	4	2024	4	2024
BL10.0: BL10.1: BL 10.1 IN-PROGRESS REVIEW (IPR) #9	2	2024	2	2024
BL10.0: BL10.1: BL 10.1 IN-PROGRESS REVIEW (IPR) #10	1	2025	1	2025
BL10.0: BL10.1: BL 10.1 ENGINEERING ASSESSMENT (EA)	3	2025	3	2025
BL10.0: BL10.1: BL 10.1 COMBAT SYSTEM CERTIFICATION PANEL	4	2026	4	2026
BL10.0: BL 10.M: BL 10.M IN-PROGRESS REVIEW (IPR) #1	3	2024	3	2024
BL10.0: BL 10.M: BL 10.M IN-PROGRESS REVIEW (IPR) #2	2	2025	2	2025
BL10.0: BL 10.M: BL 10.M IN-PROGRESS REVIEW (IPR) #3	1	2026	1	2026
BL10.0: BL 10.M: BL 10.M IN-PROGRESS REVIEW (IPR) #4	4	2026	4	2026
BL10.0: BL 10.M: BL 10.M ENGINEERING ASSESSMENT (EA)	2	2027	2	2027
BL10.0: BL 10.M: BL 10.M AEGIS LIGHT OFF	4	2027	4	2027
BL10.0: BL 10.M: BL 10.M COMBAT SYSTEM CERTIFICATION PANEL	3	2028	3	2028
AEGIS DESTROYER BL 5 UPGRADES: AEGIS BL 5 2023 LNA SCSC INSTALLATION	3	2022	3	2022
AEGIS DESTROYER BL 5 UPGRADES: AEGIS BL 5 2023 IN-PROGRESS REVIEW (IPR) #5	4	2022	4	2022
AEGIS DESTROYER BL 5 UPGRADES: AEGIS BL 5.4.1 IN-PROGRESS REVIEW (IPR) #1	4	2023	4	2023
AEGIS DESTROYER BL 5 UPGRADES: AEGIS BL 5.4.1 IN-PROGRESS REVIEW (IPR) #2	3	2024	3	2024

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604307N / Surface Combatant Cmbt Sys Eng

## Project (Number/Name)

1447 / Surf Combatant Combat System Imp

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AEGIS DESTROYER BL 5 UPGRADES: AEGIS BL 5.4.1 IN-PROGRESS REVIEW (IPR) #3	1	2025	1	2025
AEGIS DESTROYER BL 5 UPGRADES: AEGIS BL 5.4.1 COMBAT SYSTEM CERTIFICATION PANEL	3	2025	3	2025
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #3	1	2022	1	2022
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #4	2	2022	2	2022
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #5	3	2022	3	2022
COMBAT SYSTEM TEST BED (CTSB): CSTB CP 22-1 DT RFR #1	3	2022	3	2022
COMBAT SYSTEM TEST BED (CTSB): CSTB CP 22-1 DT RFR #2	4	2022	4	2022
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #6	1	2023	1	2023
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #7	2	2023	2	2023
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #8	3	2023	3	2023
COMBAT SYSTEM TEST BED (CTSB): CSTB CP 22-1 OT RFR	3	2023	3	2023
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #9	1	2024	1	2024
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #10	2	2024	2	2024
COMBAT SYSTEM TEST BED (CTSB): CSTB BL 10 OT IOC RFR	3	2023	3	2023
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #11	3	2024	3	2024
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #12	1	2025	1	2025
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #13	2	2025	2	2025
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #14	3	2025	3	2025
COMBAT SYSTEM TEST BED (CTSB): CSTB BL 10 OT BMD RFR	4	2025	4	2025
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #15	1	2026	1	2026
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #16	2	2026	2	2026
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #17	3	2026	3	2026
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #18	1	2027	1	2027
COMBAT SYSTEM TEST BED (CTSB): CODE DELIVERY #19	2	2027	2	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
COMBAT SYSTEM TEST BED (CTSB): CSTB BL 10 OT IAMD RFR		3	2027	3	2027
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #12		2	2022	2	2022
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #13		4	2022	4	2022
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #14		2	2023	2	2023
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #15		4	2023	4	2023
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #16		2	2024	2	2024
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #17		4	2024	4	2024
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #18		2	2025	2	2025
TASK FORCE CYBER AWAKENING (TFCA): TFCA IN-PROGRESS REVIEW #19		4	2025	4	2025
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #1		2	2022	2	2022
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #2		4	2022	4	2022
MK 6 MOD X COMPUTING INFRASTRUCTURE: LEVEL II TECHNICAL DATA PACKAGE		1	2023	1	2023
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #3		2	2023	2	2023
MK 6 MOD X COMPUTING INFRASTRUCTURE: EQUIPMENT QUALIFICATION TEST #1		3	2023	2	2024
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #4		4	2023	4	2023
MK 6 MOD X COMPUTING INFRASTRUCTURE: LEVEL III TECHNICAL DATA PACKAGE		1	2024	1	2024
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #5		2	2024	2	2024
MK 6 MOD X COMPUTING INFRASTRUCTURE: HARDWARE DELIVERY		2	2024	2	2024
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #6		4	2024	4	2024
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #7		2	2025	2	2025
MK 6 MOD X COMPUTING INFRASTRUCTURE: EQUIPMENT QUALIFICATION TEST #2		2	2025	4	2025
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #8		4	2025	4	2025



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 1447 / Surf Combatant Combat System Imp	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
MK 6 MOD X COMPUTING INFRASTRUCTURE: LAND BASED TEST SITE (LBTS) ACTIVATION	2	2026	2	2026
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #9	2	2026	2	2026
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #10	4	2026	4	2026
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #11	2	2027	2	2027
MK 6 MOD X COMPUTING INFRASTRUCTURE: EQUIPMENT QUALIFICATION TEST #3	2	2027	4	2027
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #12	4	2027	4	2027
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #13	2	2022	2	2022
MK 6 MOD X COMPUTING INFRASTRUCTURE: IN-PROGRESS REVIEW #14	4	2028	4	2028
MK 6 MOD 0 IaaS: HARDWARE DELIVERY	1	2024	1	2024
MK 6 MOD 0 IaaS: COMBAT SYSTEM CERTIFICATION PANEL	2	2024	2	2024
MK 6 MOD 1 IaaS: HARDWARE DELIVERY	3	2024	3	2024
MK 6 MOD 1 IaaS: COMBAT SYSTEM CERTIFICATION PANEL	3	2025	3	2025
SOFTWARE FACTORY: iL6 CLOUD ENVIRONMENT ESTABLISHMENT	1	2024	1	2024
SOFTWARE FACTORY: CONTINUOUS AUTHORITY TO OPERATE (ATO)	3	2024	3	2024
SOFTWARE FACTORY: PROGRAM INCREMENT DEMO 2024	4	2024	4	2024
SOFTWARE FACTORY: ICS SOFTWARE RELEASED 2024	4	2024	4	2024
SOFTWARE FACTORY: ICS REFERENCE ARCHITECTURE	4	2024	4	2024
SOFTWARE FACTORY: PROGRAM INCREMENT DEMO 2025	4	2025	4	2025
SOFTWARE FACTORY: ICS SOFTWARE RELEASED 2025	4	2025	4	2025
SOFTWARE FACTORY: PROGRAM INCREMENT DEMO 2026	4	2026	4	2026
SOFTWARE FACTORY: ICS SOFTWARE RELEASED 2026	4	2026	4	2026
SOFTWARE FACTORY: PROGRAM INCREMENT DEMO 2027	4	2027	4	2027
SOFTWARE FACTORY: ICS SOFTWARE RELEASED 2027	4	2027	4	2027
SOFTWARE FACTORY: PROGRAM INCREMENT DEMO 2028	4	2028	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng	Project (Number/Name) 1447 / Surf Combatant Combat System Imp	

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SOFTWARE FACTORY: ICS SOFTWARE RELEASED 2028	4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt S ys Eng				Project (Number/Name) 3357 / Aegis Training Improvement Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3357: Aegis Training Improvement Program	70.185	6.932	6.379	8.187	-	8.187	11.105	10.009	7.688	7.484	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The AEGIS Training Improvement project provides enhancements and upgrades to the Total Ship Training Capability (TSTC) training components within the combat system to address needs for increased training capability and functionality in conjunction with AEGIS Capability Packages. These enhancements will address current and future training requirements by implementing new functionality to enable the individual warfighter through distributed battle group events to engage in more complex training requirements to support fleet required training certification events. Capability Development and integration are related to Integrated Air and Missile Defense, Underwater, Surface, and other warfare areas. Capability enhancements and upgrades include development of re-useable common components that can be leveraged by SSDS MK2 combat systems, and/or integration of re-usable common components developed by the TSTC Battle Force Tactical Trainer (BFTT) Program and Ship Self Defense System (SSDS) MK2 TSTC Training Improvement programs to meet AEGIS combat system training requirements. TSTC provides realistic joint warfare training across the spectrum of armed conflict, realistic unit level team training in all warfare areas (e.g. NIFC-CA and BMD missions to support IAMD). TSTC provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organization, the Tactical Training Groups and C2F/C3F Fleet Synthetic Trainers (FSTs). TSTC continues to integrate and update, as new tactical capabilities are being introduced, to enable crew operator proficiency training for basic and sustainment level training events, through distributed strike group certification fleet synthetic training (FST) events and including Composite Training Unit Exercise (COMPTUEX) Fleet Synthetic Training (FST) at Sea integration into Live, Virtual and Constructive (LVC) environment. Continued Development is required to integrate new capabilities and interfaces to provide training for AEGIS and SSDS combat system capability upgrades, and to address the Fleet's Live, Virtual and Constructive (LVC) Fleet Training Wholeness initiative. Additionally, modernization is needed to support the DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan.

The Advanced Training Domain (ATD) is being developed to combine BFTT and the AEGIS Combat Training System (ACTS) into a common system that integrates with AEGIS BL 9.2.2AF, and SSDS BL 11.xAF. ATD is being hosted along with the AEGIS and SSDS combat system on TI-16AF common processing and display hardware. ATD is being designed to be the core of the Total Ship Training Capability, and is projected to be more reliable, simpler to use, and architecturally extensible to meet interoperability and capability enhancement challenges in the future.

The BFTT is being updated to maintain integration and capability enhancements developed for the Cooperative Engagement Capability (CEC), Surface Electronic Warfare Improvement Program (SEWIP), and the Carrier Tactical Support Center (CV-TSC), and SSDS Fire Control Loop Improvement Program.

Develop and integrate MH-60R simulator to enable embedded shipboard training in support of basic and sustainment training, as well as establishes the pathway to support pier-side Fleet Synthetic Training (FST) events.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng	Project (Number/Name) 3357 / Aegis Training Improvement Program				
Develop and Integrate Cooperative Engagement Capability (CEC) Enhanced Training (CET) to support basic and sustainment level training, as well as provide ability to distribute and establish CEC data link during pier-side fleet synthetic training exercises. CET is an enabler for proficiency training of NIFC-CA capability.							
Develop and integrate CEC Interim Training (CIT) capability to support pier-side fleet synthetic training events. This is an interim capability that only supports distributed training until CET is fully deployed. This establishes the communications needed to enable strike group training of advanced capabilities being delivered to AEGIS BL 9AF ships.							
Develop and integrate upgrades to Battle-Force Electronic Warfare Trainer (BEWT) to support soft kill training with NULKA.							
Develop Identification Friend or Foe (IFF) simulator to enable training of Modes 1, 2, 3A, 4, C, 5 and S on both AEGIS and SSDS ships. Capability will enable training of AEGIS and SSDS IFF Mode 5/S, and address the Mode 4 Inoculation.							
Develop and integrate commensurate training improvements to SSDS for Enhanced Sea Sparrow Missile (ESSM) and Electronic Warfare (EW) tactical improvements.							
Integrate Navy Continuous Training Environment (NCTE) networking and cyber security upgrades to maintain authorization to participate in distributed shipboard training events.							
TSTC integrated on AEGIS provides the capability to complete system and operational level testing of the combat system.							
Design, develop, and test of Advanced Training Domain (ATD)/Internal Training Domain (ITD) modifications aligned to the ICS architecture to deliver LVC training in-stride with Combat System deliveries from the SW Factory.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: AEGIS Training Improvement and Integration			5.874	5.471	7.217	0.000	7.217
Articles:			-	-	-	-	-
Description: AEGIS Total Ship Training Capability (TSTC) provides enhancements to training components and increase training functionality in conjunction with AEGIS development and integration. These enhancements will address current and future training requirements and implement new functionality to support more complex training requirements related to Underwater, Surface and other warfighter upgrades.							
FY 2023 Plans:							
- Continue development, integration and testing of ATD on Aegis with new capabilities being implemented into BL 10.X and enable leveraging for Ship Self Defense System (SSDS) BL 12.X.							
FY 2024 Base Plans:							

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 3357 / Aegis Training Improvement Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue development, integration and testing of ATD on Aegis with new capabilities being implemented into CP 24-1/BL 10.X and enable leveraging for Ship Self Defense System (SSDS) BL 12.X.</div> <div>- Design, develop, and test of Advanced Training Domain (ATD)/Internal Training Domain (ITD) modifications aligned to the ICS architecture to deliver LVC training in-stride with Combat System deliveries from the SW Factory.</div> <div><b>FY 2024 OCO Plans:</b> N/A</div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 \$1.746M increase supports design, development and test of Surface Force Training modifications within Advanced Training Domain (ATD)/Internal Training Domain (ITD) aligned to the ICS architecture. Supports Combat System test and certification of virtualized combat systems to be delivered to TI-16 Mod 0 Infrastructure as a Service (IaaS), TI-16 Mod 1 IaaS, and MK6 MOD X configurations.</div>						
<div><b>Title:</b> Fleet Training Wholeness</div> <div><b>Articles:</b></div> <div><b>FY 2023 Plans:</b> - Continue development of Advanced Training Domain (ATD) for Aegis BL 9 2022 and BL 10 2023. - Complete Strike Group Cooperative Engagement Capability (CEC) Underway capability for AEGIS Combat Systems Baselines.</div> <div><b>FY 2024 Base Plans:</b> - Continue development of Advanced Training Domain (ATD) for Aegis BL 9 and 10 variants.</div> <div><b>FY 2024 OCO Plans:</b> N/A</div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 \$0.062M increase due to efforts being performed at FY23 levels with inflation to meet fleet priorities.</div>		1.058 -	0.908 -	0.970 -	0.000 -	0.970 -
Accomplishments/Planned Programs Subtotals		6.932	6.379	8.187	0.000	8.187

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng		Project (Number/Name) 3357 / Aegis Training Improvement Program	

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RD TEN/0204571N/1427: Surface Tactical Team Trainer (STTT)	30.322	13.721	33.057	-	33.057	56.108	43.786	25.779	24.878	Continuing	Continuing

Remarks

D. Acquisition Strategy

Efforts will be completed on various contracts to support requirements updates to multiple products that will support Training Integration and Implementation within AEGIS development capabilities.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023				
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng				Project (Number/Name) 3357 / Aegis Training Improvement Program						
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Product Development	Various	Various : Various	38.596	4.457	Dec 2021	3.992	Dec 2022	5.151	Dec 2023	-		5.151	Continuing	Continuing	Continuing	
System Engineering	Various	Various : Various	26.781	1.830	Dec 2021	1.732	Dec 2022	2.231	Dec 2023	-		2.231	Continuing	Continuing	Continuing	
Subtotal			65.377	6.287		5.724		7.382		-		7.382	Continuing	Continuing	N/A	
Remarks System Engineering moved from Support to Product Development																
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Engineering Support	C/CPIF	BAH/NRL : Arlington, VA/Maryland	3.838	0.550	Dec 2021	0.555	Dec 2022	0.692	Dec 2023	-		0.692	Continuing	Continuing	Continuing	
Professional Support	C/CPIF	TMB : Washington DC	0.970	0.095	Dec 2021	0.100	Dec 2022	0.113	Dec 2023	-		0.113	Continuing	Continuing	Continuing	
Subtotal			4.808	0.645		0.655		0.805		-		0.805	Continuing	Continuing	N/A	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			70.185	6.932		6.379		8.187		-		8.187	Continuing	Continuing	N/A	
Remarks																

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604307N / Surface Combatant Cmbt Sys Eng

## Project (Number/Name)

3357 / Aegis Training Improvement Program

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Proj 3357</b>																												
BL 9 2021 COMBAT SYSTEM CERTIFICATION PANEL																												
2022 IN-PROGRESS REVIEW (IPR) #4																												
2022 COMBAT SYSTEM CERTIFICATION PANEL																												
2024 IN-PROGRESS REVIEW (IPR) #1																												
2024 IN-PROGRESS REVIEW (IPR) #2																												
2024 IN-PROGRESS REVIEW (IPR) #3																												
CP 2024-2 COMBAT SYSTEM CERTIFICATION PANEL																												
BL 10 2024 IN-PROGRESS REVIEW (IPR) #1																												
BL 10 2024 IN-PROGRESS REVIEW (IPR) #2																												
BL 10 2024 COMBAT SYSTEM CERTIFICATION PANEL																												
BL 10 2028 IN-PROGRESS REVIEW (IPR) #1																												
BL 10 2028 IN-PROGRESS REVIEW (IPR) #2																												
BL 10 2028 IN-PROGRESS REVIEW (IPR) #3																												
BL 10 2028 AEGIS LIGHT OFF																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604307N / <i>Surface Combatant Cmbt Sys Eng</i>	<b>Project (Number/Name)</b> 3357 / <i>Aegis Training Improvement Program</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3357</b>				
BL 9 2021 COMBAT SYSTEM CERTIFICATION PANEL	1	2022	1	2022
2022 IN-PROGRESS REVIEW (IPR) #4	1	2022	1	2022
2022 COMBAT SYSTEM CERTIFICATION PANEL	1	2023	1	2023
2024 IN-PROGRESS REVIEW (IPR) #1	3	2023	3	2023
2024 IN-PROGRESS REVIEW (IPR) #2	4	2023	4	2023
2024 IN-PROGRESS REVIEW (IPR) #3	2	2024	2	2024
CP 2024-2 COMBAT SYSTEM CERTIFICATION PANEL	3	2023	3	2023
BL 10 2024 IN-PROGRESS REVIEW (IPR) #1	3	2022	3	2022
BL 10 2024 IN-PROGRESS REVIEW (IPR) #2	1	2023	1	2023
BL 10 2024 COMBAT SYSTEM CERTIFICATION PANEL	4	2024	4	2024
BL 10 2028 IN-PROGRESS REVIEW (IPR) #1	3	2024	3	2024
BL 10 2028 IN-PROGRESS REVIEW (IPR) #2	2	2025	2	2025
BL 10 2028 IN-PROGRESS REVIEW (IPR) #3	1	2026	1	2026
BL 10 2028 AEGIS LIGHT OFF	4	2027	4	2027

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604307N / Surface Combatant Cmbt Sys Eng				<b>Project (Number/Name)</b> 9999 / Congressional Adds			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: Congressional Adds	0.000	0.000	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Integration and delivery of a best-of-breed capability to enable Condition Based Maintenance Plus (CBM+) and optimized mission planning will provide real-time predictive analyses of a weapon system's ability to meet Key Performance Parameters (KPPs), Key System Attributes (KSAs), and Technical Performance Measures (TPMs), for optimized combat systems corrective maintenance tactical decision making.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Congressional Add:</b> Enabling Condition-Based Maintenance Plus (CBM+)	0.000	10.000
<b>FY 2022 Accomplishments:</b> N/A		
<b>FY 2023 Plans:</b> Provide real-time shipboard readiness and mission-based analytics capability to compete and win in a high-end fight.		
<b>Congressional Adds Subtotals</b>	0.000	10.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng						Project (Number/Name) 9999 / Congressional Adds			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEM ENGINEERING	MIPR	US ARMY : Huntsville, AL	0.000	0.000		8.500	Mar 2023	0.000		-		0.000	0.000	8.500	-
SYSTEM ENGINEERING	C/BA	NSWC : Dahlgren, VA	0.000	0.000		1.500	Mar 2023	0.000		-		0.000	0.000	1.500	-
Subtotal			0.000	0.000		10.000		0.000		-		0.000	0.000	10.000	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		10.000		0.000		-		0.000	0.000	10.000	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy						Date: March 2023					
Appropriation/Budget Activity						R-1 Program Element (Number/Name)					
1319 / 5						PE 0604307N / Surface Combatant Cmbt Sys Eng					
						Project (Number/Name)					
						9999 / Congressional Adds					

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 9999																												
Model Based System Engineering Delivery																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604307N / Surface Combatant Cmbt Sys Eng	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Model Based System Engineering Delivery	4	2023	4	2023

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604311N / LPD-17 Class Systems Integration							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	37.187	0.869	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	38.056
2283: LPD-17 Class System Integration	37.187	0.869	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	38.056

**A. Mission Description and Budget Item Justification**

The LPD 17 Class ships are functional replacements for 41 ships of four classes of amphibious ships. These amphibious vehicle's tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 design includes system configurations that reduce operating and support costs and facilitate operational performance improvements. System engineering and integration efforts that began in FY97 will develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. Possible research and development investigations include improvements in Hull, Mechanical and Electrical (HM&E) systems, advanced sensors, advanced computers, advanced command and control software, advanced information system technologies, and ship based logistics support. Cost reduction and improved performance will be accomplished through sustained modeling and simulation efforts, resolutions of equipment obsolescence issues, prototype development, continued personnel reduction efforts, system performance tradeoff evaluations, and naval expeditionary warfare system engineering. Feedback from the Fleet for integrating system configurations will be accomplished through Naval Surface Warfare Centers (Philadelphia, Dahlgren, Port Hueneme, Panama City). These efforts will result in well defined specifications and drawings in system in system integration design packages that provide technical baseline for follow on ship procurements.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	0.904	0.000	0.000	-	0.000
Current President's Budget	0.869	0.000	0.000	-	0.000
Total Adjustments	-0.035	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.035	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604311N / LPD-17 Class Systems Integration				Project (Number/Name) 2283 / LPD-17 Class System Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2283: LPD-17 Class System Integration	37.187	0.869	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	38.056
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The LPD 17 Class ships are functional replacements for 41 ships of four classes of amphibious ships. These ships embark, transport, and land elements of Marine landing forces in an assault by helicopters, landing craft, and amphibious vehicles. Tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 design includes system configurations that reduce operating and support costs and facilitate operational performance improvements. System engineering and integration efforts that began in FY97 will develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. Possible research and development investigations include improvements in Hull, Mechanical and Electrical systems, advanced sensors, advanced computers, advanced command and control software, advanced information system technologies, and ship based logistics support. Cost reduction and improved performance will be accomplished through sustained modeling and simulation efforts, resolutions of equipment obsolescence issues, prototype development, continued personnel reduction efforts, system performance tradeoff evaluations, and naval expeditionary warfare system engineering. Feedback from the Fleet for integrating system configurations will be accomplished through Naval Surface Warfare Centers (Philadelphia, Dahlgren, Port Hueneme, Panama City). These efforts will result in well defined specifications and drawings in system in system integration design packages that provide technical baseline for follow on ship procurements.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Systems Engineering/Integration	0.869	0.000	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Continued Naval Expeditionary Warfare Systems Engineering efforts and integration efforts for unique LPD 17 Class systems, including efforts to resolve obsolescence issues impacting the LPD-17 class.					
<b>FY 2023 Plans:</b> N/A					
<b>FY 2024 Base Plans:</b> N/A					
<b>FY 2024 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	0.869	0.000	0.000	0.000	0.000



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy							Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604311N / LPD-17 Class Systems Integration			Project (Number/Name) 2283 / LPD-17 Class System Integration		

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• SCN/3036: LPD-17	53.682	17.739	16.520	-	16.520	0.000	0.000	0.000	0.000	0.000	21,413.011

Remarks

D. Acquisition Strategy

Continue developmental sole source efforts, improve quality and cost savings engineering studies.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604311N / LPD-17 Class Systems Int egration				Project (Number/Name) 2283 / LPD-17 Class System Integration					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering and Integration	WR	NSWC Crane : Crane, IN	13.236	0.000		0.000		0.000		-		0.000	0.000	13.236	-
Systems Engineering and Integration	C/CPFF	Raytheon Comp : San Diego, CA	2.432	0.000		0.000		0.000		-		0.000	0.000	2.432	-
LSD(X) Systems Integration (Next Gen.)	C/CPFF	CSC, Alion Science : Washington, DC	0.549	0.000		0.000		0.000		-		0.000	0.000	0.549	-
LSD(X) Systems Integration (Next Gen.)	WR	NSWC Carderock, NSWC Dahlgren : NSWC Beth, MD; NSWC Dahlgren, VA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
DAWF	Various	Various : Various	0.005	0.000		0.000		0.000		-		0.000	0.000	0.005	-
Systems Engineering and Integration	C/CPFF	Huntington Ingalls Industries : Pascagoula, MS	3.391	0.581	Jun 2022	0.000		0.000		-		0.000	0.000	3.972	-
Systems Engineering and Integration	WR	NSWC, Philadelphia : Philadelphia, PA	1.015	0.000		0.000		0.000		-		0.000	0.000	1.015	-
Systems Engineering and Integration	C/CPFF	ULTRA Communications : Vista, CA	0.435	0.000		0.000		0.000		-		0.000	0.000	0.435	-
Small Business Innovative Research	TBD	TBD : TBD	0.038	0.000		0.000		0.000		-		0.000	0.000	0.038	-
Systems Engineering and Integration	Various	ICI : TBD	0.235	0.000		0.000		0.000		-		0.000	0.000	0.235	-
Systems Engineering and Integration	WR	NSWC Carderock : Bethesda, MD	0.099	0.138	Jun 2022	0.000		0.000		-		0.000	0.000	0.237	-
Systems Engineering and Integration	WR	NSWC Panama City : Panama City, FL	0.160	0.150	Dec 2021	0.000		0.000		-		0.000	0.000	0.310	-
Subtotal			21.695	0.869		0.000		0.000		-		0.000	0.000	22.564	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604311N / LPD-17 Class Systems Integration						Project (Number/Name) 2283 / LPD-17 Class System Integration			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	OPTEVFOR : Norfolk, VA	15.492	0.000		0.000		0.000		-		0.000	0.000	15.492	-
Subtotal			15.492	0.000		0.000		0.000		-		0.000	0.000	15.492	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			37.187	0.869		0.000		0.000		-		0.000	0.000	38.056	N/A
Remarks Hull, Mechanical, and Electrical obsolescence and reliability improvements, including environmental qualification testing.															

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**Appropriation/Budget Activity**  
1319 / 5

**R-1 Program Element (Number/Name)**  
PE 0604311N / *LPD-17 Class Systems Integration*

**Project (Number/Name)**  
2283 / LPD-17 Class System Integration

[illegible]

2024DON - 0604311N - 2283

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604311N / LPD-17 Class Systems Integration	Project (Number/Name) 2283 / LPD-17 Class System Integration

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2283				
Unmanned Demonstration	1	2022	4	2022
Future Obsolescence Issue Resolution	1	2022	1	2022

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	585.570	39.366	42.881	52.211	-	52.211	19.890	12.131	10.708	10.055	0.000	772.812
1663: SDB II F-18 Integration	196.224	4.803	3.242	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	204.269
3072: Small Diameter Bomb (SDB)	389.346	34.563	39.639	52.211	-	52.211	19.890	12.131	10.708	10.055	0.000	568.543
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 439												
A. Mission Description and Budget Item Justification Small Diameter Bomb Increment II (SDB II) is an ACAT 1C joint Department of the Air Force (USAF) and Department of the Navy (DON) program, with the USAF as the lead service. The SDB II increases joint lethality in contested environments. The SDB can strike a diverse set of targets inside an adversary's air and missile defense networks to destroy mobile platforms through the weather. With increased loadout, range, and munitions effect the network enabled SDBII enhances close combat lethality in complex terrain and provides a net-centric operations capability. The BRU-61 is the Universal Armament Interface (UAI) pneumatic rack used to carry four SDB II's at one time. The threshold aircraft for the USAF is the F-15E and for the DON are the F-35B and F-35C. F/A-18 E/F is an objective platform for the DoN.  The DON has adjusted the platform integration strategy through the inclusion of F/A-18 E/F using BRU-55 to deliver the capability to the warfighter aligned to adjusted F-35 program's schedule.  BUDGET ACTIVITY JUSTIFICATION: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604329N / Small Diameter Bomb (SDB)			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	40.852	42.881	20.516	-	20.516
Current President's Budget	39.366	42.881	52.211	-	52.211
Total Adjustments	-1.486	0.000	31.695	-	31.695
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.486	0.000			
• Program Adjustments	0.000	0.000	31.535	-	31.535
• Rate/Misc Adjustments	0.000	0.000	0.160	-	0.160
<b>Change Summary Explanation</b>					
Project 3072: FY 2024 funding increased to cover increased integration costs due to the separation of F-35B and F-35C Developmental Test (DT) events. Synergies of combined F-35B and B-35C tests were reduced to meet the United States Marine Corps (USMC) acceleration of F-35B Operational Capability.					
Project 1663: FY 2024 funding decreased due to the completion of F/A-18 development efforts.					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )				Project (Number/Name) 1663 / SDB II F-18 Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1663: SDB II F-18 Integration	196.224	4.803	3.242	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	204.269
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Due to continuing delays in the F-35 program, the DON has adjusted the platform integration strategy by inclusion of Small Diameter Bomb II (SDB II) and BRU-55 on F/A-18 E/F to deliver the capability to the warfighter in light of continued F-35 program delays. This program funds the aircraft software, integration and testing required to successfully integrate SDB II and BRU-55 on the F/A-18 E/F to meet a FY 2023 Initial Operational Capability (IOC). In order to meet the IOC, testing will be limited to the F/A-18 E/F midboard stations and the flight envelope will be limited. Following limited envelope and midboard station testing, the program will test full envelope SDB II and BRU-55 on inboard stations and the SDB II and BRU-61 type II carriage system on midboard and inboard stations.

Delays are due to test asset availability and discoveries in software. Software fixes are in and now completing Crypto Mod compatibility before resuming test. Fielded capability will have full function of SDB II and will be Crypto Mod compliant.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> F/A-18 Integration	4.803	3.242	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Complete OT and integration of SDB II / BRU-55 on mid-board stations. Continue software fixes in H16 Operational Flight Program (OFP). Complete Wrap Around Test (WAT) set efforts with H18 OFP.					
<b>FY 2024 Base Plans:</b> N/A					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease of \$3.242M from FY 2023 to FY 2024 is due to completion of F/A-18 development efforts.					
<b>Accomplishments/Planned Programs Subtotals</b>	4.803	3.242	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )		Project (Number/Name) 1663 / SDB II F-18 Integration	

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• WPN/2238: Small Diameter Bomb II	33.764	100.684	65.863	-	65.863	76.101	86.738	86.487	93.233	312.192	1,134.068

Remarks

D. Acquisition Strategy

Integration of SDB II and the BRU-55 is software driven by ground and flight test requirements.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )						Project (Number/Name) 1663 / SDB II F-18 Integration			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OFP Development and Support	SS/IDIQ	Boeing : St. Louis, MO	70.575	0.770	Nov 2021	1.235	Nov 2022	0.000		-		0.000	0.000	72.580	72.580
SDB II Prime Contractor Support	SS/IDIQ	Raytheon Missile Systems : Tuscon, AZ	26.370	0.565	Feb 2022	0.267	Feb 2023	0.000		-		0.000	0.000	27.202	27.202
SDB II Integration Support	WR	NAWC AD : Patuxent River, MD	10.321	0.822	Nov 2021	0.322	Nov 2022	0.000		-		0.000	0.000	11.465	-
SDB II Software Support	WR	NAWC WD : China Lake, CA	51.010	0.752	Nov 2021	0.261	Nov 2022	0.000		-		0.000	0.000	52.023	-
BRU-61 Prime Contractor Support	SS/IDIQ	Boeing : St. Charles, MO	0.000	0.739	Jan 2022	1.043	Nov 2022	0.000		-		0.000	0.000	1.782	1.782
BRU-77 Prime Contractor Support	Various	Various : Various	11.172	0.000		0.000		0.000		-		0.000	0.000	11.172	11.172
Subtotal			169.448	3.648		3.128		0.000		-		0.000	0.000	176.224	N/A
Remarks															
FY 2023 funds continued integration on inboard stations and software fixes in H16 Operational Flight Plan (OFP). Prior year BRU Prime Contractor Support is for the BRU-77 program which was terminated. The Boeing BRU-61 will be used for future four-place rack integration on F/A-18 E/ F.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	MIPR	various : various	9.735	0.000		0.000		0.000		-		0.000	0.000	9.735	-
Developmental Test & Evaluation (DT&E)	WR	VX-23 : Patuxent River, MD	14.419	0.855	Nov 2021	0.000		0.000		-		0.000	0.000	15.274	-
Operational Test & Evaluation (OT&E)	WR	VX-9 : China Lake, CA	2.622	0.300	Nov 2021	0.114	Nov 2022	0.000		-		0.000	0.000	3.036	-
Subtotal			26.776	1.155		0.114		0.000		-		0.000	0.000	28.045	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )					Project (Number/Name) 1663 / SDB II F-18 Integration					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			196.224	4.803		3.242		0.000		-		0.000	0.000	204.269	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

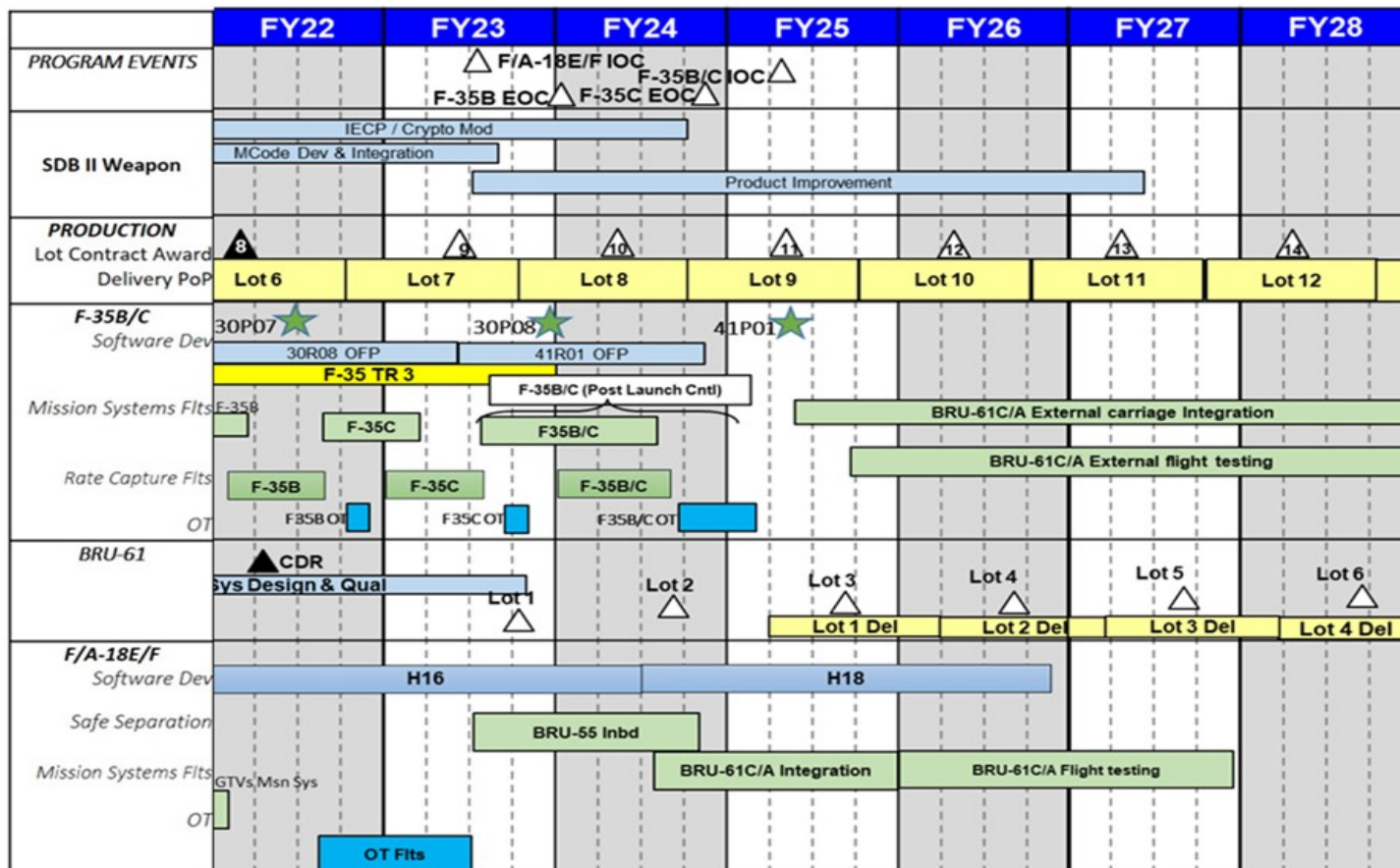
R-1 Program Element (Number/Name)

PE 0604329N / Small Diameter Bomb (SDB )

Project (Number/Name)

1663 / SDB II F-18 Integration

## SDB II Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )	Project (Number/Name) 1663 / SDB II F-18 Integration	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>F/A-18 E/F SDB II Integration</b>				
Acquisition Milestones: IOC	3	2023	3	2023
Test & Evaluation: GTV Mission System	1	2022	1	2022
Test & Evaluation: Operational Test	3	2022	2	2023
Test & Evaluation: BRU-55 Inboard Testing	3	2023	4	2024
F-18 E/F Operational Flight Program: H-16	1	2022	2	2024
F-18 E/F Operational Flight Program: H-18	3	2024	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )				Project (Number/Name) 3072 / Small Diameter Bomb (SDB)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3072: Small Diameter Bomb (SDB)	389.346	34.563	39.639	52.211	-	52.211	19.890	12.131	10.708	10.055	0.000	568.543
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 439												
A. Mission Description and Budget Item Justification												
Small Diameter Bomb Increment II (SDB II) is an ACAT 1C joint Department of the Air Force (USAF) and Department of the Navy (DON) program, with the USAF as the lead service. The SDB II increases joint lethality in contested environments. The SDB can strike a diverse set of targets inside an adversary's air and missile defense networks to destroy mobile platforms through the weather. With increased loadout, range, and munitions effect the network enabled SDBII enhances close combat lethality in complex terrain and provides a net-centric operations capability. The BRU-61 is the Universal Armament Interface (UAI) rack used to carry four SDB II's at one time. The threshold aircraft for the USAF is the F-15E and for the DON are the F-35B and F-35C.												
This Project Unit includes all funding associated with integration on the DoN threshold platforms, F-35B and F-35C. This includes the integration of the SDB II weapon with BRU-61 rack on the F-35B&C, modification to the USAF BRU-61 four-place bomb rack for F-35 and DoN shipboard environments, the integration of the Universal Armament Interface (UAI) software into the F-35 Operational Flight Program (OFP), test asset procurement, flight testing, logistics and associated software updates for the SDB II weapon system. Internal carriage is being integrated and tested to support F-35 Initial Operational Capability (IOC). External carriage will begin testing after internal carriage has been fielded.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Title: SDB II Weapon Support							26.321	29.639	35.717	0.000	35.717	
							Articles: -	-	-	-	-	
							Description: Funding provides for SDB II Engineering, Manufacturing and Development (EMD) efforts including weapon vendor support (Raytheon Missile Systems - RMS), test assets, and government support. Test articles were procured in prior years as part of a joint buy with the Air Force for a better priced quantity buy.					
FY 2023 Plans:												
FY 2023 activities include continuation of F-35C Developmental Test & Evaluation, to include multiple Rate Capture flight events and full envelope expansion of F-35B and F-35C. FY 2023 testing will include Mission Systems and Jettison testing in support of Network Enabled Weapons (NEW) F-35 Operational Flight Plan												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )		Project (Number/Name) 3072 / Small Diameter Bomb (SDB)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
(OFP) and begin SDB II Own-ship control testing. Continue Common Aircraft Armament Test Set (CAATS) software to support BRU-61. Continue development of the Navy variant BRU-61C/A four-place rack.  <b>FY 2024 Base Plans:</b> FY 2024 activities include completion of F-35B/C Post Launch control Mission Systems flight testing as well as completion of additional Rate Capture flight testing. Begin F-35B/C Operational Test. Continue development of the Navy variant BRU-61C/A four-place rack.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$6.078M from FY 2023 to FY 2024 reflects the increased testing in FY 2024. Mission Systems, Rate Capture, and OT flights will occur in FY 2024.						
<b>Title:</b> JSF Integration  <b>Articles:</b>  <b>Description:</b> Funding provided for integration of SDB II on F-35B and F-35C, specifically for Lockheed Martin to develop F-35 Operational Flight Program (OFP) software, flight missions, and support and analysis of missions.  <b>FY 2023 Plans:</b> Correction of deficiencies as a result of F-35B OT. Continue F-35 OFP integration to include Network Enabled Weapons (NEW). Begin 41R01 OFP flight testing which will include SDB II Own-ship control.  <b>FY 2024 Base Plans:</b> FY 2024 activities include completion of F-35B/C Post Launch control Mission Systems flight testing as well as completion of additional Rate Capture flight testing.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$6.494M from FY 2023 to FY 2024 is due to the increased testing in FY 2024. Rate Capture and Mission Systems flights will occur in FY 2024.		8.242 -	10.000 -	16.494 -	0.000 -	16.494 -
Accomplishments/Planned Programs Subtotals		34.563	39.639	52.211	0.000	52.211



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )				Project (Number/Name) 3072 / Small Diameter Bomb (SDB)			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RDTE,AF/0207327F: Small Diameter Bomb	31.003	32.713	37.518	-	37.518	29.855	24.805	25.371	25.768	Continuing	Continuing
• MPAF/0207327F: Small Diameter Bomb	275.934	279.006	289.904	-	289.904	325.200	308.500	278.900	312.500	Continuing	Continuing
• WPN/2238: Small Diameter Bomb II	33.764	100.684	65.863	-	65.863	76.101	86.738	86.487	93.233	312.192	1,134.068
Remarks											
The Air Force RDTE funding moved from BA-5 to BA-7 and from PE 0604329F to 0207327F beginning in FY 2021. Prior year funding is included in BA-5 PE 0604329F.											
D. Acquisition Strategy											
The SDB II acquisition strategy was to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering Engineering, Manufacturing and Development (EMD). This competition began April 17, 2006 with the signature of contracts to the competing contractors: 1) Raytheon and 2) the team of Boeing and Lockheed Martin. A Fixed Price Incentive Firm Target type contract for EMD, including Firm Fixed Price procurement options for Lots 1-3 was awarded to Raytheon August 9, 2010. Lots 4 & 5 are included in the contract, but are Not-To-Exceed options. Milestone C was approved 4 June 2015, with Lot 1 (Air Force only) awarded 12 June 2015. Lots 6 & 7 were awarded as sole source Fixed Price Incentive Firm contracts. Lot 8 was an option to the Lot 7 contract. Lot 9 will be awarded as sole source Fixed Price Incentive Firm contract, with Lot 10 as an option.											
The Navy funding will support Navy-unique efforts for SDB Increment II, such as aircraft integration, ship suitability, studies and analysis, and program management and government in-house support. These efforts will be performed on several cost-type contracts or through cost reimbursable work requests to government activities and contractors.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )						Project (Number/Name) 3072 / Small Diameter Bomb (SDB)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Primary Hardware Development - SDB II EMD	C/FPIF	Raytheon : Tucson, AZ	114.029	12.826	Mar 2022	8.000	Mar 2023	9.394	Dec 2023	-		9.394	21.506	165.755	165.755		
Aircraft Integration - JSF	C/CPFF	Lockheed Martin : Fort Worth, TX	38.113	3.902	Jan 2022	4.228	Jan 2023	8.837	Dec 2023	-		8.837	20.383	75.463	75.463		
Hardware Development - BRU-61	C/CPFF	Boeing : St. Charles, MO	22.697	3.600	Jun 2022	11.218	Jan 2023	14.976	Oct 2023	-		14.976	20.469	72.960	72.960		
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	11.238	0.000		0.000		0.000		-		0.000	0.000	11.238	-		
Subtotal			186.077	20.328		23.446		33.207		-		33.207	62.358	325.416	N/A		
Remarks																	
Primary Hardware Development to Raytheon in Tucson, AZ reflects the SDB II prime contractor and includes test assets and contractor costs to support F-35 integration.																	
Funding for Lockheed Martin F-35 includes Associate Contractor Agreements (ACA), bay modifications, logistics efforts, and adapter hardware. It does not include Operational Flight Plan (OFP), Universal Armament Interface (UAI) software coding, nor test missions which are represented in Support and Test sections, respectively.																	
Funding to Boeing for BRU-61B/A modifications required to carry SDB II on Navy and Marine Corps aircraft and environments (resulting in a BRU-61C/A). Prior year efforts were to provide data and support to the BRU-77 contractor.																	
Increases in funding from FY 2023 to FY 2024 are in support of the increased flight test program.																	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Software Development - JSF	C/CPFF	Lockheed Martin : Ft. Worth, TX	46.883	2.343	Jan 2022	2.997	Jan 2023	3.067	Dec 2023	-		3.067	6.959	62.249	62.249		
Prior year Support cost no longer funded in the FYDP	Various	Various : Various	17.410	0.000		0.000		0.000		-		0.000	0.000	17.410	-		
Subtotal			64.293	2.343		2.997		3.067		-		3.067	6.959	79.659	N/A		

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604329N / Small Diameter Bomb (SDB )						<b>Project (Number/Name)</b> 3072 / Small Diameter Bomb (SDB)			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Remarks</b> Software Development for F-35 is the UAI, OFP, and mission planning which supports the SDB II program. 30P07 will provide a limited release envelope on F-35B. 30P08 OFP will provide a full release envelope on both F-35B and F-35C.															
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	NAWC AD : Patuxent River, MD	22.797	2.353	Nov 2021	4.997	Nov 2022	4.833	Nov 2023	-		4.833	9.311	44.291	-
Operational Test & Evaluation (OT&E)	WR	NAWC WD : China Lake, CA	2.365	2.192	Nov 2021	0.000		1.169	Nov 2023	-		1.169	11.072	16.798	-
Developmental Test & Evaluation (DT&E)	WR	NAWC WD : China Lake, CA	6.412	2.000	Nov 2021	2.451	Nov 2022	2.974	Nov 2023	-		2.974	4.800	18.637	-
Developmental Test & Evaluation (DT&E)	C/CPFF	Lockheed Martin : Ft. Worth, TX	10.151	1.997	Mar 2022	2.755	Mar 2023	3.896	Dec 2023	-		3.896	6.900	25.699	25.699
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	8.049	0.000		0.000		0.000		-		0.000	0.000	8.049	-
<b>Subtotal</b>			49.774	8.542		10.203		12.872		-		12.872	32.083	113.474	N/A
<b>Remarks</b> Developmental Test (DT) and Operational Test (OT) include all aspects of the weapon system - SDB II, BRU-61, and F-35B and F-35C aircraft OFP with third party post-launch control to include Joint Terminal Attack Controller (JTAC) or other Link 16 capable aircraft. BRU-61B/A is the current version being used in flight testing to support the F-35B and F-35C Early Operational Capabilities (EOC).  Operational test for F-35C in FY 2023 is to support FY 2023 F-35C EOC using BRU-61B/A. Funding in outyears is to support OT of SDB II and F-35B and F-35C with BRU-61C/A for F-35 post-launch control and to execute SDB II / BRU-61 C/A external carriage integration on F-35B and F-35C. Initial Operational Capability (IOC) for SDB II Internal carriage is currently scheduled for FY 2025.  FY 2023 to FY 2024 increase in Developmental Test is greater than inflation due to number and type of DT events planned for FY 2024 to support the FY 2024 Post-Launch control flight testing and beginning of F-35B/C Operational Test to support FY 2025 IOC.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )				Project (Number/Name) 3072 / Small Diameter Bomb (SDB)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Services	Various	Various : Various	6.201	0.200	Nov 2021	0.253	Nov 2022	0.266	Nov 2023	-		0.266	1.501	8.421	-
Government Support	WR	NAWC WD : China Lake,CA	51.386	1.787	Nov 2021	1.633	Nov 2022	1.666	Nov 2023	-		1.666	4.009	60.481	-
Government Support	WR	Various : Various	29.115	1.333	Nov 2021	1.077	Nov 2022	1.103	Nov 2023	-		1.103	5.523	38.151	-
Travel	WR	NAVAIR : Patuxent River, MD	2.500	0.030	Oct 2021	0.030	Oct 2022	0.030	Oct 2023	-		0.030	0.123	2.713	-
Subtotal			89.202	3.350		2.993		3.065		-		3.065	11.156	109.766	N/A
Remarks															
FY 2023 to FY 2024 increases over inflation are a result of the movement of PU 1663 funding into PU 3072.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			389.346	34.563		39.639		52.211		-		52.211	112.556	628.315	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

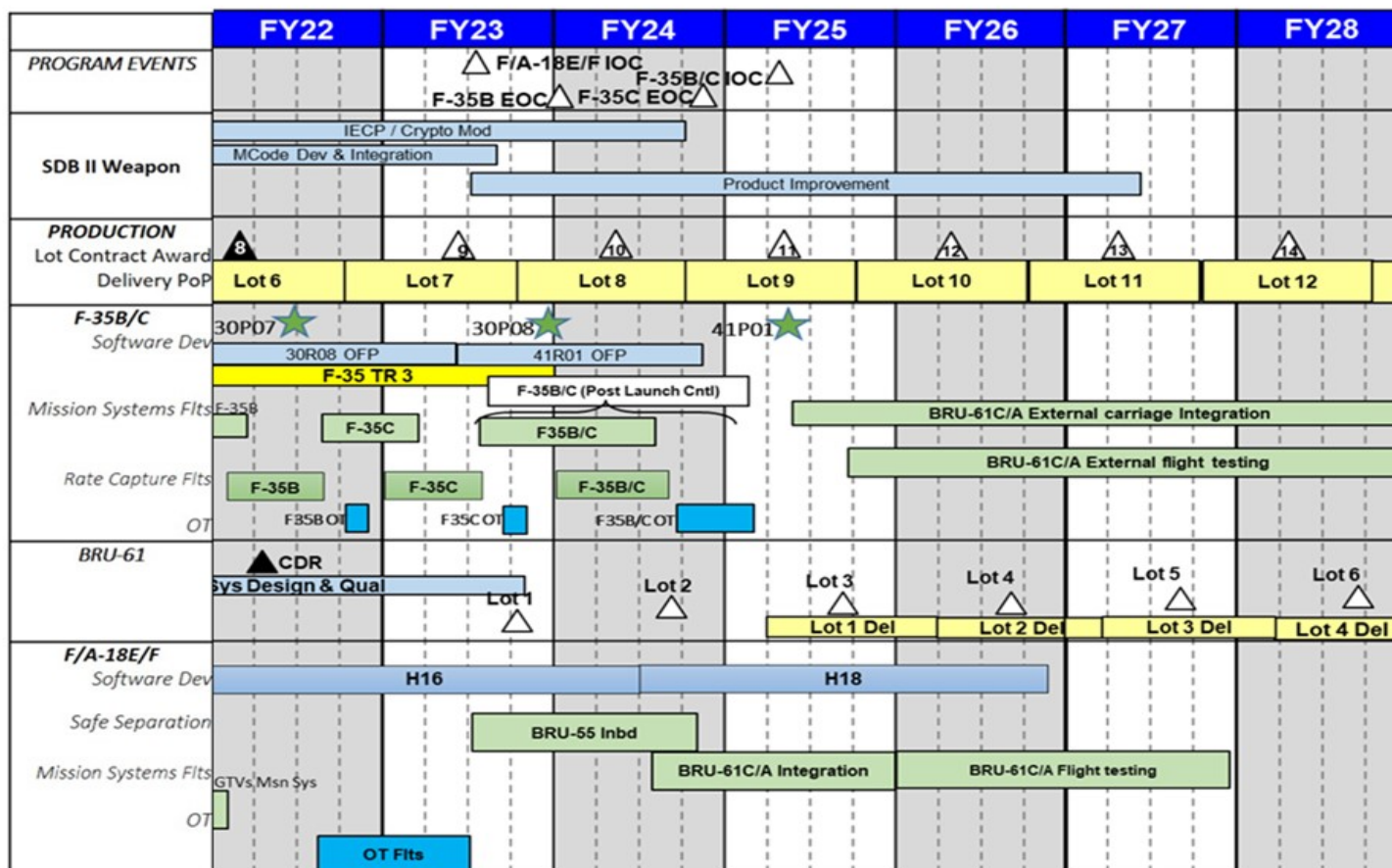
R-1 Program Element (Number/Name)

PE 0604329N / Small Diameter Bomb (SDB)  
)

Project (Number/Name)

3072 / Small Diameter Bomb (SDB)

## SDB II Program Schedule



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604329N / Small Diameter Bomb (SDB)  
)

## Project (Number/Name)

3072 / Small Diameter Bomb (SDB)

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Small Diameter Bomb II</b>				
Acquisition Milestones: Milestones: F-35B EOC	1	2024	1	2024
Acquisition Milestones: Milestones: F-35C EOC	4	2024	4	2024
Acquisition Milestones: Milestones: F-35 B/C IOC	2	2025	2	2025
Test & Evaluation: Technical Evaluation: F-35B First Mission Systems Flight	1	2022	1	2022
Test & Evaluation: Technical Evaluation: F-35B Rate Capture Flights	1	2022	3	2022
Test & Evaluation: Technical Evaluation: F-35B OT	4	2022	4	2022
Test & Evaluation: Technical Evaluation: F-35C Rate Capture Flights	1	2023	3	2023
Test & Evaluation: Technical Evaluation: F-35B/C Post Launch Control	3	2023	1	2025
Test & Evaluation: Technical Evaluation: F-35C OT	3	2023	4	2023
Test & Evaluation: Technical Evaluation: F-35B/C Mission Systems	3	2023	3	2024
Test & Evaluation: Technical Evaluation: F-35B/C Rate Capture Flights	1	2024	3	2024
Test & Evaluation: Technical Evaluation: F-35B/C OT	3	2024	1	2025
Test & Evaluation: Technical Evaluation: F-35B/C BRU-61C/A External Carriage Integration	2	2025	4	2028
Test & Evaluation: Technical Evaluation: F-35B/C BRU-61C/A External Flight Testing	3	2025	4	2028
BRU-61: System Design and Qualification: System Design and Qualification	1	2022	4	2023
BRU-61: System Design and Qualification: CDR	2	2022	2	2022
BRU-61: System Design and Qualification: BRU-61C/A F/A-18E/F Integration	3	2024	1	2026
BRU-61: System Design and Qualification: BRU-61C/A F/A-18E/F Flight Test	1	2026	4	2027
BRU-61: BRU-61 Production: Lot 1 Award	4	2023	4	2023
BRU-61: BRU-61 Production: Lot 2 Award	3	2024	3	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604329N / Small Diameter Bomb (SDB )		Project (Number/Name) 3072 / Small Diameter Bomb (SDB)	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
BRU-61: BRU-61 Production: Lot 3 Award	3	2025	3	2025
BRU-61: BRU-61 Production: Lot 4 Award	3	2026	3	2026
BRU-61: BRU-61 Production: Lot 5 Award	3	2027	3	2027
BRU-61: BRU-61 Production: Lot 6 Award	3	2028	3	2028
BRU-61: BRU-61 Deliveries: Lot 1 Del	2	2025	1	2026
BRU-61: BRU-61 Deliveries: Lot 2 Del	2	2026	1	2027
BRU-61: BRU-61 Deliveries: Lot 3 Del	2	2027	1	2028
BRU-61: BRU-61 Deliveries: Lot 4 Del	2	2028	4	2028
SDB II Production Milestones: SDB II Contract Awards: Lot 8 Award (AF and DoN)	1	2022	1	2022
SDB II Production Milestones: SDB II Contract Awards: Lot 9 Award (AF and DoN)	2	2023	2	2023
SDB II Production Milestones: SDB II Contract Awards: Lot 10 Award (AF and DoN)	2	2024	2	2024
SDB II Production Milestones: SDB II Contract Awards: Lot 11 Award (AF and DoN)	2	2025	2	2025
SDB II Production Milestones: SDB II Contract Awards: Lot 12 Award (AF and DoN)	2	2026	2	2026
SDB II Production Milestones: SDB II Contract Awards: Lot 13 Award (AF and DoN)	2	2027	2	2027
SDB II Production Milestones: SDB II Contract Awards: Lot 14 Award (AF and DoN)	2	2028	2	2028
SDB II Deliveries: Lot 6 Del	1	2022	4	2022
SDB II Deliveries: Lot 7 Del	4	2022	4	2023
SDB II Deliveries: Lot 8 Del	4	2023	4	2024
SDB II Deliveries: Lot 9 Del	4	2024	4	2025
SDB II Deliveries: Lot 10 Del	4	2025	4	2026
SDB II Deliveries: Lot 11 Del	4	2026	4	2027
SDB II Deliveries: Lot 12 Del	4	2027	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0604366N / <i>Standard Missile Improvements</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	3,235.154	341.355	309.943	418.187	-	418.187	436.301	406.018	226.269	81.976	Continuing	Continuing
0439: <i>Standard Missile Improvement</i>	1,431.842	45.710	28.948	39.173	-	39.173	34.937	37.358	14.981	14.140	Continuing	Continuing
2063: <i>SM-6 Blk IB</i>	257.303	175.378	189.204	234.761	-	234.761	228.327	150.497	151.505	61.889	Continuing	Continuing
3092: <i>Standard Missile 6 Program</i>	1,546.009	120.267	91.791	144.253	-	144.253	173.037	218.163	59.783	5.947	Continuing	Continuing

## **A. Mission Description and Budget Item Justification**

STANDARD Missile (SM) is Navy's premier Integrated Air and Missile Defense (IAMD) capability providing ship's self-defense and Fleet area-defense against great power competition advanced threats. The SM active family of missiles (FoM) includes Medium Range (MR) SM-2 Block IIIC, Extended Range (ER) SM-6 Block I, IA, IAU and Long-range (LR) SM-6 Block IB. This SM active FoM evolution improves primary mission areas for IAMD and evolved to include additional multi-mission defensive and offensive hypersonic kinetic capabilities. Today the SM-2 Block IIICU, SM-6 Block IAU and SM-6 Block IB are aligned with the Joint Warfare Concept (JWC), Joint Concept for Fires (JCF), the Navy's Navigation Plan Implementation Framework (NIF), and Navy Distributed Maritime Operations (DMO) to deliver the Navy and the Joint Force transformative capabilities addressing Combatant Commander and Chairman of the Joint Chief of Staff (JCS) highest capability gaps and capability requirements to support the Joint Operating Environment (JOE) for 2030 and 2045.

The Standard Missile 2 Block IIIC (SM-2 Block IIIC) is a transformation from medium range (MR) semi-active to MR active capability incorporating the SM-6 Block I active seeker and delivering improved capabilities against the most challenging Air Warfare (AW) threats. The program was designated an Accelerated Acquisition (AA) program by the CNO/ASN RDA on November 14, 2017. The SM-2 Block IIIC Middle Tier Acquisition (MTA) program (previously known as accelerated acquisition program) delivered Initial Capability in 1Q FY 2023. The SM-2 Block IIIC plans to transition from an MTA program into a Major Capability Acquisition (MCA) program for SM-2 Block IIICU in 2023.

The Standard Missile 6 Block IB (SM-6 Block IB) is an upgrade of the SM-6 Block IAU, which provides long-range fires capability by implementing improved software and replacing the existing Mk 104 Dual-Thrust Rocket Motor (DTRM) with a new 21-inch rocket motor to extend the range. The SM-6 Block IB delivers to the Navy and Joint Force a transformative multi-domain, multi-mission offensive hypersonic kinetic capability. SM-6 Block IB IOC delivery is FY 2026.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improvements			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	343.511	319.943	264.010	-	264.010
Current President's Budget	341.355	309.943	418.187	-	418.187
Total Adjustments	-2.156	-10.000	154.177	-	154.177
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	10.000	0.000			
• SBIR/STTR Transfer	-12.156	0.000			
• Program Adjustments	0.000	0.000	-2.510	-	-2.510
• Rate/Misc Adjustments	0.000	0.000	156.687	-	156.687
Change Summary Explanation					
The increase of \$108.244M from FY 2023 to FY 2024 fund activities to transition the SM-6 Block IB to MDAP. FY 2024 funding in the amount of \$100.100M for SM-6 Block IB Wholeness was aligned under RDTEN PE 0604366N Project Unit 3092 in error. This program funding should have been allocated to RDTEN PE 0604366N Project Unit 2063. As part of FY 2025, SM-6 Block IB funds will be placed under Project Unit 2063 FY 2024 - FY 2028. The SM-6 Block IB Engineering and Development program, will accomplish planned development efforts for the SM-6 Block IB in FY 2024, as follows: Conduct CTV-1 to close out the CTV demonstration. Complete the post-test analysis for the first Controlled Test Vehicle (CTV) conducted in FY 2023. Begin integrating the EU and the SM-6 Block IB to address the thermal protection systems differences with the SM-6 Block IAU. Complete the preliminary design and conduct a Preliminary Design Review (PDR) for the SM-6 Block IB on the new Electronics Unit (EU). Mature EU integration and complete detailed design. Conduct delta ground testing, including ground vibration survey, missile stability frequency response test, live battery test, and electromagnetic effects testing. Update the SM-6 Block IB model and simulation for flight test predictions to support CTV-2. Complete integration and prove out of software and simulation test facility fabrication initiated during the EU Risk Reduction effort. Complete software adaptation from EU into the SM-6 BLK IB to provide multi-mission capability. Complete architecture development and design for the CTV. Complete coding and final qualification test for the CTV-2 software build. Conduct Critical Design Review (CDR) for the SM-6 Block IB Initial Operating Capability (IOC). Continue Aegis architecture and design for SM-6 Block IB extended range capability. Continue procuring SM-6 Block IB components including ground test and CTV hardware. Continue procuring MK 29 Mod I canisters for the SM-6 Block IB flight and safety qualification testing and seven (7) Fleet experimentation rounds. Conduct an Independent Logistics Assessment (ILA). Conduct CTV-2 preparations and execute test; ramping down of combat system integration efforts to focus on DG 51 FLT III DT/OT events in FY 2024; the completion of the CTV SM-6 Block IB demonstration and execution of the functional baseline establishment of the Engineering and Manufacturing Development program; the Electronics Obsolescence program will complete development efforts, transition to test and the majority of flight testing will complete in FY 2023. The EU program will deliver the Engineering Change Proposal (ECP) to support production starting in FY 2024 completing the SM-6 Block IAU effort.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 0439 / Standard Missile Improvement			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0439: Standard Missile Improvement	1,431.842	45.710	28.948	39.173	-	39.173	34.937	37.358	14.981	14.140	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Future Combat System Integration S-Band Radar (AMDR-S) for DDG 51 Flight III ships, with other platforms/Combat System baselines, will include requirements review/updates and analysis, verification; technical documentation, design review and working group Subject Matter Expert (SME) support, missile/radar integration, missile test hardware procurement, risk assessment, safety, test and evaluation planning, analysis, and data collection. Deliverables include interface control documents (ICDs) changes, missile specifications changes, and engineering documents updates to support AEGIS Baseline 10 (BL10) Integrated Program Review (IPR) Process Engineering Development Model (EDM) testing; Combat Systems Engineering Development Site (CSEDS) , Moorestown, NJ; Combat System/missile integration testing at Pacific Missile Range Facility/Advanced Radar Detection Laboratory (PMRF/ARDEL) Kauai, HI and Sudbury, MA; Waterfront Integration Testing (WIT) and Electromagnetic Environmental Effects (E3) and Hazard of Electromagnetic Radiation to Ordnance (HERO) testing, analysis, and reports for BL10 DDG 51 FLT III FY 2022-2023; Developmental Testing and Operational Testing (DT/OT), analysis, and reports for BL10 DDG 51 FLT III FY 2023-2024 and Integrated Air Missile Defense Testing in FY 2026/2027.

The Standard Missile 2 Block IIIC (SM-2 Block IIIC) is a transformation from medium range (MR) semi-active to MR "active" capability incorporating the SM-6 Blk I active seeker and delivering improved capabilities against the most challenging Air Warfare (AW) threats. The program was designated an Accelerated Acquisition (AA) program by the CNO/ASN RDA on November 14, 2017. The SM-2 Block IIIC Middle Tier Acquisition (MTA) program (previously known as accelerated acquisition program) delivered Initial Capability in 1Q FY 2023. The SM-2 Block IIIC plans to transition from an MTA program into a Major Capability Acquisition (MCA) program for SM-2 Block IIICU in 2023. The FY 2023 and 2024 funding allows for the SM-2 Block IIIC program to transition to a SM-2 Block IIICU program with integration of the electronics unit upgrade and is being conducted in coordination with the international community via FMS cases. The SM-2 Block IIIC/IIICU is the primary AAW weapon for the FFG 62 class of ships. The addition of the MR IIIC/IIICU active seeker capability does not require missile illuminators as previously required for legacy semi-active missiles.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Standard Missile-2 BLK IIIC	32.230	20.874	32.491	0.000	32.491
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The SM-2 Block IIIC Middle Tier Acquisition (MTA) program (previously known as accelerated acquisition program) delivered Initial Capability in 1Q FY 2023. The funding allows for the SM-2 Block IIIC program to transition to a SM-2 Block IIICU program with the integration of a new electronics unit required to address obsolescence. This upgrade is necessary to continue procurement of the SM-2 Block IIIC capability and					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments		Project (Number/Name) 0439 / Standard Missile Improvement		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
is being conducted in coordination with the international community via FMS cases. The SM-2 Block IIIC/IIICU is the primary AAW weapon for DDG's and the FFG 62 class of ships which are not planning to include missile illuminators required for legacy semi-active missiles.  <b>FY 2023 Plans:</b> Close out SM-2 Block IIIC AA program with completion of the shipboard testing and system verification review. Complete supplemental analysis and runs for the record. Award SM-2 Block IIICU contract. SM-2 Block IIICU Risk reduction efforts, integration with Combat System Test Bed (CSTB) and early integration efforts to future AEGIS capability packages. Early analysis with FFG(X) Integration.  <b>FY 2024 Base Plans:</b> Kick off SM-2 Block IIICU efforts to include Systems Requirements Review (SRR) and Preliminary Design Review (PDR). Begin AUR integration, qualification, and testing. Update modeling and simulation tools leveraging legacy systems. Identify any potential changes to canister mechanical/electrical interfaces to support extended platform use. Begin integration efforts into new Aegis baseline. Engage WSESRB on delta safety requirements.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$11.617M due to delivery completion of SM-2 Block IIIC MTA program and kick-off efforts required during migration to SM-2 Block IIICU.						
Title: Future Combat System Integration  <div>Articles:</div>		13.480 -	8.074 -	6.682 -	0.000 -	6.682 -
FY 2023 Plans: Continue to plan and support missile radar and combat system (CS) testing using Inert Operational Missile (IOM), Missile Simulation Unit (MSU), or VOM with AEGIS combat system using SPY-6 at CSEDS. Continue to integrate and implement ET-17 solutions. Ensure all Electromagnetic Environmental Effects (E3), including Electromagnetic Vulnerability (EMV) testing, evaluation and analysis are complete and reports generated as required. Support execution of WIT 1 (VOM Shipboard Integration). Continue to prepare for and support safety efforts for AEGIS Baseline 10. Support advanced planning, preparation and execution of Waterfront Integration Testing (WIT) 2 for Future Combat System Integration planned for Q4 FY 2023. Support advanced planning and						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 0439 / Standard Missile Improvement			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
preparation for upcoming DT/OT events in FY 2024 and Integrated Air Missile Defense Testing in FY 2026/2027. Continue to support AEGIS Baseline 10. IPR Process.											
FY 2024 Base Plans: Continue to plan and support missile radar and combat system (CS) testing using Inert Operational Missile (IOM), Missile Simulation Unit (MSU), or VOM with AEGIS combat system using SPY-6/BL10 at CSEDS as required. Continue to integrate and implement ET-17 solutions. Support advanced planning, preparation, execution and post test data analysis for DT/OT events in FY 2024 and Integrated Air Missile Defense Testing in FY 2026/2027. Continue to support AEGIS Baseline 10. IPR Process											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$1.392M due to ramping down of combat system integration testing and focus on DDG 51 FLT III DT/OT at sea events in FY 2024 the majority of which will be supplemented by the ship program.											
Accomplishments/Planned Programs Subtotals							45.710	28.948	39.173	0.000	39.173
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• WPN/2356: Standard Missile Mods BLK IIIC & Canister	130.482	71.198	89.255	-	89.255	101.292	148.166	200.423	205.028	Continuing	Continuing
Remarks 2356 funding Includes BLK IIIC & Canisters											
D. Acquisition Strategy											
The Navy's SM-2 Block IIIC program is an upgrade to the SM-2 Air Defense missile that will ultimately result in active, medium range missiles onboard AEGIS Cruisers and Destroyers. SM-2 Block IIIC is a rapid prototyping pathway middle tier acquisition (MTA) project that maximizes the reuse of the existing SM-6 Block I active guidance section with a SM-2 Block III rocket motor while minimizing new hardware and software development work. The SM-2 Block IIIC Middle Tier Acquisition (MTA) program (previously known as accelerated acquisition program) delivered Initial Capability in 1Q FY 2023. The SM-2 Block IIIC plans to transition from a MTA program into a Major Capability Acquisition (MCA) program for SM-2 Blk IIICU in 2023. The program is designated as SM-2 Block IIICU and will address obsolescence and increased performance capability beyond the initial IC program.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 0439 / Standard Missile Improvement					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Analysis1	C/CPFF	RAYTHEON : Tucson, AZ	469.499	19.098	Nov 2021	8.028	Nov 2022	24.786	Nov 2023	-		24.786	Continuing	Continuing	Continuing
Design and Analysis2	C/CPFF	JHU/APL : Laurel, MD	29.699	2.340	Nov 2021	3.340	Nov 2022	2.830	Nov 2023	-		2.830	0.000	38.209	-
Design and Analysis3	MIPR	MIT/Lin Lab : Lexington, MA	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Design and Analysis4	WR	NSWC : Dahlgren	794.469	0.950	Nov 2021	0.450	Nov 2022	1.450	Nov 2023	-		1.450	0.000	797.319	-
Design and Analysis5	WR	NSWC : Indian Head	1.751	0.000		0.000		0.000		-		0.000	0.000	1.751	-
Design and Analysis6	WR	NAWC : China Lake	5.979	0.000	Nov 2021	0.000		0.000		-		0.000	0.000	5.979	-
Design and Analysis7	Various	LOCKHEED MARTIN : Moorestown, NJ	17.775	0.000		0.000		0.125	Nov 2023	-		0.125	0.000	17.900	-
Design and Analysis8	WR	CNO : Washington, DC	0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	-
Design and Analysis9	WR	CMDP : Phoenix, AZ	4.795	0.000		0.000		0.000		-		0.000	0.000	4.795	-
Design and Analysis11	WR	NSWC : Crane	0.257	0.000		0.000		0.000		-		0.000	0.000	0.257	-
Design and Analysis12	WR	DOI&CNAP : Washington, DC	0.487	0.000		0.000		0.000		-		0.000	0.000	0.487	-
Design and Analysis13	WR	COMPTEVFOR : Norfolk, VA	0.895	0.450	Nov 2021	0.020	Nov 2022	0.000	Nov 2023	-		0.000	0.000	1.365	-
Design and Analysis14	C/CPFF	LOCKHEED MARTIN : Moorestown, NJ	2.000	0.000		0.000		0.000		-		0.000	0.000	2.000	-
Design and Analysis15	WR	CARDEROCK : Bethesda, MD	0.080	0.000		0.000		0.000		-		0.000	0.000	0.080	-
Design and Analysis16	WR	NSWC : Corona	3.044	1.383	Nov 2021	0.000		0.075	Oct 2023	-		0.075	0.000	4.502	-
Design and Analysis17	C/CPFF	CORVID : Mooresville, NC	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
Design and Analysis18	C/CPFF	BAE : Rockville, MD	2.392	0.883	Nov 2021	0.000		0.296	Nov 2023	-		0.296	0.000	3.571	-
Design and Analysis19	MIPR	MDA : Dahlgren,VA	1.257	0.000		0.000		0.000		-		0.000	0.000	1.257	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 0439 / Standard Missile Improvement					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Analysis20	WR	IWS3D : ARLINGTON, VA	1.500	0.000		0.000		0.000		-		0.000	0.000	1.500	-
Design and Analysis21	C/CPFF	LOCKHEED MARTIN : IWS (IWS 1)	38.588	0.800	Nov 2021	2.000	Nov 2022	0.700	Nov 2023	-		0.700	0.000	42.088	-
Design and Analysis22	WR	IWS3L : Arlington, Va	15.400	0.100	Nov 2021	0.200	Nov 2022	0.000		-		0.000	0.000	15.700	-
Design and Analysis23	WR	NSWC : PHD	0.824	0.000	Nov 2021	0.000		0.075	Nov 2023	-		0.075	0.000	0.899	-
Design and Analysis24	C/CPFF	IWS1 : Washington, D.C.	5.000	5.600	Nov 2021	0.310	Nov 2022	0.000	Nov 2023	-		0.000	0.000	10.910	-
Design and Analysis25	WR	IWS 3A : Arlington, Va	0.000	0.000		1.000	Nov 2022	1.230	Nov 2023	-		1.230	0.000	2.230	-
Design and Analysis26	WR	IWS7 : Washington, DC	4.370	1.900	Nov 2021	0.000		0.000		-		0.000	0.000	6.270	-
Design and Analysis	WR	IWS3 : Arlington, Va	0.000	0.000		4.060	Nov 2022	0.000		-		0.000	0.000	4.060	-
Design and Analysis	WR	VARIOUS : VARIOUS	0.000	0.000		0.000		0.154	Nov 2023	-		0.154	0.000	0.154	-
Product Development	WR	VARIOUS : VARIOUS	0.000	0.000		0.000		0.154	Nov 2023	-		0.154	0.000	0.154	-
Design and Analysis	WR	IWS3C : Washington, D.C.	0.000	0.000		0.000		0.500	Nov 2023	-		0.500	0.000	0.500	-
Subtotal			1,400.221	33.504		19.408		32.375		-		32.375	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC : Port Hueneme	0.935	1.383	Nov 2021	0.383	Nov 2022	0.500	Nov 2023	-		0.500	0.000	3.201	-
Developmental Test & Evaluation (DT&E)	WR	WSMR : New Mexico	3.230	0.150	Nov 2021	0.000		0.075	Oct 2023	-		0.075	0.000	3.455	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 0439 / Standard Missile Improvement					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC : Pt Mugu	0.362	2.262	Nov 2021	0.000		0.000		-		0.000	0.000	2.624	-
Developmental Test & Evaluation (DT&E)	WR	PMRF : Hawaii	0.338	0.000		0.000		0.000		-		0.000	0.000	0.338	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Techrep	1.688	0.565	Nov 2021	0.565	Nov 2022	0.934	Nov 2023	-		0.934	0.000	3.752	-
Developmental Test & Evaluation (DT&E)	SS/CPFF	RAYTHEON : Tucson, Az	1.895	3.000	Nov 2021	2.500	Nov 2022	0.400	Nov 2023	-		0.400	0.000	7.795	-
Developmental Test & Evaluation (DT&E)	C/CPFF	JHU/APL : Laurel, Md	0.519	0.200	Nov 2021	0.200	Nov 2022	0.450	Nov 2023	-		0.450	0.000	1.369	-
Developmental Test & Evaluation (DT&E)	C/CPIF	VARIOUS : IWS (IWS 1)	4.352	2.800	Nov 2021	0.000		0.000	Nov 2023	-		0.000	0.000	7.152	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Dahlgren	0.468	0.300	Nov 2021	0.200	Nov 2022	0.400	Nov 2023	-		0.400	0.000	1.368	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Corona	0.000	0.200	Nov 2021	0.520	Nov 2022	1.520	Nov 2023	-		1.520	0.000	2.240	-
Developmental Test & Evaluation (DT&E)	WR	IWS3 : Arlington, VA	0.000	0.000		2.030	Nov 2022	0.000	Nov 2023	-		0.000	0.000	2.030	-
Subtotal			13.787	10.860		6.398		4.279		-		4.279	0.000	35.324	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CONTRACTOR ENGINEERING SUPPORT	C/CPAF	VARIOUS : VARIOUS	4.561	0.000		0.000		0.000		-		0.000	0.000	4.561	-
PROGRAM MANAGEMENT SUPPORT	C/CPAF	VARIOUS : VARIOUS	12.717	1.301	Nov 2021	3.107	Nov 2022	2.319	Dec 2023	-		2.319	0.000	19.444	-
TRAVEL	Allot	IWS3 : Arlington, VA	0.556	0.045	Nov 2021	0.035	Nov 2022	0.200	Nov 2023	-		0.200	0.000	0.836	-
Subtotal			17.834	1.346		3.142		2.519		-		2.519	0.000	24.841	N/A



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023						
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments					Project (Number/Name) 0439 / Standard Missile Improvement							
					Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals					1,431.842	45.710		28.948		39.173		-		39.173	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604366N / Standard Missile Improve  
ments

## Project (Number/Name)

0439 / Standard Missile Improvement

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

**Proj 0439**Future Combat System Integration HERO/  
EMV TestingFuture Combat System Integration Test  
Planning

Future Combat System Integration WIT 1

Future Combat System Integration DT/OT

Future Combat System Integration WIT 2

Future Combat System Integration DDG 51  
FLT III IOCFuture Combat System Integration ET-17  
MSLEX During CSSQTFuture Combat System Integration Weapon  
System Explosives Safety Review Board  
(WSESRB)Future Combat System Integration Integrated  
Air Missile Defense TestingStandard Missile-2 BLK IIIC Weapon  
Systems Explosive Safety Review Board 2

Standard Missile-2 BLK IIIC CTV/GTV

Standard Missile-2 BLK IIIC Weapon  
Systems Explosive Safety Review Board 3

Standard Missile-2 BLK IIIC QRA Testing

Standard Missile-2 BLK IIIC System  
Verification ReviewStandard Missile-2 BLK IIIC Software  
Systems Safety Technical Review Panel 4

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023												
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)										
1319 / 5										PE 0604366N / Standard Missile Improve ments								0439 / Standard Missile Improvement										
	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 5																												
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 5																												
Standard Missile-2 BLK IIICU Milestone B																												
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 4																												
Standard Missile-2 BLK IIIC Initial Capability																												
Standard Missile-2 BLK IIICU Contract Award																												
Standard Missile-2 BLK IIICU SRR																												
Standard Missile-2 BLK IIICU Program Kickoff/ Preliminary Design Review																												
Standard Missile-2 BLK IIICU PDR																												
Standard Missile-2 BLK IIICU CDR																												
Standard Missile-2 BLK IIICU Landing Based Testing																												
Standard Missile-2 BLK IIICU DT/OT																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604366N / <i>Standard Missile Improve ments</i>	<b>Project (Number/Name)</b> 0439 / <i>Standard Missile Improvement</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0439</b>				
Future Combat System Integration HERO/EMV Testing	3	2022	1	2023
Future Combat System Integration Test Planning	1	2022	4	2027
Future Combat System Integration WIT 1	2	2023	2	2023
Future Combat System Integration DT/OT	4	2023	4	2024
Future Combat System Integration WIT 2	4	2023	4	2023
Future Combat System Integration DDG 51 FLT III IOC	4	2024	4	2024
Future Combat System Integration ET-17 MSLEX During CSSQT	4	2024	4	2024
Future Combat System Integration Weapon System Explosives Safety Review Board (WSESRB)	1	2024	4	2027
Future Combat System Integration Integrated Air Missile Defense Testing	4	2026	4	2027
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 2	1	2022	1	2022
Standard Missile-2 BLK IIIC CTV/GTV	2	2022	1	2023
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 3	1	2022	1	2022
Standard Missile-2 BLK IIIC QRA Testing	3	2022	3	2022
Standard Missile-2 BLK IIIC System Verification Review	4	2022	4	2022
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 4	1	2022	1	2022
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 5	4	2022	4	2022
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 5	4	2022	4	2022
Standard Missile-2 BLK IIICU Milestone B	2	2023	2	2023
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 4	1	2023	1	2023
Standard Missile-2 BLK IIIC Initial Capability	4	2022	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments	Project (Number/Name) 0439 / Standard Missile Improvement		
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Standard Missile-2 BLK IIICU Contract Award	4	2023	4	2023
Standard Missile-2 BLK IIICU SRR	1	2024	1	2024
Standard Missile-2 BLK IIICU Program Kickoff/ Preliminary Design Review	1	2024	1	2024
Standard Missile-2 BLK IIICU PDR	2	2024	2	2024
Standard Missile-2 BLK IIICU CDR	4	2024	4	2024
Standard Missile-2 BLK IIICU Landing Based Testing	2	2025	1	2026
Standard Missile-2 BLK IIICU DT/OT	3	2026	2	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604366N / <i>Standard Missile Improve ments</i>				Project (Number/Name) 2063 / <i>SM-6 Blk IB</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2063: <i>SM-6 Blk IB</i>	257.303	175.378	189.204	234.761	-	234.761	228.327	150.497	151.505	61.889	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

FY 2024 funding in the amount of \$100.100M for SM-6 Block IB Wholeness was aligned under RDTEN PE 0604366N Project Unit 3092 in error. This program funding should have been allocated to RDTEN PE 0604366N Project Unit 2063, and needs to be corrected across the FYDP.

**A. Mission Description and Budget Item Justification**

This missile will provide an extended range capability for SM-6 and will be a key contributor to the protection of Joint U.S. Forces, in support of the 2022 National Defense Strategy. SM-6 Block IB addresses valid Joint, Fleet, and Navy Urgent Operational Needs and existing, Joint Requirements Oversight Council (JROC)-approved requirements. This program aligns with the STANDARD Missile roadmap and takes advantage of the Navy's investment in the AEGIS Weapon System (AWS). It leverages existing missile technology and advanced missile technology from the SM-6 Block IB Phase IA Rocket Motor Rapid Prototyping Experimentation and Demonstration (RPED) effort that completed in FY 2020. The Accelerated Acquisition Board of Directors (AA BoD) met on 17 January 2018 and approved the designation of the SM-6 Block IB Phase IA (Rocket Motor) as a Rapid Prototyping, Experimentation and Demonstration (RPED) project. This designation acknowledged the requirement to expedite the development, acquisition and fielding of the SM-6 Block IB to Naval Forces. The AA BoD met 9 November 2018 and directed SM-6 Block IB to commence All Up Round (AUR) prototyping (Phase IB). In December 2020, the program initiated a restructure to transition from an Accelerated Acquisition program with 10 USC 2538 authority to a Major Development Acquisition Program.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> SM-6 BLK IB Development	152.917	189.204	234.761	0.000	234.761
<b>Articles:</b>	-	-	-	-	-
<b><i>FY 2023 Plans:</i></b> Complete development efforts started in FY 2022; complete design verification sufficient to conduct a Controlled Test Vehicle (CTV). Complete ground testing including live battery verification and electrical and preliminary electromagnetic effects testing. Complete incorporation of results from ground testing into model based analytical tools to facilitate design, design validation, and assessment of safety standards compliance sufficient for flight testing. Complete software build for the CTV and conduct a final qualification test for the CTV software build. Conduct a platform test to ensure integration with Vertical Launch System (VLS) for CTV demonstration. Complete qualification of the In-Flight Termination System to certify compliance with US range safety requirements for approval to conduct extended range CTV. Complete Packaging, Handling, Storage and Transportation (PHS&T) Qualification testing for the MK 29 Mod 1 Canister and obtain PHS&T					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604366N / <i>Standard Missile Improve ments</i>		Project (Number/Name) 2063 / <i>SM-6 Blk IB</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
certification. Complete preparations at the Range for a CTV demonstration including site surveys, environmental assessments, range procedures, dry runs, and instrumenting launch and impact sites for CTV-1. Award the SM-6 Block IB Engineering and Manufacturing Development contract. Conduct a Systems Requirements Review (SRR) and initiate the preliminary design for the SM-6 Block IB on the new Electronics Unit (EU). SM-6 Block IB design will leverage effort from the SM-6 Block IAU obsolescence program and the Electronics Unit Risk Reduction conducted for the SM-6 Block IB in FY 2022. Begin design and hardware procurement for software and simulation test facility fabrication initiated during the EU Risk Reduction effort. Conduct shock and vibration testing on the Electronics Unit to the SM-6 Block IB environments. Fabricate multiple 21-inch diameter rocket motor prototypes for All-Up-Round flight testing and insensitive munitions testing. Complete RM design verification testing and initiate rocket motor qualification. Begin software adaptation from SM-6 BLK IAU into the SM-6 Block IB to provide multi-mission capability. Begin Aegis architecture development and design for the SM-6 Block IB extended range capability. Begin procuring SM-6 Block IB components and MK 29 Mod I canisters for the SM-6 Block IB flight and safety qualification testing and seven (7) Fleet experimentation rounds.						
FY 2024 Base Plans: PU 3092 includes program funding for SM-6 Block IB wholeness of which \$100.100M contributes to efforts to complete SM-6 Block IB Engineering and Development program to accomplish planned development efforts for the SM-6 Block IB in FY 2024, as follows: Conduct CTV-1 to close out the CTV demonstration. Complete the post-test analysis for the first Controlled Test Vehicle (CTV) conducted in FY 2023. Begin integrating the EU and the SM-6 Block IB to address the thermal protection systems differences with the SM-6 Block IAU. Complete the preliminary design and conduct a Preliminary Design Review (PDR) for the SM-6 Block IB on the new Electronics Unit (EU). Mature EU integration and complete detailed design. Conduct delta ground testing, including ground vibration survey, missile stability frequency response test, live battery test, and electromagnetic effects testing. Update the SM-6 Block IB model and simulation for flight test predictions to support CTV-2. Complete integration and prove out of software and simulation test facility fabrication initiated during the EU Risk Reduction effort. Complete software adaptation from EU into the SM-6 Block IB to provide multi-mission capability. Complete architecture development and design for the CTV. Complete coding and final qualification test for the CTV-2 software build. Conduct Critical Design Review CDR) for the SM-6 Block IB Initial Operating Capability (IOC). Continue Aegis architecture and design for SM-6 Block IB extended range capability. Continue procuring SM-6 Block IB components including ground test and CTV hardware. Continue procuring MK 29 Mod I canisters for the SM-6 Block IB flight and safety qualification testing and seven (7) Fleet experimentation rounds. Conduct an Independent Logistics Assessment (ILA). Conduct CTV-2 preparations and execute test.						
FY 2024 OCO Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023							
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments		Project (Number/Name) 2063 / SM-6 Blk IB							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Increase of \$45.557M reflects the partial increase required to complete the CTV-1 demonstration, complete the preliminary design and continue procuring test articles for the flight test program. FY 2024 funding in the amount of \$100.100M for SM-6 Block IB Wholeness was aligned under RD TEN PE 0604366N Project Unit 3092 in error. This program funding should have been allocated to RD TEN PE 0604366N Project Unit 2063. In the interim, the scope is addressed in both PU 2063 and PU 3092 until these adjustments are amended.											
Title: Electronics Unit Integration  Articles:				22.461 -	0.000 -	0.000 -	0.000 -	0.000 -			
FY 2023 Plans: After completion of long lead activities in FY 2022, the Electronics Unit (EU) Integration activities will be conducted as part of the integrated SM-6 Block IB Engineering and Manufacturing Development Program rather than as a separate discrete effort.											
FY 2024 Base Plans: N/A											
FY 2024 OCO Plans: N/A											
Accomplishments/Planned Programs Subtotals				175.378	189.204	234.761	0.000	234.761			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• WPN 2234: Standard Missile	598.826	572.040	969.525	-	969.525	963.877	1,404.090	1,274.824	1,270.011	6,264.788	18,103.274
Remarks PE 0204228N WPN LI 2234 is a shared procurement for SM-6 Block I, Block IA and Block IB. SM-6 Block IB low rate initial production starts in FY 2024.											
D. Acquisition Strategy SM-6 Block IB Acquisition Strategy was signed by ASN RDA in FY 2022											



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 2063 / SM-6 Blk IB					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Analysis	C/CPFF	JHU/APL : Laurel, MD	13.231	0.993	Jun 2022	0.981	Nov 2022	2.354	Nov 2023	-		2.354	Continuing	Continuing	Continuing
Design and Analysis	WR	NAWC AD : China Lake	12.222	2.874	May 2022	3.556	Nov 2022	3.563	Nov 2023	-		3.563	Continuing	Continuing	Continuing
Design and Analysis	WR	NSWC : Indian Head	0.690	0.380	Jun 2022	0.365	Nov 2022	0.380	Nov 2023	-		0.380	Continuing	Continuing	Continuing
Design and Analysis	C/CPFF	NSMA : Tucson, AZ	106.518	78.502	Jun 2022	80.885	Nov 2022	97.180	Nov 2023	-		97.180	Continuing	Continuing	Continuing
Design and Analysis	C/CPFF	BAE : ROCKVILLE, MD	0.204	0.091	Jun 2022	0.044	Nov 2022	0.150	Nov 2023	-		0.150	Continuing	Continuing	Continuing
Design and Analysis	C/CPFF	GD-OTS : Healdsburg, CA	20.857	7.169	Jun 2022	4.522	Nov 2022	0.000		-		0.000	0.000	32.548	-
Design and Analysis	WR	NSWC Dahl : Dahlgren, Va	1.632	0.385	Apr 2022	0.381	Nov 2022	0.000		-		0.000	0.000	2.398	-
Design and Analysis	Various	IWS 3L : Dahlgren, VA	9.983	0.000		0.000		0.167	Nov 2023	-		0.167	0.000	10.150	-
Design and Analysis	Various	IWS1.0 : Lockheed Martin	1.625	0.125	Jun 2022	1.000	Nov 2022	1.500	Nov 2023	-		1.500	0.000	4.250	-
Design and Analysis	C/CPFF	Corvid : Mooresville, NC	1.737	0.801	Dec 2021	0.000		0.000		-		0.000	0.000	2.538	-
Design and Analysis	WR	Indian Head : Picatinny	1.731	2.142	Jun 2022	1.030	Nov 2022	0.628	Nov 2023	-		0.628	0.000	5.531	-
Design and Analysis	WR	NAWC AD : Techrep	0.466	0.000		0.000		0.000		-		0.000	0.000	0.466	-
Design and Analysis	C/CPFF	Aerojet : Huntsville, AL	40.633	24.997	Jun 2022	5.886	Nov 2022	15.000	Nov 2023	-		15.000	0.000	86.516	-
Design and Analysis	WR	PHD : Port Hueneme	0.000	0.022	Jun 2022	0.460	Nov 2022	0.100	Nov 2023	-		0.100	0.000	0.582	-
Design and Analysis	C/CPFF	Lockheed Martin : Moorestown, NJ	1.000	0.000		0.350	Nov 2022	7.800	Nov 2023	-		7.800	0.000	9.150	-
Design and Analysis	C/CPFF	BAE Systems : Fridley, MN	0.000	7.933	Jun 2022	2.495	Nov 2022	2.060	Nov 2023	-		2.060	0.000	12.488	-
Design and Analysis	WR	NSWC Corona : Corona, CA	0.000	0.326	Jun 2022	0.960	Nov 2022	0.000		-		0.000	0.000	1.286	-
Subtotal			212.529	126.740		102.915		130.882		-		130.882	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604366N / <i>Standard Missile Improve</i> <i>ments</i>						<b>Project (Number/Name)</b> 2063 / <i>SM-6 Blk IB</i>			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test and Evaluation	WR	NAWC WD : China Lake	0.500	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test and Evaluation	WR	NSWC : Port Hueneme	0.001	0.087	Mar 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test and Evaluation	WR	McAlester : Rock Island	0.013	0.000		0.000		0.000		-		0.000	0.000	0.013	-
Developmental Test and Evaluation	C/CPFF	IWS 3 : Arlington, VA	0.038	0.000		0.000		0.000		-		0.000	0.000	0.038	-
Developmental Test and Evaluation	Various	NSMA Support : VARIOUS	0.000	31.235	Mar 2022	0.000		0.000		-		0.000	0.000	31.235	-
Developmental Test and Evaluation	WR	Techrep Support : China Lake	0.489	0.802	Mar 2022	0.908	Nov 2022	0.944	Nov 2023	-		0.944	0.000	3.143	-
Developmental Test and Evaluation	C/CPFF	BAE Systems Spt : Fridley, MN	0.000	0.000		7.410	Nov 2022	18.543	Nov 2023	-		18.543	0.000	25.953	-
Developmental Test and Evaluation	C/CPFF	NSWC PHD Spt : Port Hueneme	0.000	0.087	Mar 2022	0.000		0.000		-		0.000	0.000	0.087	-
Developmental Test and Evaluation	WR	IWS 3L Support : Dahlgren, VA	0.000	0.000		0.000		1.251	Nov 2023	-		1.251	0.000	1.251	-
Developmental Test and Evaluation	WR	NSWC DD Spt : Dahlgren, VA	0.000	0.000		0.370	Nov 2022	0.964	Nov 2023	-		0.964	0.000	1.334	-
Developmental Test and Evaluation	WR	NSWC IH Spt : Picatinny, NJ	0.000	0.000		0.964	Nov 2022	0.539	Nov 2023	-		0.539	0.000	1.503	-
Developmental Test and Evaluation	C/CPFF	Aerojet Support : Huntsville, AL	0.000	6.755	Mar 2022	8.828	Nov 2022	7.750	Nov 2023	-		7.750	0.000	23.333	-
Developmental Test and Evaluation	C/CPFF	JHU/APL Support : Laurel, Maryland	0.000	0.662	Mar 2022	0.000		0.000		-		0.000	0.000	0.662	-
Developmental Test and Evaluation	WR	NAWC CL Support : China Lake, CA	0.000	0.822	Mar 2022	0.000		0.000		-		0.000	0.000	0.822	-
Developmental Test and Evaluation	WR	Pt Mugu Support : Pt Mugu, CA	0.000	0.050	Mar 2022	0.000		0.000		-		0.000	0.000	0.050	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604366N / <i>Standard Missile Improve</i> <i>ments</i>						<b>Project (Number/Name)</b> 2063 / <i>SM-6 Blk IB</i>			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test and Evaluation	WR	NSWC Corona Support : Corona, CA	0.000	0.326	Mar 2022	0.000		0.000		-		0.000	0.000	0.326	-
Developmental Test and Evaluation	WR	NSWC DD Support : Dahlgren, VA	0.000	0.663	Mar 2022	1.604	Nov 2022	0.000		-		0.000	0.000	2.267	-
Developmental Test and Evaluation	C/CPFF	GD-OTS Support : Healdsburg, CA	0.000	1.917	Mar 2022	0.000		0.000		-		0.000	0.000	1.917	-
Developmental Test and Evaluation	MIPR	NSA Support : Edwards AFB, NV	0.000	0.090	Mar 2022	0.000		0.000		-		0.000	0.000	0.090	-
<b>Subtotal</b>			1.041	43.496		20.084		29.991		-		29.991	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	WSMR : White Sands	0.360	0.703	Jun 2022	1.628	Nov 2022	2.539	Nov 2023	-		2.539	0.000	5.230	-
Developmental Test & Evaluation (DT&E)	C/BA	JHU/APL : Laurel, MD	3.550	0.000		2.163	Nov 2022	1.761	Dec 2023	-		1.761	0.000	7.474	-
Developmental Test & Evaluation (DT&E)	C/BA	NAWC WD : China Lake	2.250	0.000		2.223	Nov 2022	3.197	Dec 2023	-		3.197	0.000	7.670	-
Developmental Test & Evaluation (DT&E)	C/BA	PHD : Port Hueneme	0.025	0.000		0.220	Nov 2022	0.952	Dec 2023	-		0.952	0.000	1.197	-
Developmental Test & Evaluation (DT&E)	C/BA	NSMA : Virginia	24.405	0.000		42.556	Nov 2022	37.100	Dec 2023	-		37.100	0.000	104.061	-
Developmental Test & Evaluation (DT&E)	C/BA	IWS 3 : Arlington, VA	0.050	0.000		0.000		0.050	Nov 2023	-		0.050	0.000	0.100	-
Developmental Test & Evaluation (DT&E)	C/BA	Pt Mugu : Pt Mugu, CA	0.017	0.365	Mar 2022	0.100	Nov 2022	0.300	Nov 2023	-		0.300	0.000	0.782	-
Developmental Test & Evaluation (DT&E)	C/BA	NSWC CO : Corona, CA	0.138	0.000		0.960	Nov 2022	0.998	Nov 2023	-		0.998	0.000	2.096	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 2063 / SM-6 Blk IB					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/BA	PMRF : Hawaii	0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	-
Developmental Test & Evaluation (DT&E)	C/BA	COTF : Norfolk, VA	0.021	0.000		0.000		0.000		-		0.000	0.000	0.021	-
Developmental Test & Evaluation (DT&E)	C/BA	Dahlgren : Dahlgren, VA	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	-
Developmental Test & Evaluation (DT&E)	C/BA	BAE Systems : Fridley, MN	8.307	0.000		0.000		0.000		-		0.000	0.000	8.307	-
Developmental Test & Evaluation (DT&E)	MIPR	RAYTHEON : TEWKSBURY, MA	0.000	0.000		0.000		1.260	Dec 2023	-		1.260	0.000	1.260	-
Subtotal			39.283	1.068		49.850		48.157		-		48.157	0.000	138.358	N/A
Remarks															
FY 2024 funding in the amount of \$100.100M for SM-6 Block IB Wholeness was aligned under RD TEN PE 0604366N Project Unit 3092 in error. This program funding should have been allocated to RD TEN PE 0604366N Project Unit 2063.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	VARIOUS : VARIOUS	4.450	2.270	Sep 2022	13.317	Nov 2022	20.750	Nov 2023	-		20.750	Continuing	Continuing	Continuing
Contractor Engineering Support	C/BA	VARIOUS : VARIOUS	0.000	1.704	Sep 2022	2.838	Nov 2022	4.781	Nov 2023	-		4.781	0.000	9.323	-
Travel	C/BA	Not Specified : Not Specified	0.000	0.100	Mar 2022	0.200	Jun 2023	0.200	Jun 2024	-		0.200	0.000	0.500	-
Subtotal			4.450	4.074		16.355		25.731		-		25.731	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			257.303	175.378		189.204		234.761		-		234.761	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy							Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments			Project (Number/Name) 2063 / SM-6 Blk IB			
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604366N / <i>Standard Missile Improve</i> <i>ments</i>			<b>Project (Number/Name)</b> 2063 / <i>SM-6 Blk IB</i>

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Proj 2063</b>																												
AUR IPR (pre-Critical Design Review) for CTV Demo																												
IPR-4 (Critical Design Review) for CTV Demo																												
IPR-5 (Mission Readiness for CTVs) for CTV Demo																												
CTV-1																												
Milestone Decision																												
Contract Award																												
CTV-2																												
GTV-1																												
GTV-2																												
GTV-3																												
GTV-4																												
GTV-5																												
GTV-6																												
Steering Control Section Qualification																												
Rocket Motor Development																												
Rocket Motor Qualification																												
Begin VLS Integration																												
MK 29 Mod 1 Qualification																												
Aegis Integration																												
Electronics Unit Integration Risk Reduction																												
IOC																												
FOTE																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																							Date: March 2023														
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604366N / <i>Standard Missile Improve ments</i>										Project (Number/Name) 2063 / <i>SM-6 Blk IB</i>																	
										FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FOC																																					

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604366N / Standard Missile Improve  
ments

## Project (Number/Name)

2063 / SM-6 Blk IB

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2063</b>				
AUR IPR (pre-Critical Design Review) for CTV Demo	1	2022	1	2022
IPR-4 (Critical Design Review) for CTV Demo	4	2022	4	2022
IPR-5 (Mission Readiness for CTVs) for CTV Demo	3	2023	3	2023
CTV-1	1	2023	2	2024
Milestone Decision	4	2022	4	2022
Contract Award	1	2023	1	2023
CTV-2	2	2024	1	2026
GTV-1	1	2025	4	2026
GTV-2	3	2025	2	2027
GTV-3	3	2025	2	2027
GTV-4	2	2026	1	2028
GTV-5	4	2026	3	2028
GTV-6	4	2026	3	2028
Steering Control Section Qualification	4	2022	3	2023
Rocket Motor Development	1	2023	1	2025
Rocket Motor Qualification	1	2025	4	2025
Begin VLS Integration	3	2023	3	2023
MK 29 Mod 1 Qualification	1	2023	2	2025
Aegis Integration	1	2023	2	2025
Electronics Unit Integration Risk Reduction	3	2022	2	2023
IOC	3	2026	3	2026



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments		Project (Number/Name) 2063 / SM-6 Blk IB	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
FOTE		2	2027	1	2028
FOC		4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 3092 / Standard Missile 6 Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3092: Standard Missile 6 Program	1,546.009	120.267	91.791	144.253	-	144.253	173.037	218.163	59.783	5.947	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

This program leverages existing missile technology and advanced missile technology. It aligns missile technology roadmaps across the services (NAVSEA, NAVAIR, USAF, USMC and USA) and missile variants within the services, taking advantage of the Navy's investment in the AEGIS Weapons System (AWS) and Cooperative Engagement Capability (CEC). This missile will provide an extended range engagement capability to provide the air superiority and the umbrella of protection for joint U.S. forces and allies against the full spectrum of manned-fixed and rotary-wing aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight. This missile contributes to the continuous protection of forward deployed ground maneuver forces as well as theater rear assets supporting mission requirements discussed in the National Security Strategy (NSS), Secretary of Defense National Defense Strategy (NDS), Chairman of the Joint Chiefs' National Military Strategy (NMS), Capstone Concept for Joint Operations (CCJO), Joint Requirements Oversight Council (JROC) Integrated Air and Missile Defense (IAMD) Initial Capability Document (ICD), the JROC IAMD Joint Integrating Concept (JIC), JROC IAMD Operational Concept; the Theater and Air Missile Defense ICD (TAMD MDA-ICD), the Chairman of the Joint Chiefs of Staff Joint IAMD Vision 2020/2030 and the Joint Publication 3-01 Countering Air and Missile Threats; the Navy's Integrated Fire Control Naval Integrating Capability Concept (NIFC-NICC), the JROC Operational Requirements Document (ORD) for SM-6 Block 1, and the JROC SM-6 Capability Production Document. SM-6 portion of Joint and Naval Integrated Fire Control (NIFC) is to support the integration, land-based and at-sea test, and analysis in support of the NIFC-CA test and evaluation strategy. NIFC-CA integrates sensor improvements, SM-6 BLK IA, CEC and AWS AEGIS Baseline 9 Capability Package 22-1 into an advanced from the sea (FTS) Kill chain. Efforts include support for the White Sands Missile Range (WSMR) upgrade, Trackex events, Integration Events and Live Fire test at land based and at-sea tests. Flight testing will continue as future Aegis builds continue to be deployed with NIFC-CA capability. SM-6 System Engineering and Flight Test (SEFT) supports the development of the guidance section software configuration. This includes the research, development, test and evaluation necessary to incorporate the software in production missiles. SM-6 funding for AEGIS integration will verify compatibility with the Aegis builds that will use the full performance of the advanced missile. Supports modifications and upgrades to the SM-6 and SM-2 Active Missile Variants Flight Instrumentation Kits to C-band and the Enhanced Flight Termination System (EFTS) upgrade. These modification and upgrades to C-Band and EFTS hardware are to support a large multi-salvo test. This includes changing the Telemetry downlink to C-Band and incorporating an Enhanced Flight Termination Receiver (EFTR) into SM-6 and SM-2. The NIFC-CA project will be incorporated into the SEFT project in FY 2025 to more efficiently implement SM-6 testing, analyses, modeling efforts. SEFT project directly supports the now completed Future Capabilities Demonstration (FCD) project high priority mission requirements requested by Combatant Commanders by improving the SM-6 Missile's capability. The project is continuing analyses and trade studies required for Fleet employment, future enhancements and expansion of the mission capabilities for the SM-6 Block IA missile and perform the necessary missile software development to support mission capability improvement. FCD was formerly its own project and has been incorporated into SEFT in FY 2023. As stated above, the NIFC-CA project will be incorporated into the SEFT project in FY 2025. The STANDARD Missile 6 Electronics Unit funding is for the design, systems engineering, analysis, integration, and test of replaced obsolete components. This effort is jointly funded with the Missile Defense Agency for a shared approach to obsolescence and improved capability in defense of the sea base. Initial funding provided for the requirements generation, risk reduction/mitigation, and establishment of development facilities necessary for the commencement of the obsolescence project. The Missile Defense Agency was the contracting office for the risk reduction/mitigation and establishment of development facilities which completed in FY 2020. The USN development effort began in FY 2021, continues through

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments	Project (Number/Name) 3092 / Standard Missile 6 Program				
FY 2025 and remains a jointly funded effort with the Missile Defense Agency. This effort will deliver a SM-6 Block IAU Engineering Change Proposal in Q1 FY 2025 to continue production of SM-6 Block IA Missiles with the Upgraded Electronics Unit.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Electronics Unit (EU) Obsolescence-Upgrade		68.103	70.597	139.552	0.000	139.552
Articles:		-	-	-	-	-
FY 2023 Plans: Complete the Proof of Manufacturing (POM) sensor and Electronic Unit (EU) hardware builds. Complete integration of the EU into the Guidance Section (GS). In addition, provide 6 guidance section builds used as Units Under Test (UUT) to support SM6-Block IAU testing for Guidance Section Qualification, Hazard of Electromagnetic Radiation to Ordnance (HERO), Environmental Testing, Guided Test Vehicle-1 (GTV-1) and Guided Test Vehicle-2 (GTV-2) and an All up Round (AUR) production assembly pathfinder to support flight test round builds. Continue manufacturing assessments and operations support to monitor program manufacturing readiness level and execution of plan to achieve Manufacturing Readiness Level (MRL) 7 in support of transition to production efforts. Complete tactical software builds and Functional Qualification Test (FQT) of software to support GTV-1 and GTV-2. Continue Test and Evaluation Working Group activities, planning and coordination with test range and data collection leads, engineering teams and their support organizations in preparation for conduct of GTV-1 (Q2 FY 2024) and GTV-2 (Q3 FY 2024) test events. Begin planning/coordination activities with same organizations for At-Sea 1 Flight Test (Q1 FY 2025).						
FY 2024 Base Plans: Complete guidance section builds for 6 GS UUTs used to support build of SM-6 BLK IAU Flight test rounds. Complete Manufacturing assessments and operations support and achieve Manufacturing Readiness Level (MRL) 7 in support of Transition to production efforts. Complete tactical software builds and Functional Qualification Test (FQT) of software for GTV-2 and At-Sea-1 Flight test. Continue Test and Evaluation Working Group activities, planning and coordination with Test range and data collection leads, engineering teams and their support organizations. Complete GTV-1 (Q2FY 2024) and GTV-2 (Q3 FY 2024). Continue to prepare for At-Sea 1 Flight Test (Q1 FY 2025) and prepare Technical Data Package for the SM-6 BLK IAU production ECP for delivery in Q1 FY 2025. Support execution of SM-6 Blk IB EMD in FY 2024 as described in 2063 FY 2024 Base plans.						
FY 2024 funding in the amount of \$100.100M for SM-6 Block IB Wholeness was aligned under RDTEN PE 0604366N Project Unit 3092 in error. This program funding should have been allocated to RDTEN PE 0604366N Project Unit 2063. In addition, FY 2024 funding in the amount of \$12.600M in Standard Missile Electronics Unit						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments		Project (Number/Name) 3092 / Standard Missile 6 Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
(EU) Obsolescence was allocated to WPN LI 2234 in error. This program funding should have been allocated to RDTEN PE 0604366N, Project Unit 3092, to address this obsolescence and complete the SM-6 BLK IA effort.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The increase of \$68.956 is due to FY 2024 funding in the amount of \$100.100M for SM-6 Block IB Wholeness was aligned under RDTEN PE 0604366N Project Unit 3092 in error. This program funding should have been allocated to RDTEN PE 0604366N Project Unit 2063. In the interim, this SM-6 Block IB scope is addressed in both PU 2063 and PU 3092 until these adjustments are amended.  In addition, FY 2024 funding in the amount of \$12.600M in Standard Missile Electronics Unit (EU) Obsolescence was allocated to WPN LI 2234 in error. This program funding should have been allocated to RDTEN PE 0604366N, Project Unit 3092, to address this obsolescence and complete the SM-6 BLK IA effort.						
<b>Title:</b> SM-6 System Engineering and Flight Test Support (SEFT)  <b>Articles:</b>		48.227 -	17.788 -	1.273 -	0.000 -	1.273 -
<b>FY 2023 Plans:</b> Testing & Evaluation (T&E) activities to support GTV and IOC of the DDG 51 Flt III and FFG-62. Continue development and test activities for C-Band and an Enhanced Flight Termination System including Engineering Change Proposal implementation, Guided Test Vehicle (GTV) Flight Test Round build, GTV event, GTV flight test report and Transition to Production (TTP). Begin Flight Test Round build to support FY 2024 At Sea DDG 51 FLT III CSSQT Flight Testing. Upgrades NSWC Corona and PMRF range telemetry data processing equipment, flight analysis data tools, and secure management /storage, and portable telemetry data collection that are mandatory for future active missile test and evaluation events. Continue testing of AEGIS Baseline 9 Capability Package 22-1. Continue analyses and trade studies supporting expansion of mission capabilities for the SM-6 Blk IA missile. This mission expansion effort was formerly known as Future Capability Demonstration (FCD). FCD was formerly its own project; it is being employed and future efforts are being incorporated into SEFT in FY 2023 and beyond. C-Band Testing & Evaluation (T&E) activities to support DDG 51 Flt III CSSQT OT events.  <b>FY 2024 Base Plans:</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments		Project (Number/Name) 3092 / Standard Missile 6 Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue planning for future flight testing of Aegis Baselines. Continue providing analysis and support for fleet implementation of the mission expansion capabilities. Plan to combine SEFT and Naval Integrated Fire Control - Counter-Air in FY 2025.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: The decrease of \$16.515M from FY 2023 to FY 2024 is due to the progress of AEGIS Build 9 Capability Package 22-1 and the completion of C-Band telemetry Guided Test Vehicle Event.						
Title: Naval Integrated Fire Control - Counter Air (NIFC-CA)  Articles:  FY 2023 Plans: Continue supporting increment two (2) System of Systems (SOS) integration and test activities and commence work for SM-6 BLK I and IA NIFC-CA related upgrades to include modeling needed to support NIFC-CA assessment and testing.  FY 2024 Base Plans: Continue supporting increment two (2) System of Systems (SOS) integration and test activities commence work for SM-6 BLK I and IA NIFC-CA related software upgrades. Support test events At-Sea 10 and Live Fire Test 10. Plan to incorporate NIFC-CA project into SEFT in FY 2025.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: The increase of \$0.022M from FY 2023 to FY 2024 is due to the of Increment modeling and simulation and flight test (At Sea 10) activities being conducted in FY 2024.		2.935 -	3.406 -	3.428 -	0.000 -	3.428 -
Title: Future Capability Demonstration (FCD)  Articles:  FY 2023 Plans: Incorporated into SEFT  FY 2024 Base Plans:		1.002 -	0.000 -	0.000 -	0.000 -	0.000 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy					<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5			<b>R-1 Program Element (Number/Name)</b> PE 0604366N / <i>Standard Missile Improve ments</i>		<b>Project (Number/Name)</b> 3092 / <i>Standard Missile 6 Program</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Incorporated into SEFT					
<b>FY 2024 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	120.267	91.791	144.253	0.000	144.253

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• WPN 2234: <i>Standard Missile</i>	598.826	572.040	969.525	-	969.525	963.877	1,404.090	1,274.824	1,270.011	6,264.788	18,103.274
• WPN 2234C: <i>Standard Missile</i>	45.357	0.000	227.320	-	227.320	127.830	0.000	0.000	0.000	0.000	688.991

**Remarks**  
 BLI 2234C is the Advanced Procurement. A portion of 2234 is used toward the BLK I/IA procurement. FY 2024 funding in the amount of \$12.600M in Standard Missile Electronics Unit (EU) Obsolescence was allocated to WPN LI 2234 in error. This program funding should have been allocated to RDTEN PE 0604366N, Project Unit 3092, to address this obsolescence and complete the SM-6 BLK IA effort.

**D. Acquisition Strategy**  
 SM-6 Acquisition Strategy signed by OSD AT&L 14 March 2012; SM-6 Block IA Acquisition Strategy change pages signed by ASN RDA 01 July 2022; SM-6 Block IB Acquisition Strategy signed by ASN RDA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 3092 / Standard Missile 6 Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design & Analysis	C/CPFF	RAYTHEON : Tucson, AZ	806.170	30.761	Nov 2021	0.000		20.816	Nov 2023	-		20.816	Continuing	Continuing	Continuing
Design & Analysis	C/CPFF	JHU/APL : Laurel MD	72.073	9.402	Nov 2021	0.000	Jun 2023	3.500	Jun 2024	-		3.500	0.000	84.975	-
Design & Analysis	MIPR	MIT/Lin Lab : Lexington, MA	0.550	0.000		0.000		0.000		-		0.000	0.000	0.550	-
Design & Analysis	WR	NAWC : China Lake/ Techrep	13.894	0.254	Nov 2021	0.000		0.250	Nov 2023	-		0.250	0.000	14.398	-
Design & Analysis	WR	NSWC : Dahlgren	13.988	1.432	Nov 2021	0.000		1.800	Nov 2023	-		1.800	0.000	17.220	-
Design & Analysis	WR	NSWC : Indian Head	3.942	0.000		0.000		0.000		-		0.000	0.000	3.942	-
Design & Analysis	WR	NSWC : PHD	12.940	0.161	Nov 2021	0.000		0.150	Nov 2023	-		0.150	0.000	13.251	-
Design & Analysis	WR	NSWC : Crane	1.256	0.000		0.000		0.000		-		0.000	0.000	1.256	-
Design & Analysis	MIPR	JSPO : Eglin AFB	24.049	0.000		0.000		0.000		-		0.000	0.000	24.049	-
Design & Analysis	C/CPFF	LOCKHEED Martin : Moorestown, NJ	6.724	0.000		0.000		0.000		-		0.000	0.000	6.724	-
Design & Analysis	WR	NSWC : Corona	26.186	3.015	Nov 2021	0.000		0.000		-		0.000	0.000	29.201	-
Design & Analysis	Reqn	ONR : Arlington, VA	5.320	0.000		0.000		0.000		-		0.000	0.000	5.320	-
Design & Analysis	Reqn	NRL : Washington, DC	0.140	0.000		0.000		0.000		-		0.000	0.000	0.140	-
Design & Analysis	WR	COMPTEVFOR : Norfolk, VA	2.620	0.000		0.000		0.000		-		0.000	0.000	2.620	-
Design & Analysis	WR	CARDEROCK : Philadelphia, PA	4.058	0.000		0.000		0.000		-		0.000	0.000	4.058	-
Design & Analysis	WR	NSWC : Pt Mugu	1.643	0.000		0.000		0.000		-		0.000	0.000	1.643	-
Design & Analysis	C/CPFF	BAE : Rockville, MD	6.486	0.000		0.000		0.000		-		0.000	0.000	6.486	-
Design & Analysis	MIPR	ARMY : Redstone	0.350	0.000		0.000		0.000		-		0.000	0.000	0.350	-
Design & Analysis	WR	NAWCAD : Pax River, MD	3.762	0.000		0.000		0.000		-		0.000	0.000	3.762	-
Design & Analysis	C/CPFF	CORVID : Mooresville, NC	15.970	0.000		0.000		0.000		-		0.000	0.000	15.970	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 3092 / Standard Missile 6 Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design & Analysis	C/CPFF	RNB : Arlington, VA	0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	-
Design & Analysis	WR	SPAWAR : Arlington, VA	0.007	0.000		0.000		0.000		-		0.000	0.000	0.007	-
Design & Analysis	WR	ARMY : Cecom	0.066	0.000		0.000		0.000		-		0.000	0.000	0.066	-
Design & Analysis	C/FP	GENERAL DYNAMICS : Falls Church, VA	1.660	0.000		0.000		0.000		-		0.000	0.000	1.660	-
Design & Analysis	WR	VARIOUS : (IWS 1A)	130.356	0.000		0.000		2.000	Nov 2023	-		2.000	0.000	132.356	-
Design & Analysis	WR	VARIOUS : (VLS)	26.024	0.000		0.000		0.000		-		0.000	0.000	26.024	-
Design & Analysis	WR	NSWC : WSMR	2.200	0.000		0.000		0.000		-		0.000	0.000	2.200	-
Design & Analysis	WR	PMRF : Hawaii	3.856	0.000		0.000		0.000		-		0.000	0.000	3.856	-
Design & Analysis	WR	DOI : Washington D.C.	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Design & Analysis	C/CPFF	IWS 3A : Arlington, VA	87.223	71.203	Nov 2021	64.504	Nov 2022	0.000		-		0.000	0.000	222.930	-
Design & Analysis	WR	NSMA : PU 2063	0.000	0.000		0.000		100.100	Nov 2023	-		100.100	0.000	100.100	-
Subtotal			1,273.523	116.228		64.504		128.616		-		128.616	Continuing	Continuing	N/A
Remarks															
FY 2024 funding in the amount of \$100.100M for SM-6 Block IB Wholeness was aligned under RD TEN PE 0604366N Project Unit 3092 in error. This program funding should have been allocated to RD TEN PE 0604366N Project Unit 2063. This FY 2024 funding will be applied to NSMA SM-6 Block IB BMD efforts.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC : Port Hueneme	9.641	0.000		0.208	Nov 2022	0.208	Nov 2023	-		0.208	0.000	10.057	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : WSMR	33.200	0.000		0.500	Nov 2022	3.450	Nov 2023	-		3.450	0.000	37.150	-



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 3092 / Standard Missile 6 Program					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	PMRF : Hawaii	47.601	0.000		0.000		0.006	Nov 2023	-		0.006	0.000	47.607	-
Developmental Test & Evaluation (DT&E)	WR	NAWC : Pt Mugu	6.066	0.000		0.035	Nov 2022	0.842	Nov 2023	-		0.842	0.000	6.943	-
Developmental Test & Evaluation (DT&E)	C/CPAF	RAYTHEON : Tucson, AZ	52.617	0.000		12.103	Nov 2022	1.465	Nov 2023	-		1.465	0.000	66.185	-
Developmental Test & Evaluation (DT&E)	C/CPFF	JHU/APL : Laurel, MD	20.180	0.000		0.577	Nov 2022	0.350	Nov 2023	-		0.350	0.000	21.107	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Corona	18.563	0.000		4.828	Nov 2022	1.882	Nov 2023	-		1.882	0.000	25.273	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Dahlgren	3.765	0.000		0.860	Nov 2022	0.860	Nov 2023	-		0.860	0.000	5.485	-
Developmental Test & Evaluation (DT&E)	WR	VLS : Arlington, VA	2.369	0.000		0.000		0.000		-		0.000	0.000	2.369	-
Developmental Test & Evaluation (DT&E)	WR	COMPTEVFOR : Norfolk, Va	2.119	0.000		0.078	Nov 2022	0.000		-		0.000	0.000	2.197	-
Developmental Test & Evaluation (DT&E)	WR	VARIOUS : (IWS 1A)	6.033	0.000		0.350	Nov 2022	0.000		-		0.000	0.000	6.383	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Carderock	2.580	0.000		0.000		0.000		-		0.000	0.000	2.580	-
Developmental Test & Evaluation (DT&E)	WR	NAWC : China Lake	10.419	0.000		0.398	Nov 2022	0.000		-		0.000	0.000	10.817	-
Developmental Test & Evaluation (DT&E)	WR	ONR : Arlington, Va	3.425	0.000		0.000		0.000		-		0.000	0.000	3.425	-
Developmental Test & Evaluation (DT&E)	WR	DOI : Washington D.C.	0.545	0.000		0.000		0.000		-		0.000	0.000	0.545	-
Subtotal			219.123	0.000		19.937		9.063		-		9.063	0.000	248.123	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments				Project (Number/Name) 3092 / Standard Missile 6 Program					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Services	C/CPAF	VARIOUS : Various	48.665	4.000	Nov 2021	5.000	Nov 2022	4.563	Nov 2023	-		4.563	0.000	62.228	-
Travel	Various	IWS3 : Arlington, VA	1.671	0.039	Nov 2021	0.020	Nov 2022	0.000		-		0.000	0.000	1.730	-
DAWDF	C/FP	Not Specified : Not Specified	1.130	0.000		0.000		0.000		-		0.000	0.000	1.130	-
Program Management	Various	IWS3 : Arlington, VA	1.897	0.000		2.330	Nov 2022	2.011	Nov 2023	-		2.011	0.000	6.238	-
Subtotal			53.363	4.039		7.350		6.574		-		6.574	0.000	71.326	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,546.009	120.267		91.791		144.253		-		144.253	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604366N / Standard Missile Improve  
ments

## Project (Number/Name)

3092 / Standard Missile 6 Program

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Proj 3092</b>																												
NIFC-CA Live Fire Test 8																												
NIFC-CA At-Sea Test 8																												
NIFC-CA At-Sea Test 10																												
NIFC-CA Test (1)																												
NIFC-CA Test (2)																												
NIFC-CA Test (3)																												
NIFC-CA Test (4)																												
NIFC-CA Test (5)																												
NIFC-CA Test (6)																												
System Engineering and Flight Test SM-6 Block IA Software Upgrade Flt Test																												
System Engineering and Flight Test AEGIS Baseline 9 (1)																												
System Engineering and Flight Test AEGIS Baseline 9 (2)																												
C-Band and Enhanced Flight Termination System Critical Design Review																												
C-Band and Enhanced Flight Termination System Qualification Test																												
C-Band and Enhanced Flight Termination Ground Test Vehicle Event and Report																												
C-Band and EFT Sys Transition and FY24 FTR ISO DDG 51 FLT III CSSQT Flight Test																												
DDG 51 FLT III Combat System Ships Qualification Trials																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																		Date: March 2023										
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments										Project (Number/Name) 3092 / Standard Missile 6 Program								
	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Electronics Unit Critical Design Review	■																											
Electronics Unit Guided Test Vehicle Test (1)	■																											
Electronics Unit Guided Test Vehicle Test (2)	■																											
Electronics Unit At-Sea Test	■																											
Electronics Unit Engineering Change Proposal for Production	■																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604366N / <i>Standard Missile Improve ments</i>	<b>Project (Number/Name)</b> 3092 / <i>Standard Missile 6 Program</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3092</b>				
NIFC-CA Live Fire Test 8	1	2022	1	2022
NIFC-CA At-Sea Test 8	3	2022	3	2022
NIFC-CA At-Sea Test 10	4	2024	4	2024
NIFC-CA Test (1)	2	2025	2	2025
NIFC-CA Test (2)	3	2025	3	2025
NIFC-CA Test (3)	2	2026	2	2026
NIFC-CA Test (4)	3	2026	3	2026
NIFC-CA Test (5)	2	2027	2	2027
NIFC-CA Test (6)	3	2027	3	2027
System Engineering and Flight Test SM-6 Block IA Software Upgrade Flt Test	4	2022	4	2022
System Engineering and Flight Test AEGIS Baseline 9 (1)	4	2023	4	2023
System Engineering and Flight Test AEGIS Baseline 9 (2)	4	2024	4	2024
C-Band and Enhanced Flight Termination System Critical Design Review	3	2022	3	2022
C-Band and Enhanced Flight Termination System Qualification Test	4	2022	3	2023
C-Band and Enhanced Flight Termination Ground Test Vehicle Event and Report	3	2023	4	2023
C-Band and EFT Sys Transition and FY24 FTR ISO DDG 51 FLT III CSSQT Flight Test	4	2023	2	2024
DDG 51 FLT III Combat System Ships Qualification Trials	2	2024	4	2024
Electronics Unit Critical Design Review	1	2022	1	2022
Electronics Unit Guided Test Vehicle Test (1)	2	2024	2	2024
Electronics Unit Guided Test Vehicle Test (2)	3	2024	3	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604366N / Standard Missile Improve ments		Project (Number/Name) 3092 / Standard Missile 6 Program	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Electronics Unit At-Sea Test		1	2025	1	2025
Electronics Unit Engineering Change Proposal for Production		1	2025	1	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	87.314	10.838	10.882	11.368	-	11.368	11.126	11.336	11.471	11.700	Continuing	Continuing
4026: Net-Centric Sensor Analysis for Mine Warfare (NSAM)	76.312	9.885	9.924	10.367	-	10.367	10.142	10.335	10.456	10.665	Continuing	Continuing
9179: Surf Navy Integ Undersea Tactical Tech	11.002	0.953	0.958	1.001	-	1.001	0.984	1.001	1.015	1.035	Continuing	Continuing

## A. Mission Description and Budget Item Justification

The Airborne Mine Countermeasures (AMCM) Program Element (PE) previously provided resources to develop advanced Mine Countermeasures (MCM) systems, which are now in production. It currently funds post mission analysis software, integrated tactics and tactics training for mine warfare operations, and post mission analysis proficiency training. The MCM systems provide mobile, quick reaction forces capable of land or sea-based minehunting and mines countermeasures operations worldwide. Resources are for developing and deploying advanced mine-sweeping systems and the intelligence and oceanographic capabilities that will enable mine warfare superiority. Tactics and techniques used vary across a diversity of environments and threats, including both asymmetric and emerging. Resources provide for systems and support of mine warfare systems and expeditionary systems to allow for continuous operations of the Navy's warships and support vessels, other military vessels, and commercial vessels. Core capabilities include forward presence, deterrence, sea control, power projection, maritime security, humanitarian assistance and disaster response to maintain freedom of the seas. Capability improvements include reducing post-mission analysis time; reducing detect, classify, and identify decision time; improving neutralization time; improving network communications; automatic target recognition; and achieving in-stride detect-to-engage capability. Concept-of-operations include development of cooperative, modular systems with a common post mission analysis system providing advanced tools to automate the complex problem of contact management for the thousands of recorded detections and the establishment of capable networked command and control systems. Efforts benefit the MCM force by transforming the Navy from the platform-centered legacy set of systems to a capability-centered force that is distributed, networked, and able to provide unique maritime influence and access across the entire maritime domain. The Airborne Mine Countermeasures (AMCM) programs will provide detection, classification, localization, identification, neutralization, influence sweep, and post mission analysis capabilities. This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA).

Project 4026 Net-Centric Sensor Analysis for Mine Warfare (NSAM) also includes the Integrated Tactics project. NSAM is the next generation post mission analysis (PMA) system which will replace the Organic Post Mission Analysis (OPMA) system. NSAM will be the single tactical and environmental PMA system for all Mine Warfare (MIW) sensor data and will provide integrated contact management capabilities. NSAM creates a collaborative, multi-data set, multi-user environment with the goal of reducing the mission timeline and increasing the mission effectiveness. NSAM is designed with an extensible architecture, to ease integration of additional sensors and advanced algorithms. The Integrated Tactics project develops tactics at the MIW Staff and MCM Scenario level. Project provides new MIW tactics theory and Fleet tactics training for MIW Staffs Theory and tactics are documented and published into doctrine for Fleet users.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures			
Project 9179, Surface Navy Integrated Undersea Tactical Technology (SNIUTT) is a software tool which provides contact recognition training modules for Mine Countermeasures (MCM) sensor systems and runs on existing PMA and training systems.					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	10.881	10.882	11.154	-	11.154
Current President's Budget	10.838	10.882	11.368	-	11.368
Total Adjustments	-0.043	0.000	0.214	-	0.214
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.043	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.214	-	0.214
Change Summary Explanation					
FY 2022 reduced by \$43K for SBIR assessments.					
FY 2023 no adjustments					
FY 2024 +\$214K misc. rate adjustments					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures				Project (Number/Name) 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
4026: Net-Centric Sensor Analysis for Mine Warfare (NSAM)	76.312	9.885	9.924	10.367	-	10.367	10.142	10.335	10.456	10.665	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Project 4026: Net-centric Sensor Analysis for Mine Warfare (NSAM) includes both NSAM and the Integrated Tactics project. NSAM will replace the Organic Post Mission Analysis (OPMA) system, which provides post mission analysis (PMA) capabilities for the Airborne Laser Mine Detection System (ALMDS), the Airborne Mine Neutralization System (AMNS), and a separate module for contact management. NSAM will be the single tactical and environmental PMA system for all Mine Warfare (MIW) sensor data and will provide integrated contact management capabilities. NSAM creates a collaborative, multi-data set, multi-user environment with the goal of reducing the mission timeline and increasing the mission effectiveness. NSAM is designed with an extensible architecture, to ease integration of additional sensors and advanced algorithms. The Integrated Tactics project develops tactics at the MIW Staff and MCM Scenario level. Project provides new MIW tactics theory and Fleet tactics training for MIW Staffs. Theory and tactics are documented and published into doctrine for Fleet users.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> NSAM Product Development	6.937	7.087	7.447	0.000	7.447
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> -Continue NSAM software development for v1.5 AN/AQS-20C PMA. -Begin v1.3 development for annual release, to meet Information Systems Capability Development Document (IS-CDD) requirements. -Develop v1.2.5 RHEL 8 installer build. -Support tactics training needs for MIW Staffs by developing wargame scenarios and conducting wargames.					
<b>FY 2024 Base Plans:</b> -Continue NSAM software development for v1.5, AN/AQS-20C PMA. -Begin v1.4 development for annual release, to meet Information Systems Capability Development Document (IS-CDD) requirements. -Support tactics training needs for MIW Staffs by developing wargame scenarios and conducting wargames.					
<b>FY 2024 OCO Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures		Project (Number/Name) 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 increase associated with planned software development for v1.4 additional CDD requirements build and v1.5 AN/AQS-20C PMA.						
Title: Engineering Services/ILS:  Articles:  FY 2023 Plans: -Continue requirements analysis of new draft NSAM Information Systems Capability Development Document (IS-CDD). - Continue providing NSAM engineering support to LCS MCM Mission Package, following their TECHEVAL and IOT&E. - Adjudicate test observation reports (TORs) and document them as software backlog items. - Maintain cybersecurity compliance. Continue applying RMF guidelines and implement continuous monitoring strategy adhering to the ATO requirements. Conduct RMF ATO renewal process, to renew ATO by 1QFY24.  FY 2024 Base Plans: - Continue tracking implementation of high-level requirements. - Adjudicate test observation reports (TORs) and document them as software backlog items. - Continue applying RMF guidelines and implement continuous monitoring strategy adhering to the ATO requirements.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: No significant scope changes from FY2023 to FY2024.		2.159 -	1.949 -	2.212 -	0.000 -	2.212 -
Title: Test and Evaluation  Articles:  FY 2023 Plans: - Conduct quarterly incremental tests of engineering builds. - Conduct v1.2.5 developmental test (DT).		0.267 -	0.527 -	0.164 -	0.000 -	0.164 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures			Project (Number/Name) 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
- Develop test materials for v1.3 DT and begin v1.3 DT. <b>FY 2024 Base Plans:</b> - Conduct quarterly incremental tests of engineering builds. - Complete v1.3 DT. - Develop test materials in preparation for v1.4 DT. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> No significant scope changes from FY2023 to FY2024.											
Title: Management Support  <div>Articles:</div> <b>FY 2023 Plans:</b> - Continue to plan, track, follow-up and report on cost, schedule, and performance status. - Conduct management and oversight of project technical processes. <b>FY 2024 Base Plans:</b> - Continue to plan, track, follow-up and report on cost, schedule, and performance status. - Conduct management and oversight of project technical processes. - Conduct Milestone B and address actions following the Milestone B review. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> No significant scope changes from FY2023 to FY2024.						0.522 -	0.361 -	0.544 -	0.000 -	0.544 -	
Accomplishments/Planned Programs Subtotals						9.885	9.924	10.367	0.000	10.367	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4248: Legacy Airborne MCM	4.443	4.689	12.202	-	12.202	10.786	12.116	12.356	12.269	0.000	170.589

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures	Project (Number/Name) 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)	

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
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**Remarks**  
-NSAM is item 2 in the OPN line item above. NSAM's portion of the OPN funding is \$0.801 in FY 2024, \$0.740 in FY 2025, and \$0.589 in FY 2026.  
-OPN funding, FY 2024-2026 supports hardware procurement to address DMSMS, obsolescence issues, and processing power requirements. Funding supports partial replacement of existing hardware.

D. Acquisition Strategy

The NSAM project is executed by government-led teams at Naval Surface Warfare Center (NSWC) Panama City Division (PCD) and Naval Research Laboratory - Stennis Space Center (NRL-SSC), with additional services provided by contractor support labor. NSAM is currently a pre-acquisition category IV-monitor program and plans to enter the acquisition process at Milestone B.

The Integrated Tactics project is executed by a government team at NSWC PCD.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures				Project (Number/Name) 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware/Software Development	WR	NSWC PCD : Panama City FL	40.485	4.553	Oct 2021	4.277	Oct 2022	4.578	Oct 2023	-		4.578	Continuing	Continuing	Continuing
Hardware/Software Development	WR	NRL-SSC : Bay St. Louis, MS	8.691	2.019	Oct 2021	2.445	Oct 2022	2.504	Oct 2023	-		2.504	Continuing	Continuing	Continuing
Hardware/Software Development	C/CPFF	Various: NSWC PC : Panama City, FL	0.730	0.365	Oct 2021	0.365	Oct 2022	0.365	Oct 2023	-		0.365	0.000	1.825	-
Subtotal			49.906	6.937		7.087		7.447		-		7.447	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Logistics Support	C/CPFF	NSWC PCD : Various	0.920	0.190	Oct 2021	0.440	Oct 2022	0.190	Oct 2023	-		0.190	0.000	1.740	-
Engineering and Logistics Support	WR	NSWC PCD : Panama City, FL	18.233	1.969	Oct 2021	1.509	Oct 2022	2.022	Oct 2023	-		2.022	Continuing	Continuing	Continuing
Subtotal			19.153	2.159		1.949		2.212		-		2.212	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC PC : Panama City, FL	3.527	0.267	Oct 2021	0.263	Oct 2022	0.164	Oct 2023	-		0.164	0.000	4.221	-
Developmental Test & Evaluation (DT&E)	WR	JHU-APL : Laurel, MD	0.356	0.000	Oct 2021	0.100	Oct 2022	0.000		-		0.000	0.000	0.456	-
Developmental Test & Evaluation (DT&E)	C/CPFF	NSWC PC : Various	0.164	0.000	Oct 2021	0.164	Oct 2022	0.000		-		0.000	0.000	0.328	-
Subtotal			4.047	0.267		0.527		0.164		-		0.164	0.000	5.005	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures				Project (Number/Name) 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support	WR	NSWC PC : Panama City FL	3.163	0.522	Oct 2021	0.361	Oct 2022	0.544	Oct 2023	-		0.544	Continuing	Continuing	Continuing
Acquisition Workforce Fund	Various	Various : Various	0.043	0.000		0.000		0.000		-		0.000	0.000	0.043	-
Subtotal			3.206	0.522		0.361		0.544		-		0.544	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			76.312	9.885		9.924		10.367		-		10.367	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

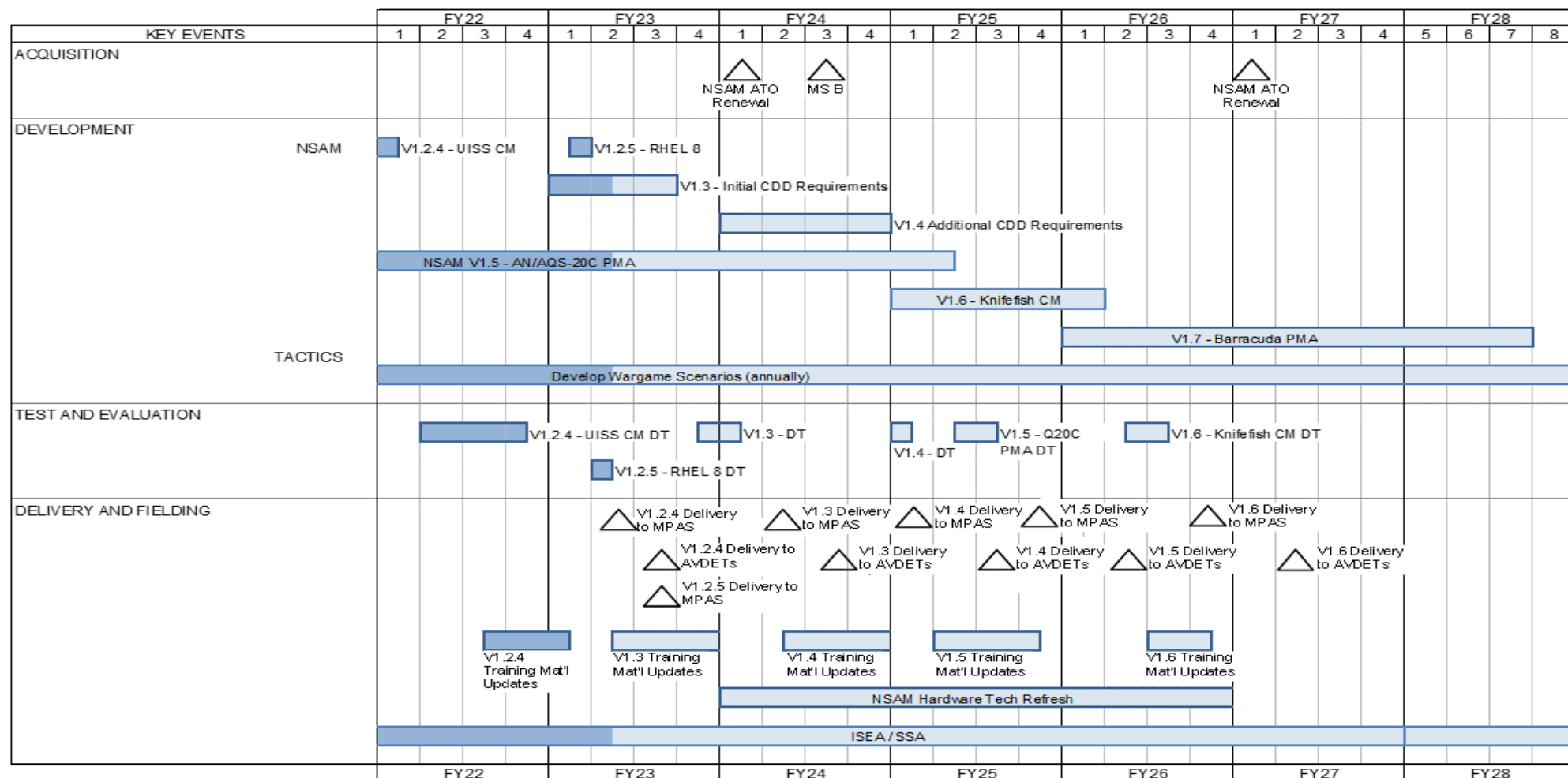
1319 / 5

R-1 Program Element (Number/Name)

PE 0604373N / Airborne Mine Countermeasures

Project (Number/Name)

4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604373N / Airborne Mine Countermeasures	<b>Project (Number/Name)</b> 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 4026</b>				
Acquisition Milestones: NSAM: Milestone B	3	2024	3	2024
Acquisition Milestones: NSAM ATO Renewal	1	2024	1	2024
Acquisition Milestones: NSAM ATO Renewal 2	1	2027	1	2027
Acquisition Milestones: NSAM: S/W Development Build 1.2.4 UISS Contact Management	1	2022	1	2022
Acquisition Milestones: NSAM: S/W Development Build 1.2.5 RHEL 8 Installer	1	2023	1	2023
Acquisition Milestones: NSAM: S/W Development Build 1.5 AN/AQS-20C PMA	1	2022	2	2025
Acquisition Milestones: NSAM: S/W Development Build 1.3 initial CDD requirements	1	2023	3	2023
Acquisition Milestones: NSAM: S/W Development Build 1.4 additional CDD requirements	1	2024	4	2024
Acquisition Milestones: NSAM: S/W Development Build 1.6 Knifefish Contact Management	1	2025	1	2026
Acquisition Milestones: NSAM: S/W Development Build 1.7 Barracuda PMA	1	2026	3	2028
Acquisition Milestones: Tactics: S/W Development Build: Develop wargame scenarios	1	2022	4	2028
Test & Evaluation: NSAM: Developmental Testing Build 1.2.4 UISS Contact Management	2	2022	4	2022
Test & Evaluation: NSAM: Developmental Testing Build 1.2.5 RHEL 8 Installer	2	2023	2	2023
Test & Evaluation: NSAM: Developmental Testing Build 1.3 initial CDD requirements	4	2023	1	2024
Test & Evaluation: NSAM: Developmental Testing Build 1.4 additional CDD requirements	1	2025	1	2025
Test & Evaluation: NSAM: Developmental Testing Build 1.5 AN/AQS-20C PMA	2	2025	3	2025
Test & Evaluation: NSAM: Developmental Testing Build 1.6 Knifefish Contact Management	2	2026	3	2026



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures		Project (Number/Name) 4026 / Net-Centric Sensor Analysis for Mine Warfare (NSAM)	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
NSAM Deliveries: Build 1.2.4 UISS Contact Management (MPAS)		2	2023	2	2023
NSAM Deliveries: Build 1.2.4 UISS Contact Management (AVDETs)		3	2023	3	2023
NSAM Deliveries: Build 1.2.5 RHEL 8 Installer		3	2023	3	2023
NSAM Deliveries: Build 1.3 initial CDD requirements (MPAS)		2	2024	2	2024
NSAM Deliveries: Build 1.3 initial CDD requirements (AVDETs)		3	2024	3	2024
NSAM Deliveries: Build 1.4 additional CDD requirements (MPAS)		1	2025	1	2025
NSAM Deliveries: Build 1.4 additional CDD requirements (AVDETs)		3	2025	3	2025
NSAM Deliveries: Build 1.5 AN/AQS-20C PMA (MPAS)		4	2025	4	2025
NSAM Deliveries: Build 1.5 AN/AQS-20C PMA (AVDETs)		2	2026	2	2026
NSAM Deliveries: Build 1.6 Knifefish Contact Management (MPAS)		4	2026	4	2026
NSAM Deliveries: Build 1.6 Knifefish Contact Management (AVDETS)		2	2027	2	2027
NSAM Deliveries: NSAM: Build 1.2.4 UISS CM Training Material Update		3	2022	1	2023
NSAM Deliveries: NSAM: Build 1.3 initial CDD requirements Training Material Update		2	2023	4	2023
NSAM Deliveries: NSAM: Build 1.4 additional CDD requirements Training Material Update		2	2024	4	2024
NSAM Deliveries: NSAM: Build 1.5 AN/AQS-20C PMA Training Material Update		2	2025	4	2025
NSAM Deliveries: NSAM: Build 1.6 Knifefish CM Training Material Update		3	2026	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures				Project (Number/Name) 9179 / Surf Navy Integ Undersea Tactical Tech			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9179: Surf Navy Integ Undersea Tactical Tech	11.002	0.953	0.958	1.001	-	1.001	0.984	1.001	1.015	1.035	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Surface Navy Integrated Undersea Tactical Technology (SNIUTT) is a software tool which provides contact recognition training modules for Mine Countermeasures (MCM) sensor systems. SNIUTT training modules include skills and refresher/proficiency training; the contact recognition training focuses on detection, classification, and identification of mine-like contacts. The modules run on existing PMA and training systems; this implementation reinforces PMA procedures for Fleet operators. Modules are customized based on Fleet-user needs for a specific weapons system and are used both in the classroom and at the squadrons, as contact recognition is a perishable skill. SNIUTT training modules are available for the following systems: 1) Post Mission Analysis training systems for AN/AQS-24; 2) Coastal Battlefield Reconnaissance and Analysis (COBRA) training systems for COBRA sensors; 3) Organic Post Mission Analysis (OPMA) for ALMDS and the Contact Management Tool; and 4) Net-centric Sensor Analysis for Mine Warfare (NSAM) PMA system for ALMDS.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Product Development	0.600	0.623	0.619	0.000	0.619
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> - Conduct SNIUTT v1.3.5 software development, which will include additional AN/AQS-24C components, COBRA training updates and NSAM scenario import/export functionality; components for NSAM AN/AQS-20C deferred to FY24 when data to support development will be available.					
<b>FY 2024 Base Plans:</b> - Conduct SNIUTT v1.3.6 software development, which will include initial components for NSAM AN/AQS-20C					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> No significant scope changes from FY2023 to FY2024.					
<b>Title:</b> Engineering and Logistics Support	0.353	0.335	0.382	0.000	0.382
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					

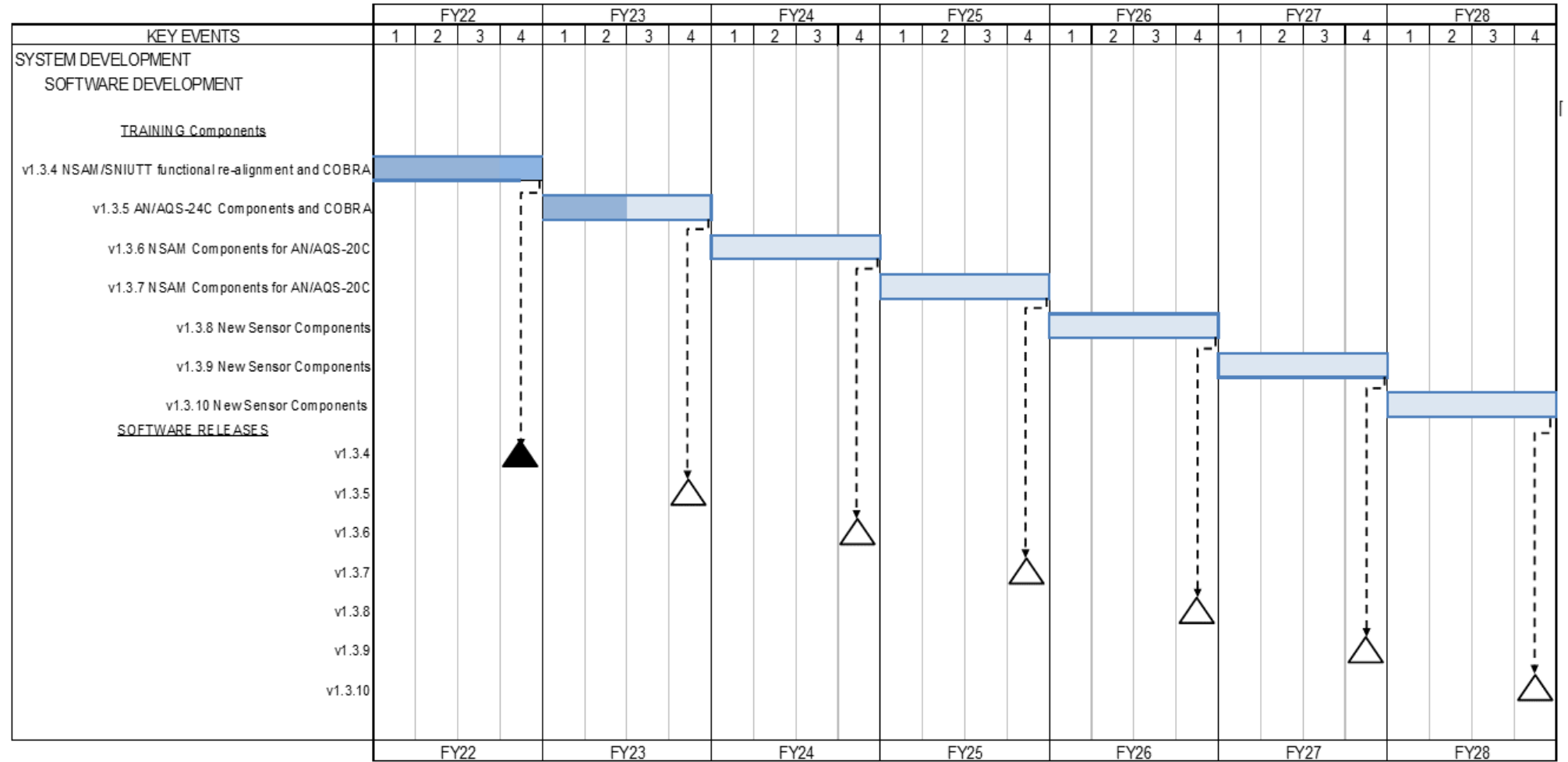
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604373N / Airborne Mine Countermeasures		<b>Project (Number/Name)</b> 9179 / Surf Navy Integrated Undersea Tactical Tech		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<ul style="list-style-type: none"> <li>- Develop high-level and derived requirements for SNIUTT v1.3.5 and v1.3.6 software products.</li> <li>- Develop SNIUTT interface documentation.</li> <li>- Perform configuration management of system requirements, develop engineering change proposals, manage ticket backlogs. Maintain SNIUTT source code repository, requirements, and documents.</li> <li>- Develop test plan and test cases, provide test results, and generate test reports. Execute test events for each SNIUTT build.</li> </ul> <p><b><i>FY 2024 Base Plans:</i></b></p> <ul style="list-style-type: none"> <li>- Develop high-level and derived requirements for SNIUTT v1.3.6 and v1.3.7 software products.</li> <li>- Perform configuration management of system requirements, develop engineering change proposals, manage ticket backlogs. Maintain SNIUTT source code repository, requirements, and documents.</li> <li>- Develop test plan and test cases, provide test results, and generate test reports. Execute test events for each SNIUTT build.</li> </ul> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> No significant scope changes from FY2023 to FY2024.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		0.953	0.958	1.001	0.000	1.001
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b> Surface Navy Integrated Undersea Tactical Technology (SNIUTT) is executed by a government-led team at NSWC PCD.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604373N / Airborne Mine Countermeasures				Project (Number/Name) 9179 / Surf Navy Integ Undersea Tactical Tech					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development	WR	NSWC PC : Panama City FL	9.051	0.600	Oct 2021	0.623	Oct 2022	0.619	Oct 2023	-		0.619	Continuing	Continuing	Continuing
Subtotal			9.051	0.600		0.623		0.619		-		0.619	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Logistics Support	WR	NSWC, PC : Panama City FL	1.951	0.353	Oct 2021	0.335	Oct 2022	0.382	Oct 2023	-		0.382	Continuing	Continuing	Continuing
Subtotal			1.951	0.353		0.335		0.382		-		0.382	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			11.002	0.953		0.958		1.001		-		1.001	Continuing	Continuing	N/A
Remarks															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 5		PE 0604373N / Airborne Mine Countermeasures		9179 / Surf Navy Integ Undersea Tactical Tech	



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604373N / Airborne Mine Countermeasures	<b>Project (Number/Name)</b> 9179 / Surf Navy Integ Undersea Tactical Tech	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>SNIUTT</b>				
System Development: SNIUTT Software Development: v1.3.4 NSAM/SNUITT re-alignment and COBRA	1	2022	3	2022
System Development: SNIUTT Software Development: v1.3.4 software release	4	2022	4	2022
System Development: SNIUTT Software Development: v1.3.5 AN/AQS-24C Components, COBRA and NSAM functionality	3	2022	3	2023
System Development: SNIUTT Software Development: v1.3.5 software release	4	2023	4	2023
System Development: SNIUTT Software Development: v1.3.6 NSAM Components for AN/AQS-20C	1	2024	3	2024
System Development: SNIUTT Software Development: v1.3.6 software release	4	2024	4	2024
System Development: SNIUTT Software Development: v1.3.7 NSAM Components for AN/AQS-20C	1	2025	3	2025
System Development: SNIUTT Software Development: v1.3.7 software release	4	2025	4	2025
System Development: SNIUTT Software Development: v1.3.8 New sensor components	1	2026	3	2026
System Development: SNIUTT Software Development: v1.3.8 software release	4	2026	4	2026
System Development: SNIUTT Software Development: v1.3.9 New sensor components	1	2027	3	2027
System Development: SNIUTT Software Development: v1.3.9 software release	4	2027	4	2027
System Development: SNIUTT Software Development: v1.3.10 New sensor components	1	2028	3	2028
System Development: SNIUTT Software Development: v1.3.10 software release	4	2028	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	342.599	49.110	45.892	66.445	-	66.445	70.326	73.698	77.488	71.958	Continuing	Continuing
2757: All Domain Long Range Naval Integrated Fire Control (LR-NIFC)	0.000	0.000	0.000	25.000	-	25.000	25.500	26.010	26.350	27.061	Continuing	Continuing
3159: Naval Integrated Fire Control-Counter Air SE&I	328.046	34.240	36.181	29.820	-	29.820	32.170	34.851	37.858	31.422	Continuing	Continuing
3242: NIFC-CA Supported by Airborne Platforms	14.553	8.595	9.711	11.625	-	11.625	12.656	12.837	13.280	13.475	Continuing	Continuing
9999: Congressional Adds	0.000	6.275	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.275

## **A. Mission Description and Budget Item Justification**

PU 2757 All domain Long Range Networked Fires (LRNF) is a cross organizational Systems Engineering, Integration and Test (SEIT) project to coordinate and align the acquisition enterprise for the delivery of effective and interoperable long range kill chains. This effort will coordinate development and validation of all kill chain components across key enabler programs that include sensors, networks, transport architectures, radios, weapons, platforms, and combat systems across warfighting domains. The project will include joint architecture and Battle Management Command and Control (BMC2) development and maturation, including integration of the key enabler programs to optimize current and emerging capabilities across Navy and other mission partners. Development and execution of the LRNF integrated System of Systems (SoS) acquisition approach will prioritize nearer term fielding of effective capabilities, while continuing to mature solutions and informing investments across the portfolio.

3159 Naval Integrated Fire Control (NIFC) SEI&T project is a systems engineering effort to extend the Naval Integrated Air and Missile Defense battlespace out to the maximum kinematic range of our weapons for the air, surface, and strike warfare missions. This includes targets beyond the detection range of the shooter. The NIFC project exploits capabilities inherent in existing systems, optimizes current and emerging technologies in component system upgrades, integrates them together, and performs kill chain tests, forming an interoperable System of Systems (SoS) to maximize future defense capabilities. As directed by OPNAV, the project is focused on SEI&T efforts to integrate the From The Sea (FTS) family of kill chains which includes an elevated sensor, platform, fire control system, and missile, along with introducing other networks and sensors coordinating with other DOD activities as appropriate. Along with executing NIFC Inc 2 developmental test & fielding the SEIT supports the design of the current kill chain and system configuration and architectures. Future NIFC efforts (e.g. NIFC Inc 3) includes SEIT activities across a broad range of systems and architectures.

3242 Naval Integrated Fire Control (NIFC) From the Air (FTA) SEI&T project is a systems engineering effort to integrate NIFC FTA capabilities within "Pillar Programs" (F/A-18 & EA-18G, E-2D, F-35, Link-16 and Tactical Targeting Network Technology Data Links, and all USN air launched Air-to-Air and Air-to-Surface weapons). Based on the advancing threat, there remains an imperative to improve lethality, survivability and interoperability by extending the battlespace out to the

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				
maximum kinematic range of our weapons for the air, surface, and strike warfare missions. The NIFC FTA project leverages capabilities inherent in existing systems, optimizes current and emerging technologies in platform system upgrades, and integrates them together to form interoperable System of Systems (SoS) to maximize offensive and defensive FTA integrated capabilities. As directed from OPNAV, the project is focused on development of Air Warfare, Surface Warfare, and Strike Warfare FTA effects chains. This PU will support efforts that include decomposing SoS requirements into Mission Technical Baselines (MTBs) and Integrated Capability Technical Baselines (ICTBs) for requirement allocation to Pillar Programs. Additionally, this PU will support NIFC pillar program coordination to provide performance predictions, performance assessments, and SoS risk reduction activities through Live, Virtual, and Constructive (LVC) events, SoS exercises, and development of Requirements Test and Verification Matrices (RTVMs) to support Developmental and Operational Test for the individual platforms. In lieu of a traditional Test and Evaluation Master Plan (TEMP), NIFC FTA test strategies will be developed to identify resources required to evaluate NIFC FTA capabilities, and describe how NIFC FTA capabilities will be evaluated prior to fleet delivery.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		50.233	45.892	51.770	-	51.770
Current President's Budget		49.110	45.892	66.445	-	66.445
Total Adjustments		-1.123	0.000	14.675	-	14.675
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-1.123	0.000			
• Program Adjustments		0.000	0.000	14.458	-	14.458
• Rate/Misc Adjustments		0.000	0.000	0.217	-	0.217
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 9999: Congressional Adds						
Congressional Add: Stratospheric balloons						
Congressional Add Subtotals for Project: 9999						
Congressional Add Totals for all Projects						
Change Summary Explanation						
FY24: Increase is offset for establishing newly created R&D Project #2757- Long Range Naval Integrated Control (LR-NIFC).						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 2757 / All Domain Long Range Naval Integrated Fire Control (LR-NIFC)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2757: All Domain Long Range Naval Integrated Fire Control (LR-NIFC)	0.000	0.000	0.000	25.000	-	25.000	25.500	26.010	26.350	27.061	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

All domain Long Range Networked Fires (LRNF) is a cross organizational Systems Engineering, Integration and Test (SEIT) project to coordinate and align the acquisition enterprise for the delivery of effective and interoperable long range kill chains. This effort will coordinate development and validation of all kill chain components across key enabler programs that include sensors, networks, transport architectures, radios, weapons, platforms, and combat systems across warfighting domains. The project will include joint architecture and Battle Management Command and Control (BMC2) development and maturation, including integration of the key enabler programs to optimize current and emerging capabilities across Navy and other mission partners. Development and execution of the LRNF integrated System of Systems (SoS) acquisition approach will prioritize nearer term fielding of effective capabilities, while continuing to mature solutions and informing investments across the portfolio.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Development, Integration, and fielding of effective all domain Long Range Networked Fires.	0.000	0.000	25.000	0.000	25.000
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> All domain Long Range Networked Fires (LRNF) is a cross organizational Systems Engineering, Integration and Test (SEIT) project to coordinate and align the acquisition enterprise for the delivery of effective and interoperable long range kill chains. This effort will coordinate development and validation of all kill chain components across key enabler programs that include sensors, networks, transport architectures, radios, weapons, platforms, and combat systems across warfighting domains. The project will include joint architecture and Battle Management Command and Control (BMC2) development and maturation, including integration of the key enabler programs to optimize current and emerging capabilities across Navy and other mission partners. Development and execution of the LRNF integrated System of Systems (SoS) acquisition approach will prioritize nearer term fielding of effective capabilities, while continuing to mature solutions and informing investments across the portfolio.					
<b>FY 2023 Plans:</b> NA					
<b>FY 2024 Base Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		<b>Project (Number/Name)</b> 2757 / All Domain Long Range Naval Integrated Fire Control (LR-NIFC)		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Development of required digital architectures and key enablers aligned with ongoing programs. Activities will include the utilization of mission thread teams to evaluate capabilities, gaps, development of validation and test plans, systems engineering activities, and identification of critical investment opportunities. Begin Battle Management Command and Control (BMC2) software development and establishment of Operational Center for LRNF, including execution of Systems Requirement Review (SRR). Additionally, will refine and develop necessary Concept of Employment (CONEMP), in coordination with Warfare Development Centers (WDCs) and OPNAV, to achieve required military effect. Will execute systems engineering and integration efforts across enabler capabilities to deliver interoperable kill chains.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase in FY 2024 is for the execution of tasking within Long Range Networked Fires (LRNF) for development and maturation of Battle Management Command and Control (BMC2) software and establishment of operational center for LRNF. Increase also includes additional systems engineering, integration, and test development across all key LRNF enablers.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		0.000	0.000	25.000	0.000	25.000
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
Not Applicable						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 2757 / All Domain Long Range Naval Integrated Fire Control (LR-NIFC)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	C/CPFF	JHU/APL : Laurel, MD	0.000	0.000		0.000		1.823	Oct 2023	-		1.823	Continuing	Continuing	Continuing
System Engineering	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.000		1.225	Oct 2023	-		1.225	Continuing	Continuing	Continuing
System Engineering	WR	NAWC AD : Pax River, MD	0.000	0.000		0.000		1.487	Oct 2023	-		1.487	Continuing	Continuing	Continuing
System Engineering	Various	Various : Various	0.000	0.000		0.000		1.325	Oct 2023	-		1.325	Continuing	Continuing	Continuing
System Engineering	WR	NAWC WD : China Lake, CA	0.000	0.000		0.000		1.967	Oct 2023	-		1.967	Continuing	Continuing	Continuing
System Engineering	WR	NAVWAR : San Diego, CA	0.000	0.000		0.000		0.325	Oct 2023	-		0.325	Continuing	Continuing	Continuing
System Engineering	WR	NAVSEA : Washington, DC	0.000	0.000		0.000		0.924	Oct 2023	-		0.924	Continuing	Continuing	Continuing
System Engineering	WR	NIWC : San Diego, CA	0.000	0.000		0.000		1.825	Oct 2023	-		1.825	Continuing	Continuing	Continuing
System Engineering	C/CPFF	NSMA : Various	0.000	0.000		0.000		7.775	Oct 2023	-		7.775	Continuing	Continuing	Continuing
System Engineering	WR	NUWC : Newport, RI	0.000	0.000		0.000		0.325	Oct 2023	-		0.325	Continuing	Continuing	Continuing
System Engineering	C/CPFF	MIT LL : Lexington, MA	0.000	0.000		0.000		0.325	Oct 2023	-		0.325	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		19.326		-		19.326	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	COTF : Norfolk, VA	0.000	0.000		0.000		0.139	Oct 2023	-		0.139	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NIWC : San Diego, CA	0.000	0.000		0.000		1.550	Oct 2023	-		1.550	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	0.000	0.000		0.000		0.925	Oct 2023	-		0.925	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 2757 / All Domain Long Range Naval Integrated Fire Control (LR-NIFC)					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		1.835	Oct 2023	-		1.835	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		4.449		-		4.449	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Planning and Support	WR	NAWCAD : Pax River, MD	0.000	0.000		0.000		0.525	Oct 2023	-		0.525	Continuing	Continuing	Continuing
Project Planning and Support	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.250	Oct 2023	-		0.250	Continuing	Continuing	Continuing
Project Planning and Support	WR	NAVSEA : Washington, DC	0.000	0.000		0.000		0.225	Oct 2023	-		0.225	Continuing	Continuing	Continuing
Project Planning and Support	WR	NAVWAR : San Diego, CA	0.000	0.000		0.000		0.225	Oct 2023	-		0.225	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		1.225		-		1.225	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		0.000		25.000		-		25.000	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		Project (Number/Name) 2757 / All Domain Long Range Naval Integrated Fire Control (LR-NIFC)



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	<b>Project (Number/Name)</b> 2757 / All Domain Long Range Naval Integrated Fire Control (LR-NIFC)	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2757</b>				
Mission Threads SEIT: EOC Mission Thread SEIT	1	2024	1	2026
Mission Threads SEIT: FOC Mission Thread SEIT	1	2025	1	2027
BMC2/Op Center Development: IOC	1	2024	1	2026
BMC2/Op Center Development: FOC	3	2025	4	2028
LRNF: Kill Chain Integration	1	2024	4	2028
LRNF: LRNF Integration Event 1	3	2024	4	2024
LRNF: LRNF Integration Event 2	2	2025	3	2025
LRNF: LRNF Integration Event 3	1	2026	2	2026
LRNF: LRNF Integration Event 4	4	2026	1	2027
LRNF: LRNF Integration Event 5	3	2027	4	2027
LRNF: LRNF Integration Event 6	1	2028	2	2028
LRNF: LRNF Integration Event 7	3	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3159: Naval Integrated Fire Control-Counter Air SE&I	328.046	34.240	36.181	29.820	-	29.820	32.170	34.851	37.858	31.422	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

3159 Naval Integrated Fire Control (NIFC) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to extend the Naval Integrated Air and Missile Defense battlespace out to the maximum kinematic range of our weapons for the air, surface, and strike warfare missions. This includes targets beyond the detection range of the shooter. The NIFC project exploits capabilities inherent in existing systems, optimizes current and emerging technologies in component system upgrades, integrates and performs kill chain tests, forming an interoperable System of Systems (SoS) to maximize capabilities. As directed by OPNAV, the project is focused on SEI&T efforts to integrate the From The Sea (FTS) family of kill chains which includes an elevated sensor, platform, fire control system and missile, along with introducing other networks and sensors coordinating with other DoD activities as appropriate. Along with executing NIFC Inc 2 developmental test & fielding, the SEIT supports the design of the current kill chain and system configuration and architectures. Future NIFC efforts (e.g. NIFC Inc 3) includes SEIT activities across a broad range of systems and architectures.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Integration and Test (I&T) Integrated Product Team (IPT)	14.564	16.125	13.885	0.000	13.885
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The Integration and Test (I&T) Integrated Product Team (IPT) develops and executes the test plan to assess the FTS operational capability, performs risk reduction testing leveraging various component system tests. Test data will be used over time to verify, validate, and accredit the FTS simulation federation.					
<b>FY 2023 Plans:</b> - Execute Test Events in FY23: Land based Capability Demonstrations (CDs) (Non-Fire) planned for Feb 2023 with leading edge kill chains. Second CD planned for 3QFY23/4QFY23. Conduct systems engineering and integration efforts for NIFC Inc 3 capability demonstrations/At Sea Test event for 4QFY24. -Participating in Integrated Battle Problem (IBP) in 1QFY23.					
<b>FY 2024 Base Plans:</b> Execute Test Events in FY24: Land based capability demonstrations (Non-Fire), and Live Fire events. At Sea event planned for 4QFY24.					
<b>FY 2024 OCO Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to creation of Project 2757 which moves funding to begin funding of LR-NIFC. Project 3159 will decrease testing events to accommodate reduction in budget.						
Title: Engineering Management And System Definition		19.676	20.056	15.935	0.000	15.935
Articles:		-	-	-	-	-
Description: Engineering management and system definition including the development of the Systems Performance Document (SPD), System of Systems (SoS) functional allocations, requirements, traceability, SoS trades studies, SoS information exchange requirements, interface specifications, and sensor network capability analysis. Provides for complete FTS kill chain performance analysis and interface verification through development of a federation of simulations provided directly from the Programs of Record (PORs). Programs of Record include an elevated sensor, fire control system, platform and missile, as well as an expanding set of sensors and networks. NIFC-FTS Increment 3 adds multiple new sensors, networks, and weapons to the kill chain including Tactical Air Support (TACAIR) integration, (Electronic Warfare), and Battle management development and improvement.						
Federated SoS simulations support architecture development, scenario development, predictive analysis for testing, and define capabilities and limitations of FTS kill chain performance analysis and interface verification through development of a federation of simulations provided directly from the FTS PORs and future enhancements.						
Federated SoS simulations support architecture development, scenario development, predictive analysis for testing, and define capabilities and limitations of FTS kill chain for deployment.						
FY 2023 Plans: - System of systems (SOS) activities for Inc 3 advanced kill chains developing system documents as described above for increased sensor and network participation to meet fleet needs in support of warfighting in complex Naval environments - Continue Modeling and Simulations (M&S) for evaluation of advanced concepts utilizing other networks and sensors.						
FY 2024 Base Plans:						



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		<b>Project (Number/Name)</b> 3159 / Naval Integrated Fire Control- Counter Air SE&I	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>System of systems (SOS) activities for Inc 3 advanced kill chains developing system documents as described above for increased sensor and network participation to meet fleet needs in support of warfighting in complex Naval environments. Continue Modeling and Simulations (M&amp;S) for evaluation of advanced concepts utilizing other networks and sensors. System Engineering, Performance Modeling, Analysis, and assessment of Integrated Fire Control (IFC) architectures to support decisions for investment and prioritization in future NIFC kill chain architectures. Develop models, simulations, and tools, to analyze, assess, and recommend potential future NIFC architectures.</p> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Decrease is due to creation of Project 2757 which moves funding to begin funding of LR-NIFC. Project 3159 will decrease testing events to accommodate reduction in budget.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	34.240	36.181	29.820	0.000	29.820

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0604366N: Standard Missile SM-6	3.031	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b> Not Applicable											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Various	Various : Various	60.304	3.947	Dec 2021	3.000	Dec 2022	1.800	Dec 2023	-		1.800	0.000	69.051	-
Systems Engineering	C/CPFF	JHU/APL : Laurel, MD	8.994	2.704	Oct 2021	1.500	Dec 2022	0.800	Dec 2023	-		0.800	0.000	13.998	-
Systems Engineering	C/CPFF	NGIS : Melbourne, FL	8.653	0.000		0.000		0.000		-		0.000	0.000	8.653	-
Systems Engineering	C/CPFF	LM MS2 : Moorestown, NJ	68.311	4.852	Oct 2021	5.170	Nov 2022	4.000	Nov 2023	-		4.000	0.000	82.333	-
Systems Engineering	C/CPFF	Raytheon Co. : St. Petersburg, FL	16.511	0.370	Oct 2021	0.560	Nov 2022	0.300	Nov 2023	-		0.300	0.000	17.741	-
Systems Engineering	WR	NSWC CRANE : Crane, IN	2.748	2.003	Dec 2021	3.285	Dec 2022	3.175	Dec 2023	-		3.175	0.000	11.211	-
Systems Engineering	WR	NAWC CHINA LAKE : China Lake, CA	3.323	0.000		0.000		0.000		-		0.000	0.000	3.323	-
Systems Engineering	WR	COTF : Norfolk, VA	0.785	0.000		0.000		0.000		-		0.000	0.000	0.785	-
Systems Engineering	WR	NAWC Pax River : Pax River, MD	3.295	0.100	Oct 2021	1.400	Oct 2022	1.000	Oct 2023	-		1.000	0.000	5.795	-
Systems Engineering	WR	NSWC DAHLGREN : Dahlgren, VA	4.210	3.262	Oct 2021	3.041	Oct 2022	3.600	Oct 2023	-		3.600	0.000	14.113	-
Systems Engineering	C/CPFF	Raytheon Co. : Tucson, AZ	1.054	1.000	Oct 2021	0.545	Dec 2022	0.000		-		0.000	0.000	2.599	-
Systems Engineering	WR	NRL : Washingotn, DC	0.000	0.000		0.065	Nov 2022	0.060	Nov 2023	-		0.060	0.000	0.125	-
Subtotal			178.188	18.238		18.566		14.735		-		14.735	0.000	229.727	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	Raytheon : St. Petersburg, FL	8.395	0.250	Oct 2021	0.195	Oct 2022	0.300	Nov 2023	-		0.300	0.000	9.140	-

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604378N / Nav Integrated Fire Control  
- Counter Air Sys E

## Project (Number/Name)

3159 / Naval Integrated Fire Control-  
Counter Air SE&I

## Test and Evaluation (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	COTF : Norfolk, VA	0.013	0.000		0.000		0.000		-		0.000	0.000	0.013	-
Developmental Test & Evaluation (DT&E)	C/BA	Wallops Island : Wallops Island, VA	0.260	0.000	Oct 2021	0.013	Oct 2022	0.000		-		0.000	0.000	0.273	-
Developmental Test & Evaluation (DT&E)	WR	NAWC AD : Pax River, MD	0.733	0.000		0.000		0.000		-		0.000	0.000	0.733	-
Developmental Test & Evaluation (DT&E)	WR	NAWC CHINA LAKE : China Lake, CA	1.460	0.000		0.200	Oct 2022	0.435	Oct 2023	-		0.435	0.000	2.095	-
Developmental Test & Evaluation (DT&E)	WR	NAWC Pax River : Pax River, MD	1.245	0.080	Dec 2021	0.000		0.000		-		0.000	0.000	1.325	-
Developmental Test & Evaluation (DT&E)	C/BA	NSWC/DAHLGREN : DAHLGREN, VA	1.122	0.460	Oct 2021	0.600	Oct 2022	0.300	Oct 2023	-		0.300	0.000	2.482	-
Developmental Test & Evaluation (DT&E)	C/CPFF	Lockheed Martin - Moorestown, NJ : Moorestown, NJ	32.386	3.385	Oct 2021	2.045	Oct 2022	2.000	Nov 2023	-		2.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	PT MUGU : PT Mugu, CA	11.466	0.000	Oct 2021	0.300	Oct 2022	0.400	Oct 2023	-		0.400	0.000	12.166	-
Developmental Test & Evaluation (DT&E)	Various	Various : Various	54.535	1.946	Oct 2021	3.570	Oct 2022	1.700	Oct 2023	-		1.700	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	Dept of Interior : Boise, ID	4.048	0.000	Dec 2021	0.000	Dec 2022	0.000		-		0.000	0.000	4.048	-
Developmental Test & Evaluation (DT&E)	WR	NSWC/PHD : Port Hueneme, CA	8.619	3.475	Oct 2021	5.956	Oct 2022	4.800	Oct 2023	-		4.800	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NIWC : San Diego, CA	0.066	0.000		0.000		0.000		-		0.000	0.000	0.066	-
Developmental Test & Evaluation (DT&E)	C/CPFF	JHU/APL : Laurel, MD	0.556	0.556	Oct 2021	0.300	Oct 2022	0.500	Oct 2023	-		0.500	0.000	1.912	-
Developmental Test & Evaluation (DT&E)	WR	NSWC CRANE : Crane, IN	0.600	0.600	Oct 2021	0.980	Oct 2022	0.300	Dec 2023	-		0.300	0.000	2.480	-
Developmental Test & Evaluation (DT&E)	WR	NIWC San Diego : San Diego, CA	0.000	0.292	Dec 2021	0.100	Dec 2022	0.300	Dec 2023	-		0.300	0.000	0.692	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E						Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	C/CPFF	Northrop Grumman : Melbourne, FL	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-		
Developmental Test & Evaluation (DT&E)	WR	PMRF : Barking Sands, HI	0.000	1.948	Apr 2022	0.300	Apr 2023	1.800	Apr 2024	-		1.800	0.000	4.048	-		
Developmental Test & Evaluation (DT&E)	C/CPFF	Raytheon : Tuscon, AZ	0.000	0.000		0.455	Dec 2022	0.750	Dec 2023	-		0.750	0.000	1.205	-		
Developmental Test & Evaluation (DT&E)	WR	NSWC CORONA : Corona, CA	0.000	0.000		0.208	Oct 2022	0.300	Oct 2023	-		0.300	0.000	0.508	-		
Developmental Test & Evaluation (DT&E)	C/CPFF	Innovative Defense Tech (IDT) : Arlington, VA	0.000	1.118	Jul 2022	0.500	Jul 2023	0.000		-		0.000	0.000	1.618	-		
Subtotal			125.504	14.110		15.722		13.885		-		13.885	Continuing	Continuing	N/A		
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Project Planning and Management	WR	NAWC China Lake : China Lake, CA	0.201	0.000		0.000		0.000		-		0.000	0.000	0.201	-		
Project Planning and Management	WR	NAWC Pax River : Pax River, MD	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	-		
Project Planning and Management	C/CPFF	Various : Various	23.893	1.892	Oct 2021	1.893	Oct 2022	1.200	Oct 2023	-		1.200	Continuing	Continuing	Continuing		
Subtotal			24.354	1.892		1.893		1.200		-		1.200	Continuing	Continuing	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			328.046	34.240		36.181		29.820		-		29.820	Continuing	Continuing	N/A		
Remarks																	

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604378N / Nav Integrated Fire Control  
- Counter Air Sys E

Project (Number/Name)

3159 / Naval Integrated Fire Control-  
Counter Air SE&I

# NIFC

## FTS Planning Schedule



Capability	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28
	★ INC 2 IOC			INC 3 IOC	★		
<b>NIFC Project Activity</b>							
WSMR Desert Ship (DS) Upgrade and Maintenance	C2P Refresh	MAINTAIN CONFIGs & IA					
NIFC Capability Demonstrations 2 LFTs & 1 Capability Demo (CD), Per Year; CD = Non-LFT (INC 2/2+/3)	LFT 10 At Sea (AS) 8 @PMRF	CDs 2 LFT CD 9/10 @ DS	CDs 3 AS 10	CD 1 At Sea	CD 1 At Sea	CD 1 At Sea	CD 1 At Sea
<b>RELATED PROGRAMS</b>	Sensor Updates Delta System/Software Configuration (DSSC)	DSSC-4	DSSC-5				
	CEC AN/USG-3B E-2D CEC AN/USG-2B AWS CEC Updates		BLK 2 IOC		BLK 2 FOC		
	AEGIS Weapon System ACB-16		Aegis CP24 Combat System Cert TACAIR NOT FUNDED				
	SM-6 Blk IA	FOC	TACAIR Phase 2.1	TACAIR Phase 2.2	TACAIR Phase 2.3.7 Cert		
	Joint & Fleet Events	10 PC 22 @DS Integrated Battle Problem (IBP)	23 CD				

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604378N / Nav Integrated Fire Control  
- Counter Air Sys E

## Project (Number/Name)

3159 / Naval Integrated Fire Control-  
Counter Air SE&I

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3159</b>				
NIFC PROJECT ACTIVITY: CAPABILITY: INC 2 IOC	2	2022	2	2022
NIFC PROJECT ACTIVITY: CAPABILITY: INC 3 IOC	2	2026	2	2026
White Sands Missile Range (WSMR): White Sands Missile Range (WSMR) Desert Ship Upgrade and Maintenance Development: C2P Refresh 22	2	2022	2	2022
White Sands Missile Range (WSMR): White Sands Missile Range (WSMR) Desert Ship Upgrade and Maintenance Development: Install of Virtualized AEGIS	4	2024	4	2024
White Sands Missile Range (WSMR): White Sands Missile Range (WSMR) Desert Ship Upgrade and Maintenance Development: Maintain CONFIG & IA	1	2022	2	2025
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Tests: LFT 10/22	1	2022	1	2022
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Tests: At Sea 8 4/22	3	2022	3	2022
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 Capability Demo 2/23	2	2023	2	2023
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 Capability Demo 8/23	4	2023	4	2023
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Tests: 3/24	2	2024	2	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA At Sea Capability Demo 9/24	4	2024	4	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA LFT Capability Demo 1/25	2	2025	2	2025
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Tests: At Sea 5/25	3	2025	3	2025
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test: LFT 1/26	2	2026	2	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk 1A Live Fire Tests: At Sea 5/26	3	2026	3	2026
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk 1A LFT Capability Demo: 1/27	2	2027	2	2027
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk 1A Live Fire Tests: At Sea 5/27	3	2027	3	2027
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk 1A LFT Capability Demo: 1/28	2	2028	2	2028
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk 1A LFT Capability Demo: 5/28	3	2028	3	2028
Elevated Sensor Updates Delta System/Software Configuration (DSSC): E-2D Updates Delta System/Software Configuration (DSSC) 4	3	2022	3	2022
Elevated Sensor Updates Delta System/Software Configuration (DSSC): E-2D Updates Delta System/Software Configuration (DSSC): DSSC-5 On Going	3	2023	3	2023
SM-6 Blk 1 & SM-6 Blk 1A: CEC Updates On-Going Block 2 IOC	4	2024	4	2024
SM-6 Blk 1 & SM-6 Blk 1A: CEC Updates: Block 2 FOC	4	2026	4	2026
SM-6 Blk 1 & SM-6 Blk 1A: AEGIS Weapon System ACB-16: TACAIR Phase II Cert (3 phases)	4	2026	4	2026
SM-6 Blk 1 & SM-6 Blk 1A: AEGIS Weapon System ACB-16: CSL Combat System Load Cert	4	2024	4	2024
SM-6 Blk 1 & SM-6 Blk 1A: SM-6 Blk 1A: FOC	3	2023	3	2023
Joint & Fleet Events: Fleet Event: Integrated Battle Problem (IBP)	1	2023	1	2023
Joint & Fleet Events: Joint Event: Army Project Convergence (PC) 22	1	2023	1	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3242: NIFC-CA Supported by Airborne Platforms	14.553	8.595	9.711	11.625	-	11.625	12.656	12.837	13.280	13.475	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Naval Integrated Fire Control (NIFC) From the Air (FTA) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to integrate NIFC FTA capabilities within "Pillar Programs" (F/A-18 & EA-18G, E-2D, F-35, Link-16 and Tactical Targeting Network Technology Data Links, and all USN air launched Air-to-Air and Air-to-Surface weapons). Based on the advancing threat, there remains an imperative to improve lethality, survivability and interoperability by extending the battlespace out to the maximum kinematic range of our weapons for the air, surface, and strike warfare missions. The NIFC FTA project leverages capabilities inherent in existing systems, optimizes current and emerging technologies in platform system upgrades, and integrates them together to form interoperable System of Systems (SoS) to maximize offensive and defensive FTA integrated capabilities. As directed from OPNAV, the project is focused on development of Air Warfare, Surface Warfare, and Strike Warfare FTA effects chains. This PU will support efforts that include decomposing SoS requirements into Mission Technical Baselines (MTBs) and Integrated Capability Technical Baselines (ICTBs) for requirement allocation to Pillar Programs. Additionally, this PU will support NIFC pillar program coordination to provide performance predictions, performance assessments, and SoS risk reduction activities through Live, Virtual, and Constructive (LVC) events, SoS exercises, and development of Requirements Test and Verification Matrices (RTVMs) to support Developmental and Operational Test for the individual platforms. In lieu of a traditional Test and Evaluation Master Plan (TEMP), NIFC FTA test strategies will be developed to identify resources required to evaluate NIFC FTA capabilities, and describe how NIFC FTA capabilities will be evaluated prior to fleet delivery.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> NIFC From the Air (FTA) Capabilities Effectiveness and Integration	8.595	9.711	11.625	0.000	11.625
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Develops and executes multi-platform cross-domain offensive and defensive kinematic and non-kinematic effects chains.					
<b>FY 2023 Plans:</b> Continue NIFC FTA System of Systems (SoS) verification and validation testing of F/A-18 H16, F-35, and E-2D DSSC 4 / 5 with increased capabilities of USN air launched Air-to-Air and Air-to-Surface weapons, integration of Tactical Targeting Network Technology (TTNT), and enhancements to Link-16. Evaluate and assess integrated fires interoperability and performance across air platforms and weapons by the utilization of federated labs. These labs will utilize a combination of Live Virtual Constructive (LVC) capabilities to identify issues, and provide					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>recommendations for corrections. Development of mission Requirements Test and Verification Matrices (RTVMs) to provide definition to Developmental Test and Operational Test within the individual platforms. Development of Integrated Technical Capability Baselines (ICTBs) and Design Reference Missions (DRMs) to inform architecture development and system definition of the F/A-18 H18/H20, E-2D DSSC 6/7, and continued F-35 improvements. Execute performance assessments, interoperability risk reduction for advanced Integrated Fire Control (IFC), and employment recommendations across the NIFC pillar programs to maximize effectiveness when introduced to the Fleet.</p> <p><b>FY 2024 Base Plans:</b> Continue NIFC FTA System of Systems (SoS) verification and validation testing of F/A-18 H16, F-35, and E-2D DSSC 4 / 5 with increased capabilities of USN air launched Air-to-Air and Air-to-Surface weapons, integration of Tactical Targeting Network Technology (TTNT), and enhancements to Link-16. Evaluate and assess integrated fires interoperability and performance across air platforms and weapons by the utilization of federated labs. These labs will utilize a combination of Live Virtual Constructive (LVC) capabilities to identify issues, and provide recommendations for corrections. Development of mission Requirements Test and Verification Matrices (RTVMs) to provide definition to Developmental Test and Operational Test within the individual platforms. Development of Integrated Technical Capability Baselines (ICTBs) and Design Reference Missions (DRMs) to inform architecture development and system definition of the F/A-18 H18/H20,E-2D DSSC 6/7, and continued F-35 improvements. Execute performance assessments, interoperability risk reduction for advanced Integrated Fire Control (IFC), and employment recommendations across the NIFC pillar programs to maximize effectiveness when introduced to the Fleet.</p> <p>Beginning in FY24, funds issued for a shift to digital engineering at the Systems of Systems (SoS) level, enabling mission level SoS requirements to be delivered as digital architecture models that can be integrated with pillar platform digital models in a single environment. This will provide the delivery of a digital engineering analysis environment to support faster development cycle and maintain program alignment for SoS capabilities from gap identification, through POM, development test and fielding. Provide mission level, SoS support of digital acquisition programs and expand Modeling Simulation &amp; Analysis (MS&amp;A) capabilities to account for critical GPC capabilities in 6th Gen, Electronic Warfare, Beyond Line of Sight, data links and networks.</p> <p><b>FY 2024 OCO Plans:</b></p>						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		<b>Project (Number/Name)</b> 3242 / NIFC-CA Supported by Airborne Platforms		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A						
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase is to fund a shift to digital engineering at the Systems of Systems (SoS) level, enabling mission level SoS requirements to be delivered as digital architecture models that can be integrated with pillar platform digital models in a single environment. This will provide the delivery of a digital engineering analysis environment to support faster development cycle and maintain program alignment for SoS capabilities from gap identification, through POM, development test and fielding. Provide mission level, SoS support of digital acquisition programs and expand Modeling Simulation & Analysis (MS&A) capabilities to account for critical GPC capabilities in 6th Gen, Electronic Warfare, Beyond Line of Sight, data links and networks.						
<b>Accomplishments/Planned Programs Subtotals</b>		8.595	9.711	11.625	0.000	11.625
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
Not Applicable.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEM ENGINEERING	WR	NAWC AD : PAX RIVER, MD	4.065	1.885	Oct 2021	1.912	Oct 2022	3.570	Oct 2023	-		3.570	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NAWC CHINA LAKE : CHINA LAKE, CA	2.934	1.539	Oct 2021	1.700	Oct 2022	2.720	Oct 2023	-		2.720	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	C/CPFF	NSMA : WASHINGTON, DC	2.768	0.900	Nov 2021	0.800	Nov 2022	0.600	Oct 2023	-		0.600	0.000	5.068	5.068
Subtotal			9.767	4.324		4.412		6.890		-		6.890	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC AD : PAX RIVER, MD	1.305	1.105	Oct 2021	1.007	Oct 2022	2.434	Oct 2023	-		2.434	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWC CHINA LAKE : CHINA LAKE, CA	1.371	0.697	Oct 2021	0.701	Oct 2022	0.422	Oct 2023	-		0.422	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	NSMA : WASHINGTON, DC	1.285	1.882	Dec 2021	2.911	Dec 2022	1.430	Oct 2023	-		1.430	0.000	7.508	7.518
Subtotal			3.961	3.684		4.619		4.286		-		4.286	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PROJECT PLANNING AND MANAGEMENT	WR	NAWC AD : PAX RIVER, MD	0.550	0.414	Oct 2021	0.420	Oct 2022	0.409	Oct 2023	-		0.409	Continuing	Continuing	Continuing
PROJECT PLANNING AND MANAGEMENT	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.249	0.148	Oct 2021	0.250	Oct 2022	0.000	Oct 2023	-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E						Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	NAVAIR : PAX RIVER, MD	0.026	0.025	Oct 2021	0.010	Dec 2022	0.040	Oct 2023	-		0.040	0.000	0.101	0.101
Subtotal			0.825	0.587		0.680		0.449		-		0.449	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			14.553	8.595		9.711		11.625		-		11.625	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy															Date: March 2023				
Appropriation/Budget Activity										R-1 Program Element (Number/Name)					Project (Number/Name)				
1319 / 5										PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E					3242 / NIFC-CA Supported by Airborne Platforms				

Proj 3242	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
NAVAIR SoS Exercises			▲				▲				▲				▲				▲				▲				▲	
FTA Federation LVC Event 13-16		▲	▲	▲																								
FTA Federation LVC Event 17-20				▲		▲		▲																				
FTA Federation LVC Event 21-24								▲		▲		▲																
FTA Federation LVC Event 25-29														▲		▲		▲										
FTA Federation LVC Event 29-32																		▲		▲		▲						
FTA Federation LVC Event 33-36																						▲		▲		▲		
FTA Federation LVC Event 37-40																							▲			▲		
F/A-18 SW Updates																	▲							▲			▲	
E-2D SW Updates							▲								▲								▲					
F-35 SW Updates		▲					▲	▲		▲				▲				▲				▲				▲		
SoS Digital Engineering Study												▲				▲				▲				▲			▲	

2024PB - 0604378N - 3242

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604378N / Nav Integrated Fire Control  
- Counter Air Sys E

## Project (Number/Name)

3242 / NIFC-CA Supported by Airborne  
Platforms

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3242</b>				
NAVAIR SoS Exercises: NAVAIR SoS Exercise 3/22	3	2022	3	2022
NAVAIR SoS Exercises: NAVAIR SoS Exercise 3/23	3	2023	3	2023
NAVAIR SoS Exercises: NAVAIR SoS Exercise 3/24	3	2024	3	2024
NAVAIR SoS Exercises: NAVAIR SoS Exercise 3/25	3	2025	3	2025
NAVAIR SoS Exercises: NAVAIR SoS Exercise 3/26	3	2026	3	2026
NAVAIR SoS Exercises: NAVAIR SoS Exercise 3/27	3	2027	3	2027
NAVAIR SoS Exercises: NAVAIR SoS Exercise 3/28	3	2028	3	2028
FTA Federation LVC Event 13-16: FTA Federation LVC Event 13	2	2022	2	2022
FTA Federation LVC Event 13-16: FTA Federation LVC Event 14	3	2022	3	2022
FTA Federation LVC Event 13-16: FTA Federation LVC Event 15	4	2022	4	2022
FTA Federation LVC Event 13-16: FTA Federation LVC Event 16	4	2022	4	2022
FTA Federation LVC Event 17-20: FTA Federation LVC Event 17	2	2023	2	2023
FTA Federation LVC Event 17-20: FTA Federation LVC Event 18	3	2023	3	2023
FTA Federation LVC Event 17-20: FTA Federation LVC Event 19	4	2023	4	2023
FTA Federation LVC Event 17-20: FTA Federation LVC Event 20	4	2023	4	2023
FTA Federation LVC Event 21-24: FTA Federation LVC Event 21	2	2024	2	2024
FTA Federation LVC Event 21-24: FTA Federation LVC Event 22	3	2024	3	2024
FTA Federation LVC Event 21-24: FTA Federation LVC Event 23	4	2024	4	2024
FTA Federation LVC Event 21-24: FTA Federation LVC Event 24	4	2024	4	2024
FTA Federation LVC Event 25-29: FTA Federation LVC Event 25	2	2025	2	2025
FTA Federation LVC Event 25-29: FTA Federation LVC Event 26	3	2025	3	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)			
1319 / 5	PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	3242 / NIFC-CA Supported by Airborne Platforms			
Events by Sub Project	Start		End		
	Quarter	Year	Quarter	Year	
FTA Federation LVC Event 25-29: FTA Federation LVC Event 27	4	2025	4	2025	
FTA Federation LVC Event 25-29: FTA Federation LVC Event 28	4	2025	4	2025	
FTA Federation LVC Event 29-32: FTA Federation LVC Event 29	2	2026	2	2026	
FTA Federation LVC Event 29-32: FTA Federation LVC Event 30	3	2026	3	2026	
FTA Federation LVC Event 29-32: FTA Federation LVC Event 31	4	2026	4	2026	
FTA Federation LVC Event 29-32: FTA Federation LVC Event 32	4	2026	4	2026	
FTA Federation LVC Event 33-36: FTA Federation LVC Event 33	2	2027	2	2027	
FTA Federation LVC Event 33-36: FTA Federation LVC Event 34	3	2027	3	2027	
FTA Federation LVC Event 33-36: FTA Federation LVC Event 35	4	2027	4	2027	
FTA Federation LVC Event 33-36: FTA Federation LVC Event 36	4	2027	4	2027	
FTA Federation LVC Event 37-40: FTA Federation LVC Event 37	2	2028	2	2028	
FTA Federation LVC Event 37-40: FTA Federation LVC Event 38	3	2028	3	2028	
FTA Federation LVC Event 37-40: FTA Federation LVC Event 39	4	2028	4	2028	
FTA Federation LVC Event 37-40: FTA Federation LVC Event 40	4	2028	4	2028	
F/A-18 SW Updates: F/A-18 SW Updates H18	4	2028	4	2028	
F/A-18 SW Updates: F/A-18 SW Updates H20	4	2025	4	2025	
F/A-18 SW Updates: F/A-18 SW Updates H22	4	2027	4	2027	
E-2D SW Updates: E-2D SW Updates DSSC-4	3	2023	3	2023	
E-2D SW Updates: E-2D SW Updates DSSC-5	3	2025	3	2025	
E-2D SW Updates: E-2D SW Updates DSSC-6	3	2027	3	2027	
F-35 SW Updates: F-35 SW Updates 30P07	2	2022	2	2022	
F-35 SW Updates: F-35 SW Updates 40P01	3	2023	3	2023	
F-35 SW Updates: F-35 SW Updates 30P08	4	2023	4	2023	
F-35 SW Updates: F-35 SW Updates 40P02	2	2024	2	2024	
F-35 SW Updates: F-35 SW Updates 41P01	2	2025	2	2025	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E		<b>Project (Number/Name)</b> 3242 / NIFC-CA Supported by Airborne Platforms
		<b>Start</b>		<b>End</b>
<b>Events by Sub Project</b>		<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>
F-35 SW Updates: F-35 SW Updates 42P01		2	2026	2
F-35 SW Updates: F-35 SW Updates 42P02		2	2027	2
F-35 SW Updates: F-35 SW Updates 43P01		2	2028	2
SoS Digital Engineering Study: SoS Digital Engineering Study 4/24		4	2024	4
SoS Digital Engineering Study: SoS Digital Engineering Study 4/25		4	2025	4
SoS Digital Engineering Study: SoS Digital Engineering Study 4/26		4	2026	4
SoS Digital Engineering Study: SoS Digital Engineering Study 4/27		4	2027	4
SoS Digital Engineering Study: SoS Digital Engineering Study 4/28		4	2028	4



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	6.275	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.275
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
Congressional Interest Items not included in other Projects.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2022	FY 2023
<b>Congressional Add:</b> Stratospheric balloons	6.275	0.000
<b>FY 2022 Accomplishments:</b> FY22 funding will be utilized by the Naval Air Systems Command (NAVAIR), in operational partnership with the U.S. Pacific Fleet, for technology maturation and risk reduction of expanded stratospheric concepts involving the Thunderhead Balloon System platform, additional payloads, and associated interfaces. These efforts are designed with the goal of maturing concepts to expand stratospheric capability as the Navy enters into a Program of Record (PoR) in Fiscal Year 2023.		
<b>FY 2023 Plans:</b> N/A		
<b>Congressional Adds Subtotals</b>	6.275	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E						Project (Number/Name) 9999 / Congressional Adds			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TBD	C/BA	TBD : Not Specified	0.000	6.275	Jun 2022	0.000		0.000		-		0.000	0.000	6.275	-
Subtotal			0.000	6.275		0.000		0.000		-		0.000	0.000	6.275	N/A
Remarks TBD															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	6.275		0.000		0.000		-		0.000	0.000	6.275	N/A
Remarks															

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PE 0604378N: *Nav Integrated Fire Control - Counter Ai...*  
Navy

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R-1 Program Element (Number/Name)	Program Element Description	Program Element Type	Program Element Status	Program Element Details

PE 0604378N / Nav Integrated Fire Control  
- Counter Air Sys E

9999 / Congressional Adds

[illegible]

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Stratospheric Balloons: Stratospheric Balloons	3	2022	4	2023

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604419N / Advanced Sensors Application Program (ASAP)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	0.000	10.000	13.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	23.000
9999: Congressional Adds	0.000	10.000	13.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	23.000

**A. Mission Description and Budget Item Justification**

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

<b><u>B. Program Change Summary (\$ in Millions)</u></b>	<b><u>FY 2022</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024 Base</u></b>	<b><u>FY 2024 OCO</u></b>	<b><u>FY 2024 Total</u></b>
Previous President's Budget	10.000	0.000	0.000	-	0.000
Current President's Budget	10.000	13.000	0.000	-	0.000
Total Adjustments	0.000	13.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	13.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 9999: *Congressional Adds*

Congressional Add: *Program Increase*

	<b><u>FY 2022</u></b>	<b><u>FY 2023</u></b>
	10.000	13.000
Congressional Add Subtotals for Project: 9999	10.000	13.000
Congressional Add Totals for all Projects	10.000	13.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604419N / Advanced Sensors Application Program (ASAP)				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	10.000	13.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	23.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
<b>A. Mission Description and Budget Item Justification</b> Congressional Add for Advanced Sensors.												
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>								<b>FY 2022</b>	<b>FY 2023</b>			
<b>Congressional Add:</b> Program Increase								10.000	13.000			
<b>FY 2022 Accomplishments:</b> The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.												
<b>FY 2023 Plans:</b> N/A												
<b>Congressional Adds Subtotals</b>								10.000	13.000			
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A												
<b>Remarks</b>												
<b>D. Acquisition Strategy</b> N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604419N / Advanced Sensors Application Program (ASAP)						Project (Number/Name) 9999 / Congressional Adds			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ASAP Congressional Add	Various	VARIOUS : VARIOUS	0.000	10.000	May 2022	13.000	May 2023	0.000		-		0.000	0.000	23.000	-
Subtotal			0.000	10.000		13.000		0.000		-		0.000	0.000	23.000	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	10.000		13.000		0.000		-		0.000	0.000	23.000	N/A
Remarks															

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PE 0604419N: *Advanced Sensors Application Program (AS...*  
Navy

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Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-31	Completed	J. Doe	150,000	148,500	100	Low	Exceeded budget by 1.5%
102/Beta	2023-02-01	2023-05-15	In Progress	A. Smith	220,000	180,000	82	Medium	Minor delays in procurement
103/Gamma	2023-03-10	2023-06-30	On Hold	M. Chen	90,000	0	0	High	Waiting for client approval
104/Delta	2023-04-01	2023-07-31	Planned	S. Kim	180,000	0	0	Medium	Initial planning phase
105/Epsilon	2023-05-01	2023-08-31	On Hold	L. Garcia	110,000	0	0	Low	Resource allocation pending
106/Zeta	2023-06-01	2023-09-30	Planned	K. Lee	130,000	0	0	Medium	Scope definition in progress
107/Eta	2023-07-01	2023-10-31	Planned	H. Patel	160,000	0	0	Low	Vendor selection underway
108/Theta	2023-08-01	2023-11-30	Planned	B. Wong	140,000	0	0	Medium	Requirement gathering
109/Iota	2023-09-01	2023-12-31	Planned	N. Singh	120,000	0	0	Low	Initial analysis phase
110/Kappa	2023-10-01	2024-01-31	Planned	P. Kim	170,000	0	0	Medium	Project charter approved

PE 0604419N / Advanced Sensors Application Program (ASAP)

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604419N / <i>Advanced Sensors Application Program (ASAP)</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 9999</i>				
Congressional Add ASAP: ASAP Congressional Add	3	2022	4	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	297.670	60.394	72.772	115.396	-	115.396	113.651	74.060	63.189	28.538	Continuing	Continuing
3232: Multi-Mission Signal Processor	170.954	2.931	2.626	2.577	-	2.577	3.347	3.206	3.124	3.151	Continuing	Continuing
3243: Shipboard Passive Electro-Optical Infrared Development	42.921	46.705	61.912	103.084	-	103.084	96.221	58.255	47.851	13.002	Continuing	Continuing
3301: Improved Capabilities SPY-1 Radar	63.391	9.802	8.234	9.735	-	9.735	14.083	12.599	12.214	12.385	Continuing	Continuing
3408: AN/SPS-49 Technical Refresh	20.404	0.956	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.360

## A. Mission Description and Budget Item Justification

Multi-Mission Signal Processor (MMSP): The development of MMSP provides simultaneous Anti-Air Warfare (AAW)/Ballistic Missile Defense (BMD) multi-mission capability for DDG 51 class ships as part of the Aegis Modernization Program. This capability is utilized for DDG 113 and follow new construction and Aegis Ashore. Modifies SPY-1D transmitters to enable dual beam for reduced frame times and better reaction time, provides stability for all D(V) waveforms, and avoids operational degradation. The SPY-1 radar system detects, tracks, and supports engagements of a broader range of threats. MMSP improves performance in littoral, ducted clutter, electronic attack (EA), and chaff environments and provides greater commonality in computer programs and equipment. This effort also provides for the development of MMSP on Destroyers Commercial Off The Shelf (COTS) refresh and MMSP technology refresh. MMSP/AEGIS Linear Processing System (ALPS) integration provides adjunct processing for data collection. The FY24 budget request supports development of MMSP including the commencement of technology refresh to support Aegis Modernization due to Diminishing Manufacturing Sources and Material Shortages (DMSMS) and obsolescence issues. MMSP-Restoration (MMSP-R) includes software updates required on new computer platforms. Engineering efforts will be required to assess alternate technologies and determine optimal MMSP architectural solutions, which will include system security requirements. Additionally, funding is required for technology development to support integration of ALPS into MMSP-R, continuation of MMSP-R development to support AEGIS modernization and AEGIS Capability Build (ACB) 16 MMSP improvements, and MMSP-R Engineering Change Proposal (ECP)/Software updates.

Shipboard Passive Electro-Optical Infrared (SPEIR) Block I will be an open architecture system that addresses near-term capability requirements and associated gaps identified in the 2019 SPEIR Capability Development Document (CDD). This program answers an urgent counter unmanned aircraft system operational need for the Fleet to provide an initial capability by FY26. The SPEIR acquisition leverages technology developed under the Office of Naval Research's (ONR's) Combined EO/IR Surveillance and Response System (CESARS) Science and Technology (S&T) effort, specifically related to the Shipboard Panoramic EO/IR Cueing and Surveillance System (SPECSS). SPEIR Block I will provide a common 360-degree EO/IR Electronic Support (ES) capability to surface ships that will passively find, fix, track, and target current / emerging threats in support of the following warfare missions: Anti-Ship Cruise Missile (ASCM) Defense, Counter-Unmanned Aircraft Systems (UAS), Counter-Fast Attack Craft / Fast In-shore Attack Craft (FAC/FIAC), and Mobility. SPEIR Block I will consist of a passive Wide Field of View (WFOV) capability

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604501N / <i>Advanced Above Water Sensors</i>
<p>with a 360-degree field-of-view optical sensors for autonomous detection and tracking for 24/7 day/night shipboard situational awareness. SPEIR Block I will also include an enhanced, high resolution Narrow-Medium Field of View (NFOV) and laser range-finding capability that will provide 3D target tracking, identification, and threat assessment. SPEIR Block I will have limited integration with shipboard combat systems to exchange target track data and disseminate motion imagery. This program includes risk reduction initiatives for modeling and simulation, sensor protection counter-countermeasures, Sensor Fusion Algorithms and combat system track publishing to enable limited Combat System Integration (CSI). SPEIR Block II will be a future program that will build on the modular open system architecture of Block I to address longer-term capability requirements to include an expanded spatial coverage envelope, Periscope Detection and Discrimination (PDD) and Mine Like Object (MLO) avoidance. SPEIR Block II will also provide full combat system integration and will include a government software development and integration effort for Soft-Kill Coordination System (SKCS) to manage ES engagements. The FY24 budget request supports detailed hardware and software design of the SPEIR Block I system, completion of core software builds and associated integration effort, and procurement of material for Engineering Development Models (EDMs). Scope includes execution of Critical Design Review (CDR), continued test planning, training curriculum development, and Modeling and Simulation (M&amp;S) development and maturation. Increases from FY22-FY25 are consistent with expected ramp up of developmental activities of a new Acquisition Category II program during the Engineering and Manufacturing Development (E&amp;MD) phase. The FY24 budget request also includes funding to support E&amp;MD contract execution, including a major System Engineering Technical Review (SETR) event (CDR) and will also support integration activities to ensure compatibility with the Combat System. Additional funds have been received in FY24-FY27 to align with the program MS B Service Cost Position (SCP), including additional funding for SPEIR Combat System Integration tasking not previously included in this funding line. RDT&amp;E costs are anticipated to ramp down starting in FY25 as Integration &amp; Development Test planning is complete, EDM material procurements are completed, and all three (3) EDMs are assembled and integrated to support the execution of developmental test events prior to program transition to the Production phase.</p> <p>Improved Capabilities for SPY-1 Radar: These Reliability, Maintainability, and Availability (RM&amp;A) improvements and solid state technology insertions are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/ SPY-1 Radar Total Ownership Cost Reductions. Improvements, such as Solid State Insertion to address Diminishing Manufacturing Sources and Material Shortages (DMSMS), will yield reductions in annual fleet maintenance costs and is a top fleet requirement as part of the AEGIS Wholeness initiative. In addition to RM&amp;A improvements, warfighting improvements funded in this line includes the following: Transmitter Noise Cancellation (TNC) development includes hardware/ software to counter low radar cross section, low altitude threats. Side Lobe Blanking (SLB) addresses shortfalls in mixed electronic attack environment while in an Integrated Air and Missile Defense (IAMD) mode. The Ship-Based Non-Cooperative Target Recognition (SBNCTR) program Phases 2A and 3 will develop algorithms to provide classification for targets. Advanced Calibration Experiment (ACE) Phase 2 is being incorporated into Baseline 9. Elevated Radar Advanced Calibration Experiment (ERACE) Phases 1/2 and 3 incorporate into Baseline 9. Electronic Attack (EA) and Rapid Radar Capability Improvement Program (R2CIP) develop solutions for evolving EA threats. The FY24 budget request continues the development efforts of SBNCTR Phase 2A, TNC Phase 1/2, EA improvements, Digital Receiver Upgrade (DRU) (formerly digital Low Noise Amplifier (dLNA)) Requirements and Specification Analysis, and SLB Technology Development, completes Elevated Radar Advanced Calibration Experiment (ERACE) Phase 1/2, and commences ERACE Phase 3 development.</p> <p>AN/SPS-49 Technology Refresh: FY22 was the last year of funding for this program. AN/SPS-49 is the only Air Surveillance Radar on the LSD 41/49 class ships. Continued degradation and increasingly low radar availability of the AN/SPS-49 Radar is greatly impacting deployed missions, impacting safety of flight and affecting LSD Air Warfare capability and operations and as a result, AN/SPS-49 Technology Refresh is required. This AN/SPS-49 Technology Refresh will include Reliability, Maintainability, and Availability (RM&amp;A) improvements and solid state technology insertions which will reduce cascading failures and mitigate obsolescence issues. In</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604501N / <i>Advanced Above Water Sensors</i>
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addition, this effort replaces key components to include: transmitter, receiver, exciter, antenna elevation servo control, radar system control, display and signal data processor (SDP). A digital receiver/exciter (DREX) with high-performance computing technology will be a key component in the new system. The current SPS-49 radar has no software so new software is being developed to mimic the current radar functions to maintain compatibility with internal and external interfaces. This effort will improve SPS-49 electronic protection, have increased surveillance range and increased slow moving small target detection, as well as reduce total ownership cost with lower unit cost and smaller size/weight/power requirements. Funding is also to complete development, test and evaluation, validation and integration of a technology refresh of the below deck hardware for the AN/ SPS-49A(V)1 Long Range Air Surveillance Radar.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	62.028	81.254	101.618	-	101.618
Current President's Budget	60.394	72.772	115.396	-	115.396
Total Adjustments	-1.634	-8.482	13.778	-	13.778
• Congressional General Reductions	-	-0.145			
• Congressional Directed Reductions	-	-8.337			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.634	0.000			
• Program Adjustments	0.000	0.000	12.803	-	12.803
• Rate/Misc Adjustments	0.000	0.000	0.975	-	0.975

**Change Summary Explanation**

- FY23 funding decrease is due to under-execution realignments (\$8.337M) and FFRDC reductions (\$0.145M) for the SPEIR and SPY-1 programs.
- FY24 funding increase of \$13.778M is due to receipt of additional funding for the SPEIR program for Block 1 Milestone B Compliance with the Service Cost Position (SCP).

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3232 / Multi-Mission Signal Processor			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3232: Multi-Mission Signal Processor	170.954	2.931	2.626	2.577	-	2.577	3.347	3.206	3.124	3.151	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Multi-Mission Signal Processor (MMSP): The development of MMSP provides simultaneous Anti-Air Warfare (AAW)/Ballistic Missile Defense (BMD) multi-mission capability for DDG 51 class ships as part of the Aegis Modernization Program. This capability is utilized for DDG 113 and follow new construction and Aegis Ashore. Modifies SPY-1D transmitters to enable dual beam for reduced frame times and better reaction time, provides stability for all D(V) waveforms, and avoids operational degradation. The SPY-1 radar system detects, tracks, and supports engagements of a broader range of threats. MMSP improves performance in littoral, ducted clutter, electronic attack (EA), and chaff environments and provides greater commonality in computer programs and equipment. This effort also provides for the development of MMSP on Destroyers Commercial Off The Shelf (COTS) refresh and MMSP technology refresh. MMSP/AEGIS Linear Processing System (ALPS) integration provides adjunct processing for data collection.

The FY24 budget request supports development of MMSP including the commencement of technology refresh to support Aegis Modernization due to Diminishing Manufacturing Sources and Material Shortages (DMSMS) and obsolescence issues. MMSP-Restoration (MMSP-R) includes software updates required on new computer platforms. Engineering efforts will be required to assess alternate technologies and determine optimal MMSP architectural solutions, which will include system security requirements. Additionally, funding is required for technology development to support integration of ALPS into MMSP-R, continuation of MMSP-R development to support AEGIS modernization and AEGIS Capability Build (ACB) 16 MMSP improvements, and MMSP-R Engineering Change Proposal (ECP)/Software updates.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> SYSTEMS ENGINEERING	2.931	2.626	2.577	0.000	2.577
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Continue ACB16 Commercial Off The Shelf (COTS) Refresh ECPs</li> <li>- Complete Radar Integrated Product Team (IPT) support of Capability Package 22 (CP-22) Certification</li> <li>- Continue MMSP-R development to support AEGIS Modernization due to DMSMS and obsolescence issues</li> <li>- Continue to maintain alignment with the BMD Program and the associated BMD Signal Processor (BSP) adjunct to incorporate BMD capability within MMSP during AEGIS Modernization</li> <li>- Continue MMSP-R ECP/software updates</li> <li>- Continue to support ACB16 MMSP improvements</li> <li>- Complete MMSP/ALPS requirements analysis and specification update</li> </ul>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3232 / Multi-Mission Signal Processor					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Commence MMSP-R/ALPS technology development													
FY 2024 Base Plans:													
- Continue ACB16 Commercial Off The Shelf (COTS) Refresh ECPs													
- Continue MMSP-R development to support AEGIS Modernization due to DMSMS and obsolescence issues													
- Continue to maintain alignment with the BMD Program and the associated BSP adjunct to incorporate BMD capability within MMSP during AEGIS Modernization													
- Continue to support ACB16 MMSP improvements													
- Continue MMSP-R ECP/software updates													
- Continue MMSP-R/ALPS technology development													
FY 2024 OCO Plans:													
N/A													
FY 2023 to FY 2024 Increase/Decrease Statement:													
Decrease in FY24 funding aligns with planned technology refresh development efforts.													
Accomplishments/Planned Programs Subtotals									2.931	2.626	2.577	0.000	2.577
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• OPN/0900: BLI 0900/ OPN DDG Modernization	535.667	744.341	628.532	-	628.532	927.280	855.780	942.398	958.412	9,631.876	19,383.298		
Remarks													
D. Acquisition Strategy													
Multi-Mission Signal Processor (MMSP) provides simultaneous AAW/BMD Multi-mission capability for AEGIS Modernization Program and leverages BMD 4.0.1 and SPY-1D (V) designs. Lockheed Martin (Moorestown, New Jersey) is awarded a sole source, cost-plus-fixed-fee, level-of-effort job order under a Basic Ordering Agreement (BOA) via NSWC Crane in support of the AEGIS weapons system, AN/SPY-1 radar. Efforts include engineering services and incidental supplies for radar readiness enhancements and improvements. Work will be performed in Moorestown, New Jersey. MMSP development efforts support integration of BMD 5.0 signal processing, and will lead to the OPN/SCN procurement for shore sites and shipsets. MMSP technology refresh will be incorporated into Baseline 9 and follow. MMSP/ALPS integration provides adjunct processing for data collection.													

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sen sors				Project (Number/Name) 3232 / Multi-Mission Signal Processor					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEM ENGINEERING	SS/CPFF	Lockheed Martin : Moorestown, NJ	118.086	0.063	Aug 2022	0.000		0.000		-		0.000	0.000	118.149	-
SYSTEM ENGINEERING	C/CPFF	AEGIS Techrep : Moorestown, NJ	5.904	0.037	Mar 2022	0.088	Mar 2023	0.116	Feb 2024	-		0.116	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	SS/FP	APL/JHU : Laurel, MD	5.161	0.000		0.000		0.000		-		0.000	0.000	5.161	-
SYSTEM ENGINEERING	WR	SCSTC : Dahlgren, VA	1.815	0.068	Oct 2021	0.080	Oct 2022	0.074	Oct 2023	-		0.074	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NRL : Washington, DC	3.491	0.114	Dec 2021	0.130	Nov 2022	0.148	Nov 2023	-		0.148	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	MIPR	MIT/LL : Lexington, MA	1.453	0.000		0.000		0.000		-		0.000	0.000	1.453	-
SYSTEM ENGINEERING	WR	NSWC/DD : Dahlgren, VA	11.005	0.352	Mar 2022	0.363	Oct 2022	0.399	Oct 2023	-		0.399	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	SCSC : Wallops Island, VA	0.019	0.000		0.000		0.000		-		0.000	0.000	0.019	-
SYSTEM ENGINEERING	WR	NSWC/CR : Crane, IN	8.275	1.500	Oct 2021	1.164	Nov 2022	0.995	Oct 2023	-		0.995	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NSWC/PHD : Port Hueneme, CA	5.016	0.437	Oct 2021	0.441	Nov 2022	0.485	Oct 2023	-		0.485	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	Office of Naval Research : Arlington, VA	5.779	0.000		0.000		0.000		-		0.000	0.000	5.779	-
Subtotal			166.004	2.571		2.266		2.217		-		2.217	Continuing	Continuing	N/A
Remarks															
1. Since the FY23 budget request, added LM FY22 requirement to fund MMSP-R Power Supply Test Sets.															



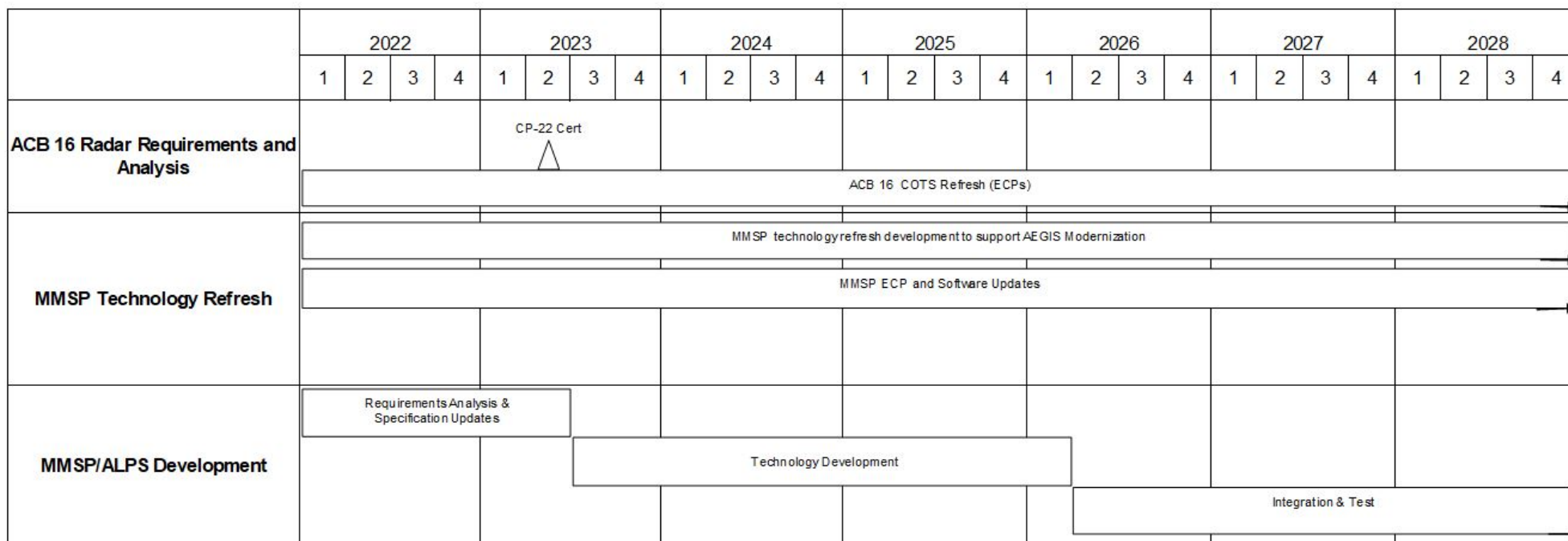
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3232 / Multi-Mission Signal Processor					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Allot	PEOIS2 : Washington, DC	0.259	0.010	Apr 2022	0.010	Mar 2023	0.010	Jan 2024	-		0.010	Continuing	Continuing	Continuing
Support Management Services	C/CPIF	SPA : Washington, DC	0.889	0.238	Nov 2021	0.350	Dec 2022	0.350	Dec 2023	-		0.350	Continuing	Continuing	Continuing
Support Management Services	SS/CPIF	SPA (PSS Bridge) : Washington, DC	1.403	0.000		0.000		0.000		-		0.000	0.000	1.403	-
Support Management Services	SS/CPIF	SPA (ESS Bridge) : Washington, DC	0.000	0.112	Sep 2022	0.000		0.000		-		0.000	0.000	0.112	-
Support Management Services	C/CPIF	SPA (SEAPORT) : Washington, DC	2.247	0.000		0.000		0.000		-		0.000	0.000	2.247	-
Support Management Services	C/CPFF	CACI : Washington, DC	0.094	0.000		0.000		0.000		-		0.000	0.000	0.094	-
Support Management Services	C/CPFF	TMB : Washington, DC	0.031	0.000		0.000		0.000		-		0.000	0.000	0.031	-
Support Management Services	C/CPFF	Strategic Insight : Washington, DC	0.027	0.000		0.000		0.000		-		0.000	0.000	0.027	-
Subtotal			4.950	0.360		0.360		0.360		-		0.360	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			170.954	2.931		2.626		2.577		-		2.577	Continuing	Continuing	N/A
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604501N / <i>Advanced Above Water Sensors</i>	<b>Project (Number/Name)</b> 3232 / <i>Multi-Mission Signal Processor</i>
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ACB 16 COTS Refresh continues beyond the FYDP.  
 Since FY23 budget request, ACB 16 CP-22 Certification slipped four quarters to Q2FY23 to align with the ACB 16 Combat System schedule.  
 MMSP Technology Refresh continues beyond the FYDP.  
 MMSP/ALPS currently continues beyond the FYDP.  
 ALPS development on hold waiting on OPNAV decision for integration into MMSP. As a result, the end of Requirements Analysis & Specification, and the start of Technology Development each delayed 4 Qtrs since the FY23 budget request. Subsequently, the end of Technology Development and the start of Integration & Test also slipped 4 Qtrs to Q1 and Q2FY26 respectively.

**Acronyms:**

ACB: AEGIS Capability Build	CP: Capability Package
ALPS: AEGIS Linear Processing System	ECP: Engineering Change Proposal
COTS: Commercial Off The Shelf	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sen sors	Project (Number/Name) 3232 / Multi-Mission Signal Processor	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3232				
ACB16 COTS Refresh (ECPs)	1	2022	4	2028
MMSP Technology Refresh to Support AEGIS Modernization	1	2022	4	2028
MMSP ECP and Software Updates	1	2022	4	2028
MMSP/ALPS Requirements Analysis and Specifications Update	1	2022	2	2023
CP-22 Certification Support	2	2023	2	2023
MMSP/ALPS Technology Development	3	2023	1	2026
MMSP/ALPS Integration and Test	2	2026	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sen sors				Project (Number/Name) 3243 / Shipboard Passive Electro-Optical Infrared Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3243: Shipboard Passive Electro-Optical Infrared Development	42.921	46.705	61.912	103.084	-	103.084	96.221	58.255	47.851	13.002	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

Shipboard Passive Electro-Optical Infrared (SPEIR) Block I will be an open architecture system that addresses near-term capability requirements and associated gaps identified in the 2019 SPEIR Capability Development Document (CDD). This program answers an urgent counter unmanned aircraft system operational need for the Fleet to provide an initial capability by FY26. The SPEIR acquisition leverages technology developed under the Office of Naval Research's (ONR's) Combined EO/IR Surveillance and Response System (CESARS) Science and Technology (S&T) effort, specifically related to the Shipboard Panoramic EO/IR Cueing and Surveillance System (SPECSS).

SPEIR Block I will provide a common 360-degree EO/IR Electronic Support (ES) capability to surface ships that will passively find, fix, track, and target current / emerging threats in support of the following warfare missions: Anti-Ship Cruise Missile (ASCM) Defense, Counter-Unmanned Aircraft Systems (UAS), Counter-Fast Attack Craft / Fast In-shore Attack Craft (FAC/FIAC), and Mobility.

SPEIR Block I will consist of a passive Wide Field of View (WFOV) capability with a 360-degree field-of-view optical sensors for autonomous detection and tracking for 24/7 day/night shipboard situational awareness. SPEIR Block I will also include an enhanced, high resolution Narrow-Medium Field of View (NFOV) and laser range-finding capability that will provide 3D target tracking, identification, and threat assessment. SPEIR Block I will have limited integration with shipboard combat systems to exchange target track data and disseminate motion imagery.

This program includes risk reduction initiatives for modeling and simulation, sensor protection counter-countermeasures, Sensor Fusion Algorithms and combat system track publishing to enable limited Combat System Integration (CSI). SPEIR Block II will be a future program that will build on the modular open system architecture of Block I to address longer-term capability requirements to include an expanded spatial coverage envelope, Periscope Detection and Discrimination (PDD) and Mine Like Object (MLO) avoidance. SPEIR Block II will also provide full combat system integration and will include a government software development and integration effort for Soft-Kill Coordination System (SKCS) to manage ES engagements.

The FY24 budget request supports detailed hardware and software design of the SPEIR Block I system, completion of core software builds and associated integration effort, and procurement of material for Engineering Development Models (EDMs). Scope includes execution of Critical Design Review (CDR), continued test planning, training curriculum development, and Modeling and Simulation (M&S) development and maturation. Increases from FY22-FY25 are consistent with expected ramp up of developmental activities of a new Acquisition Category II program during the Engineering and Manufacturing Development (E&MD) phase. The FY24 budget request also includes funding to support E&MD contract execution, including a major System Engineering Technical Review (SETR) event (CDR) and will also support integration activities to ensure compatibility with the Combat System. Additional funds have been received in FY24-FY27 to align with the program MS B Service Cost

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors		Project (Number/Name) 3243 / Shipboard Passive Electro-Optical Infrared Development		
Position (SCP), including additional funding for SPEIR Combat System Integration tasking not previously included in this funding line. RDT&E costs are anticipated to ramp down starting in FY25 as Integration & Development Test planning is complete, EDM material procurements are completed, and all three (3) EDMs are assembled and integrated to support the execution of developmental test events prior to program transition to the Production phase.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: SPEIR Block I Systems Engineering		14.813	15.147	15.449	0.000	15.449
Articles:		-	-	-	-	-
FY 2023 Plans:						
- Continue support of Engineering Development Model (EDM) hardware and software development and integration						
- Continue review and assessment of contract deliverables						
- Prepare for and conduct Preliminary Design Review (PDR)						
- Continue development of training curriculum						
- Continue test planning for Design Verification Testing (DVT) and Environmental Qualification Testing (EQT)						
- Continue test program Modeling and Simulation (M&S) development and maturation						
- Commence integrated topside design activities for large deck ship classes						
FY 2024 Base Plans:						
- Continue to support and oversee Engineering Development Model (EDM) hardware and software development and integration						
- Continue review and assessment of contract deliverables						
- Continue systems engineering activities for detailed design						
- Prepare and conduct Critical Design Review (CDR)						
- Continue test program Modeling and Simulation (M&S) development and maturation						
- Continue integrated topside design activities for large deck ship classes						
- Support integration activities to ensure compatibility with Combat System						
- Perform test planning for Formal Qualification Testing (FQT)						
FY 2024 OCO Plans:						
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						
Increase in FY24 aligns with planned development efforts.						
Title: SPEIR Block I Development		31.892	46.765	87.635	0.000	87.635
Articles:		-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors		Project (Number/Name) 3243 / Shipboard Passive Electro-Optical Infrared Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>FY 2023 Plans:</b></p> <ul style="list-style-type: none"><li>- Commence purchase of Long Lead Material items for up to three (3) Engineering Development Model (EDM) builds</li><li>- Continue Engineering &amp; Manufacturing Development (E&amp;MD) design activities</li><li>- Commence development of end item software builds</li><li>- Complete Release 1 Software Build</li><li>- Prepare for and conduct Preliminary Design Review (PDR)</li><li>- Development and initial delivery of Interface Control Documents</li><li>- Development and initial delivery of Logistics Products Data</li><li>- Completion of risk management framework Step 3: Implement Security Controls</li><li>- Continue integrated topside design activities for DDG 51 class</li></ul> <p><b>FY 2024 Base Plans:</b></p> <ul style="list-style-type: none"><li>- Continue Engineering &amp; Manufacturing Development (E&amp;MD) design activities</li><li>- Continue development of end item software builds</li><li>- Complete Release 2 and Release 3 software builds</li><li>- Prepare for and conduct Critical Design Review (CDR)</li><li>- Purchase all remaining material for three (3) EDM builds</li><li>- Perform test planning for FQT and Operational Assessment (OA)</li><li>- Execute engineering testing at component and subsystem level</li><li>- Commence integration of EDM units</li><li>- Commence integrated topside design activities for large deck ship classes</li><li>- Commence Combat System Integration engineering efforts</li></ul> <p><b>FY 2024 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></p> <p>Increase in FY24 is required to support Critical Design Review (CDR), additional software build deliveries, the procurement of all materials for three (3) EDMs, execution of component and subsystem-level engineering testing, and awarding the contract for Combat System Integration engineering efforts. Additional funds have been received in FY24 to align with the program MS B Service Cost Position (SCP), including additional funding for SPEIR Combat System Integration tasking not previously included in this funding line.</p>						
Accomplishments/Planned Programs Subtotals		46.705	61.912	103.084	0.000	103.084

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604501N / <i>Advanced Above Water Sen sors</i>	<b>Project (Number/Name)</b> 3243 / <i>Shipboard Passive Electro-Optical Infrared Development</i>	

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/2981: <i>SPEIR BLOCK 1</i>	0.000	0.000	37.784	37.784	75.568	27.872	28.590	29.146	29.730	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

SPEIR will develop initial capability and required upgrades based on integrating technology advances and adding functional capabilities in an evolutionary fashion. Each Block acquisition program will be developed and contracted in an individual yet coordinated and overlapping fashion. Specifically, SPEIR involves the work performed under the CESARS program sponsored by ONR and transitioning the passive EO/IR component (SPECSS) which focuses on designing/architecting an advanced, integrated, EO/IR WFOV surveillance capability system for Naval Surface Platforms. The SPEIR program awarded a cost-plus fixed fee contract for Engineering and Manufacturing Development (E&MD) in April 2022. This contract includes fixed price incentive fee options for future procurement of Low Rate Initial Production (LRIP) units following Milestone C planned for FY25. The initial E&MD contract includes the procurement of a production-level Technical Data Package (TDP) to support full and open competition for future procurement of additional LRIP and Full Rate Production (FRP) units.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3243 / Shipboard Passive Electro-Optical Infrared Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SPEIR Block 1 Development	C/CPIF	L3 Harris : Mason, OH	13.842	31.892	Apr 2022	46.765	Nov 2022	77.429	Oct 2023	-		77.429	Continuing	Continuing	Continuing
SPEIR Block 1 Combat System Integration	C/CPIF	TBD : TBD	0.000	0.000		0.000		10.206	Oct 2023	-		10.206	Continuing	Continuing	Continuing
Subtotal			13.842	31.892		46.765		87.635		-		87.635	Continuing	Continuing	N/A
Remarks															
1) Increase from FY23 to FY24 is required to support completion of detailed design work, execution of Critical Design Review, procurement of all material for Engineering Development Models, delivery of tactical software builds, initial integration of EDM units, and initial efforts for Combat System Integration. Additional funds have been received in FY24 since PB23 to align with the program MS B Service Cost Position (SCP), including additional funding for SPEIR Combat System Integration tasking not previously included in this funding line.															
2) Decrease in FY23 since the FY23 budget request is due to funding reduction resulting in less development effort than previously planned.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SPEIR Block I Integrated Logistics Support	WR	NSWC Crane : Crane, IN	1.077	0.750	Oct 2021	0.765	Nov 2022	0.780	Nov 2023	-		0.780	Continuing	Continuing	Continuing
SPEIR Block I Integrated Logistics Support	WR	NAVSUP (ILA) : Mechanicburg, PA	0.007	0.000		0.000		0.000		-		0.000	0.000	0.007	-
SPEIR Block I Systems Engineering Support	WR	NSWC Crane : Crane, IN	2.634	2.478	Oct 2021	2.508	Nov 2022	2.560	Nov 2023	-		2.560	Continuing	Continuing	Continuing
SPEIR Block I Systems Engineering Support	WR	NSWC Dahlgren : Dahlgren, VA	0.574	0.900	Jan 2022	0.612	Nov 2022	0.624	Nov 2023	-		0.624	Continuing	Continuing	Continuing
SPEIR Block I Systems Engineering Support	WR	NRL : Washington, DC	1.324	1.230	Mar 2022	1.255	Mar 2023	1.280	Nov 2023	-		1.280	Continuing	Continuing	Continuing
SPEIR Block I Systems Engineering Support	SS/CPFF	APL : Laurel, MD	1.713	1.800	Dec 2021	1.815	Nov 2022	1.851	Nov 2023	-		1.851	Continuing	Continuing	Continuing
SPEIR Block I Systems Engineering Support	MIPR	MIT-LL : Cambridge, MA	0.897	0.523	Mar 2022	0.612	Nov 2022	0.624	Nov 2023	-		0.624	Continuing	Continuing	Continuing
SPEIR Block I Systems Engineering Support	SS/CPFF	DLA : Washington, DC	6.865	0.000		0.000		0.000		-		0.000	0.000	6.865	-



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3243 / Shipboard Passive Electro-Optical Infrared Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SPEIR Block I Systems Engineering Support	SS/CPFF	DTIC : Fort Belvoir, VA	2.501	0.000		0.000		0.000		-		0.000	0.000	2.501	-
SPEIR Block I Systems Engineering Support	SS/CPFF	PEO STRI : Orlando, FL	1.248	0.000		0.000		0.000		-		0.000	0.000	1.248	-
SPEIR Block I Platform Integration Studies	C/BA	BIW : Bath. ME	0.000	0.000		0.306	Mar 2023	0.312	Nov 2023	-		0.312	Continuing	Continuing	Continuing
SPEIR Sensor Fusion	MIPR	GTRI : Atlanta, GA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
SPEIR Sensor Fusion	WR	NSWC Dahlgren : Dahlgren, VA	0.238	0.480	Jan 2022	0.235	Mar 2023	0.240	Nov 2023	-		0.240	Continuing	Continuing	Continuing
SPEIR Sensor Fusion	SS/CPFF	APL : Laurel, MD	0.788	0.500	Dec 2021	0.510	Mar 2023	0.520	Nov 2023	-		0.520	Continuing	Continuing	Continuing
SPEIR Sensor Fusion	WR	NSWC Crane : Crane, IN	1.101	0.900	Oct 2021	1.173	Mar 2023	1.196	Nov 2023	-		1.196	Continuing	Continuing	Continuing
SPEIR Track Publishing	WR	NSWC Dahlgren : Dahlgren, VA	0.872	0.500	Jan 2022	0.510	Nov 2022	0.520	Nov 2023	-		0.520	Continuing	Continuing	Continuing
SPEIR Track Publishing	SS/CPFF	APL : Laurel, MD	0.338	0.500	Dec 2021	0.510	Nov 2022	0.520	Nov 2023	-		0.520	Continuing	Continuing	Continuing
Subtotal			22.177	10.561		10.811		11.027		-		11.027	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	1.670	1.300	Jan 2022	1.326	Nov 2022	1.353	Nov 2023	-		1.353	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	2.486	0.900	Mar 2022	0.918	Nov 2022	0.937	Nov 2023	-		0.937	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	SS/CPFF	APL : Laurel, MD	1.070	0.600	Dec 2021	0.612	Nov 2022	0.624	Nov 2023	-		0.624	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	COMOPTEVFOR : Norfolk, VA	0.326	0.152	Sep 2022	0.155	Dec 2022	0.158	Dec 2023	-		0.158	Continuing	Continuing	Continuing
Subtotal			5.552	2.952		3.011		3.072		-		3.072	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3243 / Shipboard Passive Electro-Optical Infrared Development					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SPEIR Block I Program Management	C/CPFF	SPA ESS (SEAPORT) : Washington, DC	0.780	0.500	Dec 2021	0.510	Nov 2022	0.520	Nov 2023	-		0.520	Continuing	Continuing	Continuing
SPEIR Block I Program Management	C/CPFF	TMB BFM (SEAPORT) : Washington, DC	0.325	0.500	Dec 2021	0.510	Nov 2022	0.520	Nov 2023	-		0.520	Continuing	Continuing	Continuing
SPEIR Block I Program Management	C/CPFF	BAH ILS (SEAPORT) : Washington, DC	0.195	0.250	Dec 2021	0.255	Nov 2022	0.260	Nov 2023	-		0.260	Continuing	Continuing	Continuing
SPEIR Block I Program Management	Sub Allot	NAVSEA Travel : Washington, DC	0.050	0.050	Sep 2022	0.050	Oct 2022	0.050	Oct 2023	-		0.050	Continuing	Continuing	Continuing
Subtotal			1.350	1.300		1.325		1.350		-		1.350	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			42.921	46.705		61.912		103.084		-		103.084	Continuing	Continuing	N/A
Remarks															

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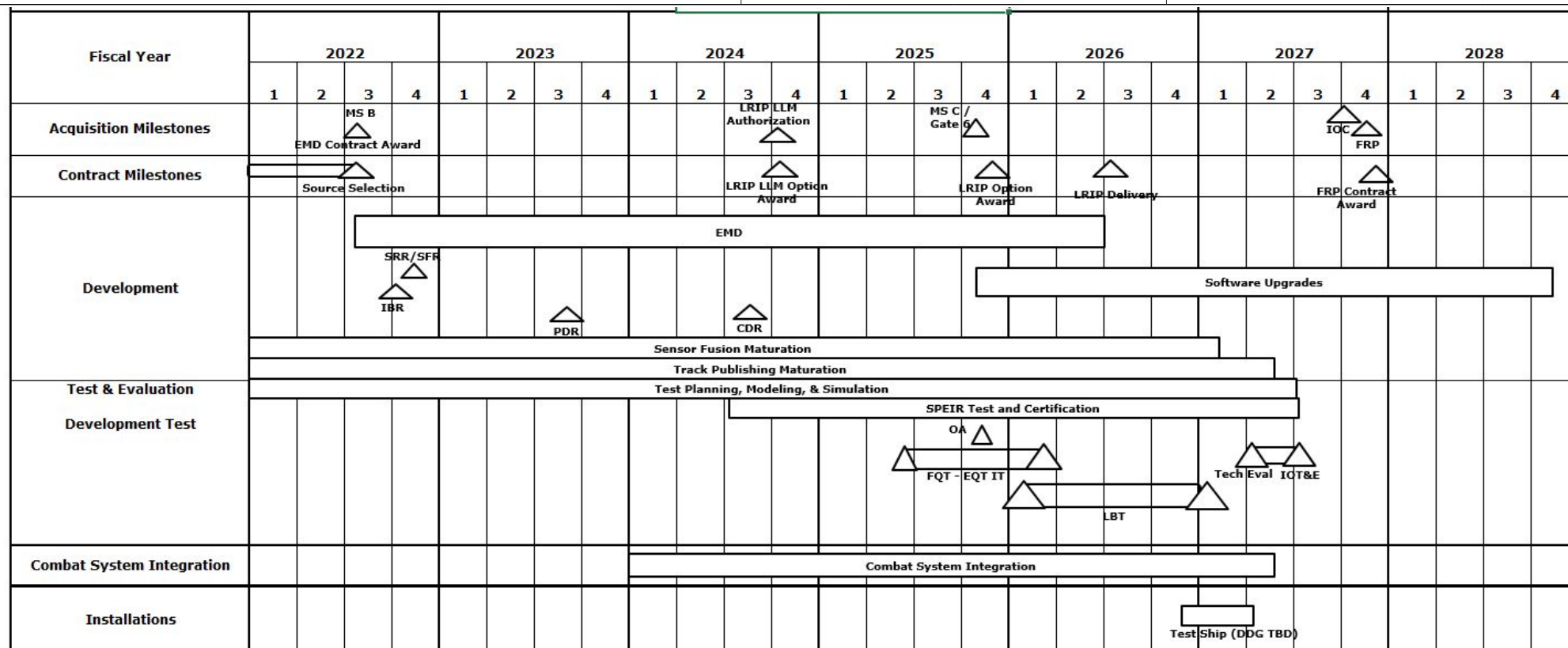
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sors*

### 3243 / Shipboard Passive Electro-Optical Infrared Development



Acronyms: CDR - Critical Design Review; EMD - Engineering & Manufacturing Development; EQT - Environmental Qualification Testing; FQT - Formal Qualification Testing; FRP - Full Rate Production; IBR - Integrated Baseline Review; IT - Integrated Testing; IOC - Initial Operational Capability; IOT&E - Initial Operational Test & Evaluation; LBT - Land Based Testing; LLM - Long Lead Material; LRIP - Low Rate Initial Procurement; MS - Milestone; OA - Operational Assessment; PDR - Preliminary Design Review; SFR - System Functional Review; SRR - System Requirements Review

Changes from PB23 reflect alignment to SPEIR Block I MS B Service Cost Position and established funding for modifications to AEGIS Combat System to develop an interface to SPEIR Block I to subscribe to SPEIR tracks and develop Combat System doctrine for EO/IR source tracts in support of cited mission areas. Additionally, schedule changes support the software upgrades required for alternate ship class configurations. A reduction in Software development efforts has resulted in a slip of PDR and CDR events two months to the right.

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0604501N / Advanced Above Water Sensors

## Project (Number/Name)

3243 / Shipboard Passive Electro-Optical Infrared Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3243</b>				
Sensor Fusion Maturation	1	2022	1	2027
Track Publishing Maturation	1	2022	2	2027
Test Planning, Modeling & Simulation	1	2022	3	2027
Milestone B	3	2022	3	2022
E&MD Contract Award	3	2022	3	2022
Engineering & Manufacturing Development (E&MD)	3	2022	2	2026
Integrated Baseline Review (IBR)	4	2022	4	2022
System Requirements Review/System Functional Review (SRR/SFR)	4	2022	4	2022
Preliminary Design Review (PDR)	3	2023	3	2023
Combat System Integration	1	2024	2	2027
Critical Design Review (CDR)	3	2024	3	2024
Test and Certification	3	2024	3	2027
LRIP Long Lead Material (LLM) Authorization	4	2024	4	2024
LRIP LLM Option Award	4	2024	4	2024
Formal Qualification Test (FQT) / Environmental Qualification Test (EQT) Integrated Testing (IT)	2	2025	1	2026
Milestone C	4	2025	4	2025
LRIP Option Award	4	2025	4	2025
Software Upgrades	4	2025	4	2028
Operational Assessment (OA)	4	2025	4	2025
Land Based Test (LBT)	1	2026	1	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors		Project (Number/Name) 3243 / Shipboard Passive Electro-Optical Infrared Development	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
LRIP Delivery	3	2026	3	2026
Test Ship Availability (DDG TBD)	4	2026	2	2027
Tech Eval/Initial Operational Test & Evaluation (IOT&E)	2	2027	3	2027
Initial Operational Capability (IOC)	4	2027	4	2027
Full Rate Production (FRP)	4	2027	4	2027
FRP Contract Award	4	2027	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3301 / Improved Capabilities SPY-1 Radar			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3301: Improved Capabilities SPY-1 Radar	63.391	9.802	8.234	9.735	-	9.735	14.083	12.599	12.214	12.385	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Improved Capabilities for SPY-1 Radar: These Reliability, Maintainability, and Availability (RM&A) improvements and solid state technology insertions are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/ SPY-1 Radar Total Ownership Cost Reductions. Improvements, such as Solid State Insertion to address Diminishing Manufacturing Sources and Material Shortages (DMSMS), will yield reductions in annual fleet maintenance costs and is a top fleet requirement as part of the AEGIS Wholeness initiative. In addition to RM&A improvements, warfighting improvements funded in this line includes the following: Transmitter Noise Cancellation (TNC) development includes hardware/software to counter low radar cross section, low altitude threats. Side Lobe Blanking (SLB) addresses shortfalls in mixed electronic attack environment while in an Integrated Air and Missile Defense (IAMD) mode. The Ship-Based Non-Cooperative Target Recognition (SBNCTR) program Phases 2A and 3 will develop algorithms to provide classification for targets. Advanced Calibration Experiment (ACE) Phase 2 is being incorporated into Baseline 9. Elevated Radar Advanced Calibration Experiment (ERACE) Phases 1/2 and 3 incorporate into Baseline 9. Electronic Attack (EA) and Rapid Radar Capability Improvement Program (R2CIP) develop solutions for evolving EA threats.

The FY24 budget request continues the development efforts of SBNCTR Phase 2A, TNC Phase 1/2, EA improvements, Digital Receiver Upgrade (DRU) (formerly digital Low Noise Amplifier (dLNA)) Requirements and Specification Analysis, and SLB Technology Development, completes Elevated Radar Advanced Calibration Experiment (ERACE) Phase 1/2, and commences ERACE Phase 3 development.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Improved Capabilities SPY-1 Radar	9.802	8.234	9.735	0.000	9.735
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Continue SBNCTR Phase 2A development to include integration of other sensors and threats</li> <li>- Merge TNC Phase 1 with Phase 2 and continue development</li> <li>- Complete Side Lobe Blanking (SLB) requirement analysis &amp; specification and commence Technology Development</li> <li>- Continue EA improvements technology development, integration and test</li> <li>- Continue Radar Improvements Analysis</li> <li>- Continue DRU requirements and specification analysis</li> </ul>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3301 / Improved Capabilities SPY-1 Radar					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue ERACE Phase 1/2 development and conduct ERACE Phase 1/2 FLEX Event to test multiple sensors in an at-sea operational environment</div> <div><b>FY 2024 Base Plans:</b> - Continue SBNCTR Phase 2A development to include integration of other sensors, and complete Integration &amp; Test - Continue TNC Phase 1/2 development and complete In Process Review (IPR) #1 - Continue SLB technology development - Continue EA improvements technology development, integration and test - Continue Radar Improvements Analysis - Continue DRU requirements and specification analysis - Complete ERACE Phase 1/2 development and complete CP 24 certification - Commence ERACE Phase 3 development and complete requirements definition</div> <div><b>FY 2024 OCO Plans:</b> N/A</div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase in FY24 supports the start of ERACE Phase 3 development.</div>													
Accomplishments/Planned Programs Subtotals									9.802	8.234	9.735	0.000	9.735
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• O&MN/1C1C/0702228N: O&M,N AEGIS Wholeness SPY Transmitter Reliability	4.027	4.488	4.533	-	4.533	4.608	5.537	5.650	5.731	Continuing	Continuing		
• OPN/2980: OPN SPY-1 RM&A IMPROVEMENTS	15.682	8.576	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1,123.055		
• OPN/2981: OPN SPY-1 RM&A IMPROVEMENTS	0.000	0.000	48.150	-	48.150	45.981	46.352	56.711	57.865	266.147	521.206		
Remarks													

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sen sors	Project (Number/Name) 3301 / Improved Capabilities SPY-1 Radar

**D. Acquisition Strategy**

Improved Capabilities SPY-1 Reliability, Maintainability, and Availability (RM&A) will design and develop an Ordnance Alterations (ORDALT) Package for fixes and modifications to known transmitter, signal processor, microwave tube (MWT), and logistic shortcomings. Lockheed Martin Corporation (Moorestown, New Jersey) was awarded a sole source, cost-plus-fixed-fee, level-of-effort job order under a Basic Ordering Agreement (BOA) via NSWC Crane. The contract supports the development and fielding of AN/SPY-1 Radar capability upgrades and reliability improvements in support of AEGIS combat system. The current period of performance on the BOA is through August 2023 and will continue under a follow-on BOA. Investment in development of SPY-1 RM&A improvements to address failure mechanisms and improve reliability is planned to continue beyond the FYDP. Radar capability upgrades (SBNCTR, TNC, ACE, ERACE and SLB) and reliability improvements will be incorporated into Baseline 9 and follow.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sen sors				Project (Number/Name) 3301 / Improved Capabilities SPY-1 Radar					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEM ENGINEERING	MIPR	Office of Naval Research : Arlington, VA	1.000	0.000		0.000		0.000		-		0.000	0.000	1.000	-
SYSTEM ENGINEERING	C/CPFF	Raytheon : Sudbury, MA	1.941	0.000		0.000		0.000		-		0.000	0.000	1.941	-
SYSTEM ENGINEERING	WR	NSWC/Crane, IN : Crane, IN	23.957	5.211	Oct 2021	2.892	Oct 2022	4.494	Oct 2023	-		4.494	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	SS/CPFF	Lockheed Martin : Moorestown, NJ	18.234	0.000		0.000		0.000		-		0.000	0.000	18.234	-
SYSTEM ENGINEERING	SS/CPFF	AEGIS Techrep : Moorestown, NJ	1.366	0.071	Sep 2022	0.234	Mar 2023	0.217	Feb 2024	-		0.217	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	SS/FP	APL/JHU : Laurel, MD	2.273	0.518	Jan 2022	0.445	Nov 2022	0.455	Nov 2023	-		0.455	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	SCSTC : Dahlgren, VA	0.826	0.122	Oct 2021	0.079	Nov 2022	0.074	Nov 2023	-		0.074	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NRL : Washington, DC	1.674	0.520	Dec 2021	0.472	Nov 2022	0.695	Nov 2023	-		0.695	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	MIPR	MIT/LL : Lexington, MA	1.734	0.625	Feb 2022	0.611	Jan 2023	0.625	Feb 2024	-		0.625	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NSWC DD : Dahlgren, VA	7.278	1.943	Oct 2021	2.857	Oct 2022	2.366	Oct 2023	-		2.366	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NSWC/PHD : Port Hueneme, CA	0.898	0.177	Jan 2022	0.234	Nov 2022	0.339	Nov 2023	-		0.339	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	MIPR	DTIC : Fort Belvior, VA	0.284	0.000		0.000		0.000		-		0.000	0.000	0.284	-
SYSTEM ENGINEERING	WR	SCSC Wallops : Wallops Island, VA	0.032	0.000		0.000		0.000		-		0.000	0.000	0.032	-
SYSTEM ENGINEERING	C/FFP	Raytheon : Waltham, MA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			61.497	9.187		7.824		9.265		-		9.265	Continuing	Continuing	N/A
Remarks															
1. Since the FY23 budget request, FY23 funding to Field Activities were reduced due to funding reduction in FY23.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors						Project (Number/Name) 3301 / Improved Capabilities SPY-1 Radar			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
2. Increase in FY24 supports the start of ERACE Phase 3 development.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Allot	PEOIWS2 : Washington, DC	0.059	0.020	Mar 2022	0.020	Mar 2023	0.020	Jan 2024	-		0.020	Continuing	Continuing	Continuing
Support Management Services	C/CPIF	SPA : Washington, DC	1.640	0.278	Mar 2022	0.390	Feb 2023	0.450	Dec 2023	-		0.450	Continuing	Continuing	Continuing
Support Management Services	SS/CPIF	SPA (ESS Bridge) : Washington, DC	0.014	0.317	Sep 2022	0.000		0.000		-		0.000	0.000	0.331	-
Support Management Services	SS/CPIF	SPA (PSS Bridge) : Washington, DC	0.181	0.000		0.000		0.000		-		0.000	0.000	0.181	-
Subtotal			1.894	0.615		0.410		0.470		-		0.470	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			63.391	9.802		8.234		9.735		-		9.735	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

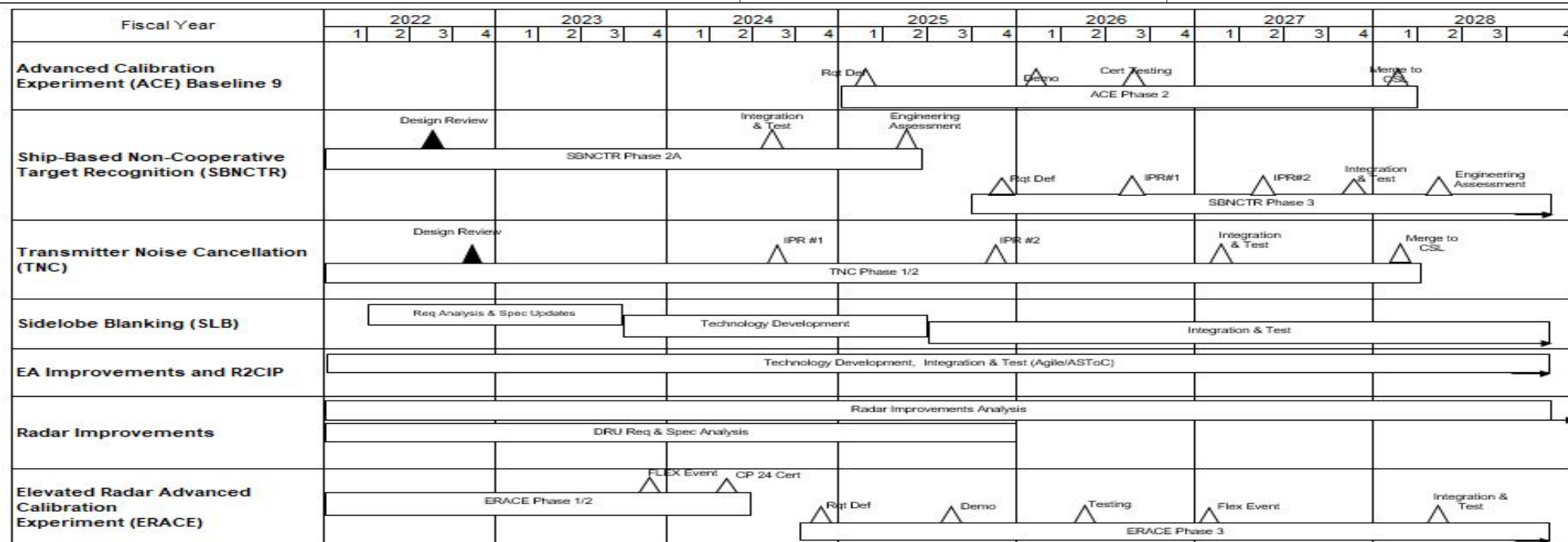
1319 / 5

R-1 Program Element (Number/Name)

PE 0604501N / Advanced Above Water Sensors

Project (Number/Name)

3301 / Improved Capabilities SPY-1 Radar



SBNCTR PHASE 3, SLB, EA Improvements and R2CIP, Radar Improvements and ERACE Phase 3 continue beyond the FYDP.

ACE Phase 2 start slipped from Q1FY24 to Q1FY25 due to funding reduction in FY24.

Since FY23 budget request, SBNCTR Phase 2A Design Review held in lieu of IPR#3 3QFY22. Phase 2A Integration &amp; Test and Engineering Assessment delayed 2 QTRs and Phase 3 slipped from Q2FY24 to Q4FY25 due to funding reduction in FY24.

Since FY23 budget request, TNC Phase 1 merged with Phase 2 to become Phase 1/2. All milestones shifted to support the merge with CSL in FY28. TNC Phase 1/2 Design Review held in 4QFY22. IPR#1 is now planned for Q3FY24 and IPR#2 is planned for Q4FY25.

Since FY23 budget request, the end of SLB Requirements Analysis &amp; Specification, and the start of Technology Development each delayed 2 Qtrs due to FY23 funding reduction. Subsequently, the end of Technology Development and the start of Integration &amp; Test slipped 2 Qtrs to Q2 and Q3FY25 respectively.

Since FY23 budget request, DRU Requirements &amp; Specification Analysis extended 10 QTRs to support POM Issue and FY25 Missile Defense Agency (MDA) Demo.

Since FY23 budget request, ERACE Phase 1/2 FLEX Event and CP 24 Cert delayed 4 QTRs to align and integrate into CP 24.

ERACE Phase 3, all milestones, slipped 3 Qtrs due to funding reduction in FY24.

Historically, Radar Improvement efforts focused on transmitter upgrades. Scope has expanded to include Signal Processor and Antenna groups as well as transmitter group.

**Acronyms:**

ASToC: AEGIS Speed to Capability  
 CP: Capability Package  
 CSL: Common Source Library  
 DRU: Digital Receiver Upgrade

EA: Electronic Attack  
 ERACE: Elevated Radar ACE  
 FLEX: Fleet Exercise

I&T: Integration & Test  
 IPR: In-Process Review  
 R2CIP: Rapid Radar Capability Improvement Program

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604501N / Advanced Above Water Sensors

## Project (Number/Name)

3301 / Improved Capabilities SPY-1 Radar

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3301</b>				
EA Improvements and R2CIP Technology Development, Integration & Test	1	2022	4	2028
Radar Improvements Analysis	1	2022	4	2028
DRU Requirements & Specification Analysis	1	2022	4	2025
SLB Requirements Analysis and Specification	2	2022	3	2023
SBNCTR Phase 2A Design Review	3	2022	3	2022
TNC Phase 1/2 Design Review	4	2022	4	2022
SLB Technology Development	4	2023	2	2025
ERACE Phase 1/2 Flex Event	4	2023	4	2023
SBNCTR Phase 2A Integration & Test	3	2024	3	2024
ERACE Phase 1/2 CP24-1 Certification	2	2024	2	2024
TNC Phase 1/2 IPR #1	3	2024	3	2024
ERACE Phase 3 Requirements Definition	4	2024	4	2024
SBNCTR Phase 2A Engineering Assessment	2	2025	2	2025
ERACE Phase 3 Demo	3	2025	3	2025
ACE Phase 2 Requirements Definition	1	2025	1	2025
SLB Integration and Test	3	2025	4	2028
ERACE Phase 3 Testing	2	2026	2	2026
SBNCTR Phase 3 Requirements Definition	4	2025	4	2025
TNC Phase 1/2 IPR #2	4	2025	4	2025
ACE Phase 2 Demo	1	2026	1	2026
ERACE Phase 3 Flex Event	1	2027	1	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors		Project (Number/Name) 3301 / Improved Capabilities SPY-1 Radar	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
ACE Phase 2 Certification Testing		3	2026	3	2026
SBNCTR Phase 3 IPR #1		3	2026	3	2026
TNC Phase 1/2 Integration and Test		1	2027	1	2027
SBNCTR Phase 3 IPR #2		2	2027	2	2027
SBNCTR Phase 3 Integration and Test		4	2027	4	2027
ACE Phase 2 Merge to CSL		1	2028	1	2028
TNC Phase 1/2 Merge to CSL		1	2028	1	2028
SBNCTR Phase 3 Engineering Assessment		2	2028	2	2028
ERACE Phase 3 Integration and Test		2	2028	2	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3408 / AN/SPS-49 Technical Refresh			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3408: AN/SPS-49 Technical Refresh	20.404	0.956	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.360
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
AN/SPS-49 Technology Refresh: AN/SPS-49 is the only Air Surveillance Radar on the LSD 41/49 class ships. Continued degradation and increasingly low radar availability of the AN/SPS-49 Radar is greatly impacting deployed missions, impacting safety of flight and affecting LSD Air Warfare capability and operations and as a result, AN/SPS-49 Technology Refresh is required. This AN/SPS-49 Technology Refresh will include Reliability, Maintainability, and Availability (RM&A) improvements and solid state technology insertions which will reduce cascading failures and mitigate obsolescence issues. In addition, this effort replaces key components to include: transmitter, receiver, exciter, antenna elevation servo control, radar system control, display and signal data processor (SDP). A digital receiver/exciter (DREX) with high-performance computing technology will be a key component in the new system. The current SPS-49 radar has no software so new software is being developed to mimic the current radar functions to maintain compatibility with internal and external interfaces. This effort will improve SPS-49 electronic protection, have increased surveillance range and increased slow moving small target detection, as well as reduce total ownership cost with lower unit cost and smaller size/weight/power requirements. Funding is also to complete development, test and evaluation, validation and integration of a technology refresh of the below deck hardware for the AN/SPS-49A(V)1 Long Range Air Surveillance Radar. FY22 was the last year of funding for this program.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: AN/SPS-49 Technology Refresh  Articles:  FY 2023 Plans: - Prepare for receipt of prototype  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A								0.956	0.000	0.000	0.000	0.000
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								0.956	0.000	0.000	0.000	0.000
C. Other Program Funding Summary (\$ in Millions)												
N/A												

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604501N / <i>Advanced Above Water Sen sors</i>	<b>Project (Number/Name)</b> 3408 / <i>AN/SPS-49 Technical Refresh</i>
<b>C. Other Program Funding Summary (\$ in Millions)</b>		
<b>Remarks</b>		
<b>D. Acquisition Strategy</b>		
<p>To accomplish the SPS-49 Tech Refresh, the Navy is leveraging an Other Transactional Authority (OTA) contract for Industrial Base Analysis and Sustainment Program (IBAS) Radar Systems Should Cost Model/Prototypes for Defense Affordability and Industrial Base Resiliency awarded by OSD in Q4 FY18.</p> <p>Early start development of technologies funded using Small Business Innovative Research (SBIR), Rapid Insertion Funds (RIF), Technology Insertion Funds (TIF) and OSD's Industrial Base Analysis and Sustainment (IBAS) programs will be integrated to provide a below deck technology refresh of the AN/SPS-49 Long Range Air Surveillance Radar. Funds will be used to perform Initial Technical Review, Analysis of Alternatives, System Requirements Review, System Functional Review, Preliminary Design Review and Critical Design Review.</p> <p>Funding for the OTA contract is required to complete subsystem development to include transmitter, receiver/exciter, processor and antenna control unit, integration of the subsystems, and integration with the legacy radar including the antenna, conduct test readiness reviews, full system test and evaluation for factory acceptance, and delivery of two Engineering Development Models (EDMs).</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sen sors						Project (Number/Name) 3408 / AN/SPS-49 Technical Refresh					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
System Engineering	MIPR	Army : Picatinny, NJ	18.323	0.000		0.000		0.000		-		0.000	0.000	18.323	-		
Subtotal			18.323	0.000		0.000		0.000		-		0.000	0.000	18.323	N/A		
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Government Engineering	WR	NRL : Washington, DC	0.300	0.150	Oct 2021	0.000		0.000		-		0.000	0.000	0.450	-		
Government Engineering	WR	NSWC/Crane : Crane. IN	0.292	0.205	Oct 2021	0.000		0.000		-		0.000	0.000	0.497	-		
Government Engineering	WR	NSWC/PHD : Port Hueneme, CA	0.045	0.050	Oct 2021	0.000		0.000		-		0.000	0.000	0.095	-		
Government Engineering	WR	NSWC/CD : Bethesda, MD	0.060	0.030	Oct 2021	0.000		0.000		-		0.000	0.000	0.090	-		
Subtotal			0.697	0.435		0.000		0.000		-		0.000	0.000	1.132	N/A		
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	0.680	0.156	Oct 2021	0.000		0.000		-		0.000	0.000	0.836	-		
Developmental Test & Evaluation (DT&E)	WR	NSWC/Crane : Crane. IN	0.522	0.265	Oct 2021	0.000		0.000		-		0.000	0.000	0.787	-		
Developmental Test & Evaluation (DT&E)	WR	NSWC/PHD : Port Hueneme, CA	0.100	0.050	Oct 2021	0.000		0.000		-		0.000	0.000	0.150	-		
Subtotal			1.302	0.471		0.000		0.000		-		0.000	0.000	1.773	N/A		

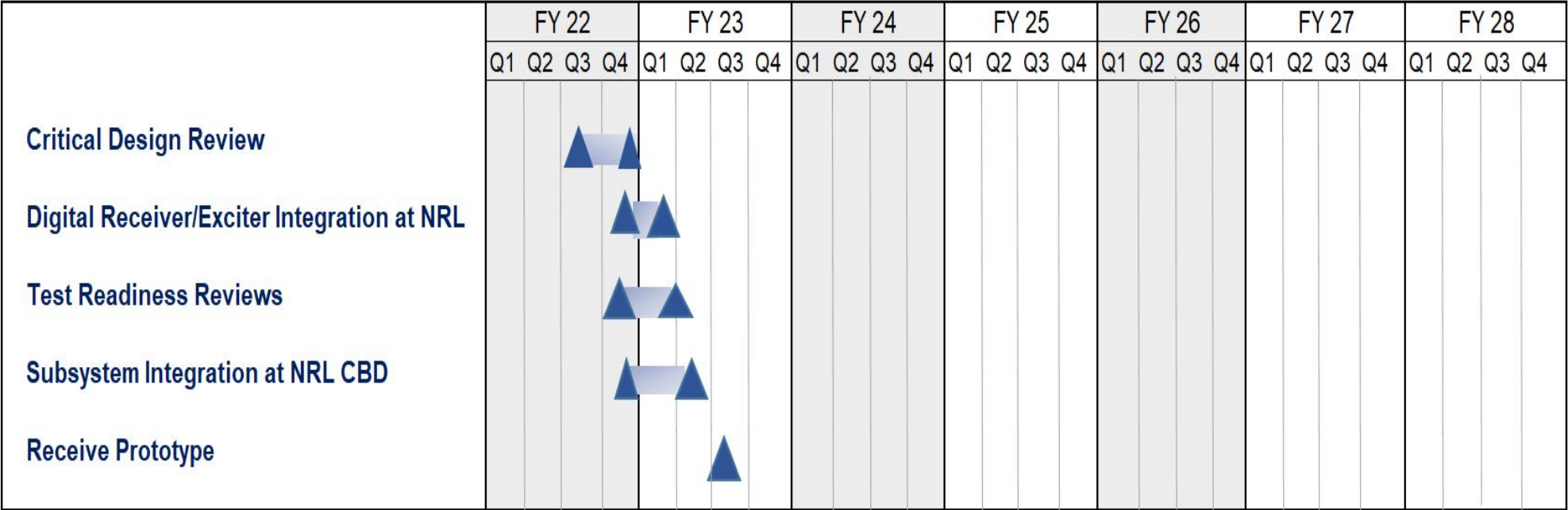


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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors				Project (Number/Name) 3408 / AN/SPS-49 Technical Refresh					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPIF	DTI : Washington, DC	0.082	0.050	Mar 2022	0.000		0.000		-		0.000	0.000	0.132	-
Subtotal			0.082	0.050		0.000		0.000		-		0.000	0.000	0.132	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			20.404	0.956		0.000		0.000		-		0.000	0.000	21.360	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sen sors		Project (Number/Name) 3408 / AN/SPS-49 Technical Refresh	



Contract Period of Performance (PoP) ends AUG 2023

Budget profile capitalizes on early development contracts funded by Small Business Innovation Research (SBIR), Rapid Innovation Funds (RIF), OSD Industrial Base Analysis and Sustainment (IBAS) Programs.

Since DoN24, schedule has slipped up to 30 days due to delays in receiving materials to integrate the prototype.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604501N / Advanced Above Water Sensors	Project (Number/Name) 3408 / AN/SPS-49 Technical Refresh

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3408</b>				
Critical Design Review (CDR)	1	2022	1	2022
Digital Receiver/Exciter Integration/Test at NRL	2	2022	4	2022
Test Readiness Reviews (TRR)	2	2022	4	2022
System/Subsystem Integration Testing at NSWCCD Crane	3	2022	4	2022
Receive Prototype	1	2023	1	2023

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>					PE 0604503N / SSN-688 & Trident Modernization							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	1,321.787	92.168	93.501	93.435	-	93.435	98.363	98.589	98.461	100.022	Continuing	Continuing
0219: <i>Sub Sonar Improvement (ENG)</i>	1,217.521	61.695	60.372	60.822	-	60.822	63.137	63.347	63.805	64.693	Continuing	Continuing
0775: <i>Submarine Supt Equip Prog</i>	104.266	30.473	33.129	32.613	-	32.613	35.226	35.242	34.656	35.329	Continuing	Continuing

**Note**

Beginning in FY20, funding for the following projects was realigned from PE 0603503N to PE 0604280N: Project 0742 - Sub Integrated Antenna System and Project 1411 - Sub Tactical Communication System.

**A. Mission Description and Budget Item Justification**

SSN-688 & Trident Modernization delivers block updates to Submarine Sonar systems and develops improved Submarine Electronic Warfare (EW) systems. These development activities ensure all Submarine Classes maintain clear acoustical, tactical, and operational superiority over Submarines and Surface Combatants in Joint Littoral Warfare, Joint Intelligence Surveillance Reconnaissance (ISR), Indications and Warnings, Information Operations including Cyber, and Special Operations Force (SOF) support. Current developments are focused on supporting Joint Littoral Warfare, Regional Sea Denial, Strike Group Support, Diesel Submarine Detection, Joint Surveillance and Peacetime Engagement, Space and Electronic Warfare, Intelligence Collection, Maritime Protection, and Joint Strike.

FY 2024 funding request reflects a net decrease of \$.066 million from FY 2023 to FY 2024. Funding decrease is associated with APB-23 design, integration, and testing efforts associated with TI-24, which transitions Acoustic Rapid COTS Insertion (A-RCI) to Development, Cyber Security, and Operations (DevSecOps) in the Technical Insertion (TI)/Advanced Processing Build (APB) TI/APB process to better align with software development industry standards and meet fleet demands for rapid capability deliveries and increased focus on machine learning, automation, and behavioral analysis, Light Weight Wide Aperture Array (LwWAA) technology refresh development.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604503N / SSN-688 & Trident Modernization			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	95.693	93.501	94.308	-	94.308
Current President's Budget	92.168	93.501	93.435	-	93.435
Total Adjustments	-3.525	0.000	-0.873	-	-0.873
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.525	0.000			
• Program Adjustments	0.000	0.000	-1.550	-	-1.550
• Rate/Misc Adjustments	0.000	0.000	0.677	-	0.677
<b>Change Summary Explanation</b>					
FY 2024 funding request reflects an increase of \$.450 million from FY 2023 to FY 2024 for Proj: 0219. Funding increase is associated with APB-23 design, integration, and testing efforts associated with TI-24, which transitions Acoustic Rapid COTS Insertion (A-RCI) to Development, Cyber Security, and Operations (DevSecOps) in the Technical Insertion (TI)/Advanced Processing Build (APB) TI/APB process to better align with software development industry standards and meet fleet demands for rapid capability deliveries and increased focus on machine learning, automation, and behavioral analysis, Light Weight Wide Aperture Array (LwWAA) technology refresh development.					
FY 2024 funding request also reflects a decrease of \$.516 million from FY 2023 to FY 2024 for Proj: 0775. Funding decrease associated with the completion of TI-22 development.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization				Project (Number/Name) 0219 / Sub Sonar Improvement (ENG)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0219: Sub Sonar Improvement (ENG)	1,217.521	61.695	60.372	60.822	-	60.822	63.137	63.347	63.805	64.693	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The AN/BQQ-10(V) Acoustic Rapid COTS Insertion (A-RCI) submarine SONAR system will continue to add new capabilities via Technical Insertion (TI)/Advanced Processing Build (APB) process while working across Submarine Warfare Federated Tactical System (SWFTS) programs to transition to Development Security Operations (DevSecOps) software processes and migrate to a cloud based architecture. The Navy is pursuing a transformation across SWFTS (PE 0604503N Project 0219, PE 0604562N Project 0236, PE 0604777N Project 0253 and PE 0604503N Project 0775) to maximize cyber-resiliency and the speed of capability delivery.

FY 2024 funding request reflects a net increase of \$.873 million from FY 2023 to FY 2024. Funding increase is associated with APB-23 design, integration, and testing efforts associated with TI-24, which transitions Acoustic Rapid COTS Insertion (A-RCI) to Development, Cyber Security, and Operations (DevSecOps) in the TI/APB process to better align with software development industry standards and meet fleet demands for rapid capability deliveries as well as increased focus on machine learning, automation, and behavioral analysis. Increase also associated with design, integration, and testing efforts associated with the Light Weight Wide Aperture Array (LwWAA) technical refresh for Block I/II VIRGINIA Class Submarines.

This program delivers block updates to Sonar Systems installed on SSN 688, 688I, SSN 21, VIRGINIA, SSBN, and SSGN Class Submarines to maintain clear acoustical, tactical, and operational superiority over Submarines and Surface Combatants in all scenarios through detection, classification, localization, and contact following.

Acoustics Rapid COTS Insertion (A-RCI) provides multi-phased evolutionary development geared toward addressing acoustic superiority issues through the rapid introduction of interim development products applicable to all Classes of Submarines.

- A-RCI Phase I and II introduced Towed Array processing improvements
- Phase III introduced Spherical Array processing improvements
- Phase IV provided High Frequency (HF) Array processing improvements for SSN 688I, SSGN, SSBN, VIRGINIA, and SSN 21 Class Submarines.

As part of the Navy's plan to maintain acoustic superiority for in-service submarines, a joint cooperative effort was established to deliver bi-annual Advanced Processing Builds (APBs) to prevent obsolescence and deliver ongoing capability improvements.

- Capabilities in the APBs will be integrated as part of A-RCI certified systems.

Sensor Efforts provide increased operational capabilities for littoral operations, situational awareness, and reliability improvements.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization	Project (Number/Name) 0219 / Sub Sonar Improvement (ENG)				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> APB Productionization			15.046	16.868	16.143	0.000	16.143
<b>Articles:</b>			-	-	-	-	-
<b>Description:</b> APB Productionization provides for the transition of APB capability improvements to the Fleet for integration, testing and formal certification.							
<b>FY 2023 Plans:</b> -Continue Advanced Processing Build (APB) development and transition of APB software from development to A-RCI for integration, testing, and formal certification for SEAWOLF, 688/688I, OHIO, VIRGINIA, and COLUMBIA Class submarines. -Ensure continued transition of the SSBN legacy sonar system to the TI/APB model.							
<b>FY 2024 Base Plans:</b> -Continue Advanced Processing Build (APB) development and transition of APB software from development to A-RCI for integration, testing, and formal certification. -Ensure continued transition of the SSBN legacy sonar system to the TI/APB model. -Transition development of in-board signal processing associated with the Large Vertical Array (LVA) to VIRGINIA Class modernization.							
<b>FY 2024 OCO Plans:</b> N/A							
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease is associated with the transition of APB capability improvements to the Fleet for integration, testing and formal certification.							
<b>Title:</b> Integration and Testing			42.771	39.548	40.644	0.000	40.644
<b>Articles:</b>			-	-	-	-	-
<b>Description:</b> Integration and Testing provides support to integrate and test APBs into all Submarine Classes containing multiple sensor systems.							
<b>FY 2023 Plans:</b> -Continue support of Advanced Processing Builds installed on SSN688I, SSN 21, SSBN, SSGN, and VA Class Submarines.							



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023					
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization		Project (Number/Name) 0219 / Sub Sonar Improvement (ENG)				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>-Continue integration and testing associated with signal processing in support of Large Vertical Array (LVA) on SSBN and VA Class submarines.</p> <p>-Transition A-RCI APB content delivery to SWFTS Continuous Capability Insertion Model through implementation of Development, Cyber Security, and Operations (DevSecOps) and Agile development for flexible APB content releases to fleet platforms. These efforts increase focus on machine learning, automation, and behavioral analysis.</p> <p><b>FY 2024 Base Plans:</b></p> <p>-Continue support of Advanced Processing Builds installed on SSN688I, SSN 21, SSBN, SSGN, and VA Class Submarines.</p> <p>-Continue integration and testing associated with signal processing in support of Large Vertical Array (LVA) on SSBN and VA Class submarines.</p> <p>-Transition A-RCI APB content delivery to SWFTS Continuous Capability Insertion Model through implementation of Development, Cyber Security, and Operations (DevSecOps) and Agile development for flexible APB content releases to fleet platforms. These efforts increase focus on machine learning, automation, and behavioral analysis.</p> <p><b>FY 2024 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></p> <p>Increase is associated with support to integrate and test APBs into all Submarine Classes containing multiple sensor systems.</p>								
<p><b>Title:</b> A-RCI Acoustic Superiority Integration</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Maintain Acoustic Superiority for In-service Submarines to deliver bi-annual Advance Processing Builds (APBs) to prevent obsolescence and deliver emerging capability improvements for current and future threats.</p> <p><b>FY 2023 Plans:</b></p>				3.878 -	3.956 -	4.035 -	0.000 -	4.035 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy								<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604503N / SSN-688 & Trident Modernization				<b>Project (Number/Name)</b> 0219 / Sub Sonar Improvement (ENG)			

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>-Continue development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives.</p> <p><b>FY 2024 Base Plans:</b>            -Continue development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives.</p> <p><b>FY 2024 OCO Plans:</b>            -Continue development of emerging capability improvements for current and future threats by supporting development, integration, and testing of emerging capability improvements in passive long range detection/wide area search for current and future threats in support of Navy SSN/SSBN Acoustic Superiority initiatives.</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>            Increase is associated with emerging capability improvements for current and future threats.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	61.695	60.372	60.822	0.000	60.822

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2150: SSN Acoustic Equipment	379.492	446.653	463.577	-	463.577	463.967	452.440	461.424	475.872	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
Acoustic Systems: -A-RCI utilizes an open architecture and Commercial Off-the-Shelf (COTS) products in support of new and upgraded sonar systems. -Program Reviews with the Milestone Decision Authority (MDA) are conducted in conjunction with approval for contract production options.											

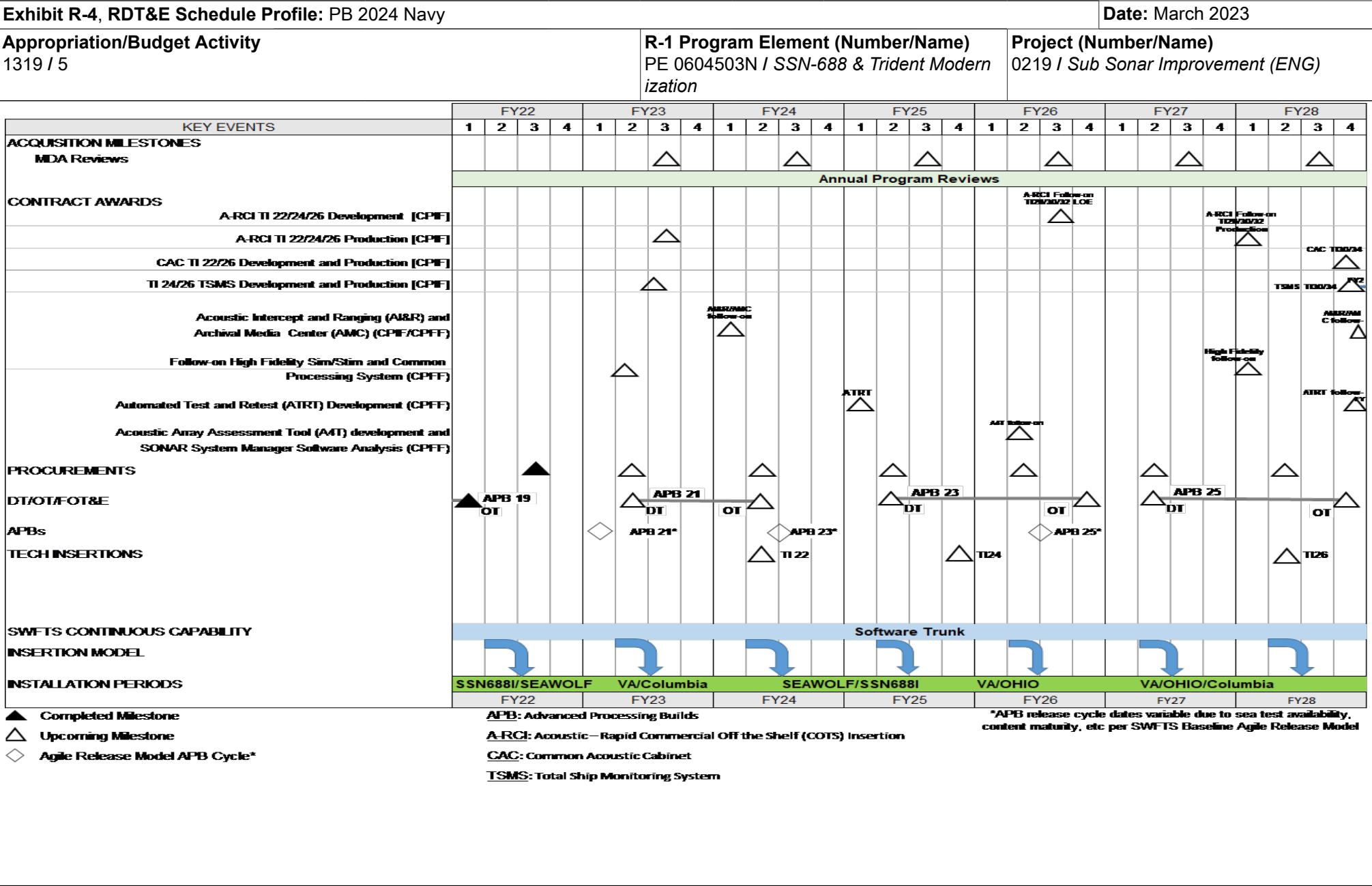
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization				Project (Number/Name) 0219 / Sub Sonar Improvement (ENG)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPIF	LMC : Manassas, VA	437.391	21.489	Dec 2021	19.369	Dec 2022	19.003	Dec 2023	-		19.003	Continuing	Continuing	Continuing
Ancillary Hardware Development	SS/CPFF	ARL University of Texas : Austin, TX	53.267	3.202	Mar 2022	3.266	Mar 2023	3.331	Mar 2024	-		3.331	Continuing	Continuing	Continuing
Systems Engineering	SS/CPFF	Johns Hopkins APL : Baltimore, MD	55.468	3.319	Dec 2021	3.385	Dec 2022	3.452	Dec 2023	-		3.452	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	LMC : VA - Keyport	53.190	3.413	Jan 2022	3.481	Jan 2023	3.550	Jan 2024	-		3.550	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPIF	Progeny Systems : Manassas, VA	96.269	6.618	Jan 2022	6.750	Jan 2023	6.885	Jan 2024	-		6.885	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC : Newport, RI	208.146	10.096	Dec 2021	10.297	Dec 2022	10.503	Dec 2023	-		10.503	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Carderock, MD	40.736	2.972	Dec 2021	3.031	Dec 2022	3.091	Dec 2023	-		3.091	Continuing	Continuing	Continuing
Subtotal			944.467	51.109		49.579		49.815		-		49.815	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development	C/CPIF	General Dynamics, AIS : Fairfax, VA	184.929	5.333	Dec 2021	5.439	Dec 2022	5.547	Dec 2023	-		5.547	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	Sedna Digital, : Manassas, VA	55.595	4.034	Dec 2021	4.114	Dec 2022	4.196	Dec 2023	-		4.196	Continuing	Continuing	Continuing
Subtotal			240.524	9.367		9.553		9.743		-		9.743	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : Norfolk, VA	12.627	0.499	Dec 2021	0.508	Dec 2022	0.518	Dec 2023	-		0.518	Continuing	Continuing	Continuing
Subtotal			12.627	0.499		0.508		0.518		-		0.518	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization						Project (Number/Name) 0219 / Sub Sonar Improvement (ENG)			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support Services	C/FFP	Alion, BAH, AECOM : Washington, DC	17.090	0.626	Dec 2021	0.638	Dec 2022	0.650	Dec 2023	-		0.650	Continuing	Continuing	Continuing
Travel	WR	NAVSEA : Washington, DC	2.813	0.094	Dec 2021	0.094	Dec 2022	0.096	Dec 2023	-		0.096	Continuing	Continuing	Continuing
Subtotal			19.903	0.720		0.732		0.746		-		0.746	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,217.521	61.695		60.372		60.822		-		60.822	Continuing	Continuing	N/A
Remarks															

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604503N / SSN-688 & Trident Modernization	<b>Project (Number/Name)</b> 0219 / Sub Sonar Improvement (ENG)	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0219</b>				
ACOUSTICS	3	2022	4	2028
---Acquisition Milestones - Acoustics	3	2022	3	2028
---Annual Program Reviews - Acoustics	1	2022	4	2028
---Contract Awards - Acoustics	3	2022	1	2028
---Procurements - Acoustics	2	2022	2	2028
---DT/OT/FOT&E Tests	2	2022	2	2028
---APB Deliveries	2	2023	2	2028
---Tech Insertions	1	2022	1	2028
---Installation Periods - Acoustics	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization				Project (Number/Name) 0775 / Submarine Supt Equip Prog			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0775: Submarine Supt Equip Prog	104.266	30.473	33.129	32.613	-	32.613	35.226	35.242	34.656	35.329	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

AN/BLQ-10 Electronic Warfare (EW) system will continue to add new capabilities via Technical Insertion (TI)/Advanced Processing Build (APB) while working across Submarine Warfare Federated Tactical System (SWFTS) programs to transition to Development Security Operations (DevSecOps) software processes and migrate to a cloud based architecture. The Navy is pursuing a transformation across SWFTS (PE 0604503N Project 0219, PE 0604562N Project 0236, PE 0604777N Project 0253 and PE 0604503N Project 0775) to maximize cyber-resiliency and the speed of capability delivery. Major new capabilities that will continue to be pursued in FY24 include a modern server-based RADAR Wide Band capability, upgraded and new tactical software solutions.

The Submarine Support Equipment Program (SSEP) is responsible for the development and improvement of submarine EW systems in support of effective operations in the following mission areas: Joint Littoral Warfare; Joint Intelligence Surveillance Reconnaissance (ISR), Indications and Warnings; Electronic Warfare; Information Operations including Cyber; and Special Operations Force (SOF) support. The rapid proliferation of complex radar, communications and navigation equipment available to potential adversaries creates an increasingly dense and sophisticated electromagnetic environment. Sustained and significant improvements to submarine EW systems are required to maintain tactical ship safety and operational effectiveness. As such, EW was raised to a submarine primary mission area in FY2012 by Commander Submarine Forces, and EW is listed as a Tier 1 modernization requirement by the Submarine Tactical Requirements Group (STRG).

TI-24 provides the VA Class a server-based Radar Wide Band capability. Additionally, TI-24 looks to improve the basic cloud based architecture developed during TI-20 and TI-22 as well as integrate new generations of EW Payloads. Funding is critical to developing enabling technologies that will provide maximized electronic spectrum digitization and processing, allowing Submarine EW system to continue to pace the threat.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Submarine Support Equipment Program	30.473	33.129	32.613	0.000	32.613
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> -- In the SWFTS TI/APB model, complete development and test a CADF capability for incorporation into the AN/BLQ-10 system to enhance the capabilities of the SSN 688 and 21 class ships. -- In the SWFTS TI/APB model, commence development of a server-based RADAR wide band capability for incorporation into the AN/BLQ-10 system to enhance the capabilities of the VA class ships.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization		Project (Number/Name) 0775 / Submarine Supt Equip Prog		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>-- Complete TI-22 development, design, integration, configuration, architecture documentation and software design.</div> <div>-- Commence TI-24 development, design, integration, configuration, architecture documentation and software design.</div> <div>-- Continue APB-21 development and integration into TI-20 and TI-22 baselines.</div> <div>-- Update AN/BLQ-10 software baseline changes for SWFTS and NPES, SPR Resolution and Software Enhancement via the APB process to fully utilize the new technology being fielded in TI-22 with broader spectrum digitization.</div> <div>-- Coordinate with ONR and NUWC Newport to develop FNCs to a high technology readiness level and transition to EW systems as appropriate.</div> <div>-- Develop advanced technology demonstrations for feasibility.</div> <div>-- Develop and test a prototype Submarine Simultaneous Transmit and Receive (SubSTAR) capability for backfit and forward fit onto low profile imaging masts.</div> <div>FY 2024 Base Plans:</div> <div>-- In the SWFTS TI/APB model, complete development of a server-based RADAR wide band capability for incorporation into the AN/BLQ-10 system to enhance the capabilities of the VA class ships.</div> <div>-- Continue TI-24 development, design, integration, configuration, architecture documentation, and software design.</div> <div>-- Complete APB-21 development and integration into TI-20 baseline.</div> <div>-- Continue APB-21 development and integration into TI-22 baseline.</div> <div>-- Commence APB-23 development and integration into TI-22 and TI-24 baselines.</div> <div>-- Update AN/BLQ-10 software baseline changes for SWFTS and NPES, SPR Resolution and Software Enhancement via the APB process to fully utilize the new technology being fielded in TI-22 and TI-24 with broader spectrum digitization.</div> <div>-- Coordinate with ONR and NUWC Newport to develop Future Naval Capabilities (FNCs) to a high technology readiness level and transition to EW systems as appropriate.</div> <div>-- Develop advanced technology demonstrations for feasibility.</div> <div>FY 2024 OCO Plans:</div>						



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604503N / SSN-688 & Trident Modernization		<b>Project (Number/Name)</b> 0775 / Submarine Supt Equip Prog	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding decreases in FY24 by \$0.516M due to the completion of TI-22 development.					
<b>Accomplishments/Planned Programs Subtotals</b>	30.473	33.129	32.613	0.000	32.613

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/0840: Sub Periscope, Imaging and Supt Equip Prog	209.792	261.011	262.951	-	262.951	289.922	274.693	285.958	290.554	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b> AN/BLQ-10 EW System - Procurements are executed/managed in accordance with Acquisition Plan (Rev 10) for AN/BLQ-10 EW System dtd 02/01/17, Single Acquisition Management Plan dtd 06/12/14, Individual Streamlined Acquisition Plan (Rev 0) for AN/BLQ-10 dtd 04/09/18, and the AN/BLQ-10 Acquisition Strategy dtd 01/28/13.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization				Project (Number/Name) 0775 / Submarine Supt Equip Prog					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware and Software Development	Various	Various : Various	6.544	0.707	Oct 2021	3.877	Oct 2022	3.286	Oct 2023	-		3.286	Continuing	Continuing	Continuing
Hardware and Software Development	WR	NUWC : Newport, RI	21.083	0.812	Oct 2021	1.288	Oct 2022	1.767	Oct 2023	-		1.767	Continuing	Continuing	Continuing
H/W and S/W Development EW TI/APB	C/CPIF	Lockheed Martin : Syracuse, NY	55.916	25.486	Oct 2021	27.162	Oct 2022	26.685	Oct 2023	-		26.685	Continuing	Continuing	Continuing
PATRIOT Phase C Development	C/CPIF	Lockheed Martin : Syracuse, NY	2.600	1.500	Oct 2021	0.000		0.000		-		0.000	0.000	4.100	-
Subtotal			86.143	28.505		32.327		31.738		-		31.738	Continuing	Continuing	N/A
Remarks															
FY24 funding increase in Hardware and Software Development to finalize TI24 development.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	OTF : Norfolk, VA	2.051	0.344	Oct 2021	0.136	Oct 2022	0.173	Oct 2023	-		0.173	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NUWC : Newport, RI	16.072	1.624	Oct 2021	0.666	Oct 2022	0.702	Oct 2023	-		0.702	Continuing	Continuing	Continuing
Subtotal			18.123	1.968		0.802		0.875		-		0.875	Continuing	Continuing	N/A
Remarks															
FY24 funding increase in Test Support: Systems Engineering & Test Support to more closely align with FY22 actual costs while also accounting for inflation.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			104.266	30.473		33.129		32.613		-		32.613	Continuing	Continuing	N/A
Remarks															

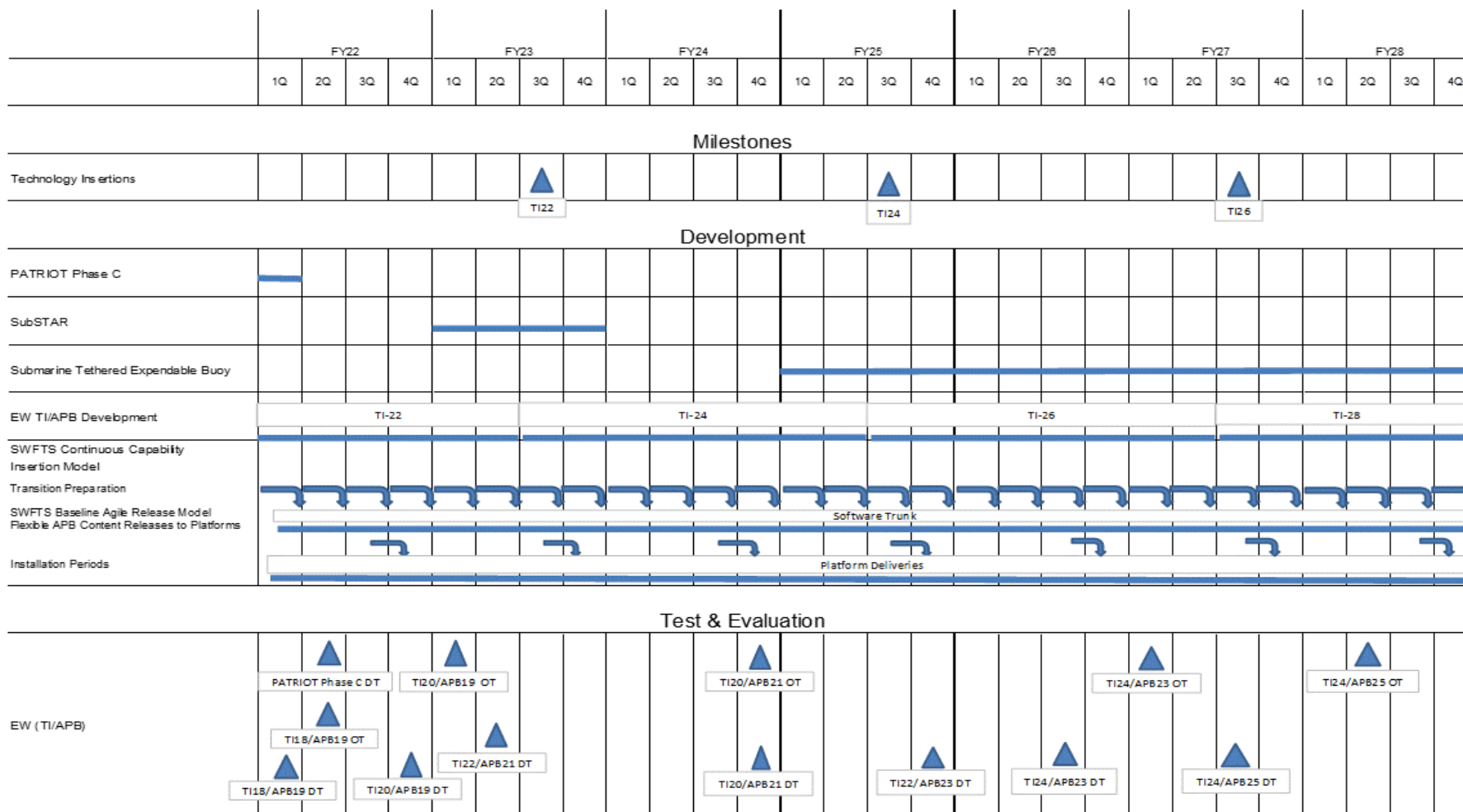
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PE 0604503N: SSN-688 & Trident Modernization  
Navy

**Volume 3 - 815**

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604503N / SSN-688 & Trident Modernization
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<b>Project (Number/Name)</b>	0775 / Submarine Supt Equip Prog
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604503N / SSN-688 & Trident Modernization	<b>Project (Number/Name)</b> 0775 / Submarine Supt Equip Prog	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0775</b>				
Development: Technology Insertions: TI-22	3	2023	3	2023
Development: Technology Insertions: TI-24	3	2025	3	2025
Development: Technology Insertions: TI-26	3	2027	3	2027
Development: PATRIOT Phase C: PATRIOT Phase C	1	2022	1	2022
Development: SubSTAR: SubSTAR	1	2023	4	2023
Development: Submarine Tethered Expendable Buoy: Submarine Tethered Expendable Buoy	1	2025	4	2028
Development: EW TI/APB Development: EW TI/APB Development: TI-22	3	2022	2	2023
Development: EW TI/APB Development: EW TI/APB Development: TI-24	3	2023	2	2025
Development: EW TI/APB Development: EW TI/APB Development: TI-26	3	2025	2	2027
Development: EW TI/APB Development: EW TI/APB Development: TI-28	3	2027	4	2028
Test and Evaluation: EW (TI/APB): TI-18/APB-19: Developmental Testing	1	2022	1	2022
Test and Evaluation: EW (TI/APB): TI-18/APB-19: Operational Testing	2	2022	2	2022
Test and Evaluation: EW (TI/APB): PATRIOT Phase C DT	2	2022	2	2022
Test and Evaluation: EW (TI/APB): TI-20/APB-19: Developmental Testing	4	2022	4	2022
Test and Evaluation: EW (TI/APB): TI-20/APB-19: Operational Testing	1	2023	1	2023
Test and Evaluation: EW (TI/APB): TI-22/APB-21: Developmental Testing	2	2023	2	2023
Test and Evaluation: EW (TI/APB): TI-20/APB-21: Developmental Testing	4	2024	4	2024
Test and Evaluation: EW (TI/APB): TI-20/APB-21: Operational Testing	4	2024	4	2024
Test and Evaluation: EW (TI/APB): TI-22/APB-23: Developmental Testing	4	2025	4	2025
Test and Evaluation: EW (TI/APB): TI-24/APB-23: Developmental Testing	3	2026	3	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604503N / SSN-688 & Trident Modernization		Project (Number/Name) 0775 / Submarine Supt Equip Prog	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Test and Evaluation: EW (TI/APB): TI-24/APB-23: Operational Testing		1	2027	1	2027
Test and Evaluation: EW (TI/APB): TI-24/APB-25: Developmental Testing		3	2027	3	2027
Test and Evaluation: EW (TI/APB): TI-24/APB-25: Operational Testing		2	2028	2	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604504N / Air Control							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	382.815	32.614	39.138	42.656	-	42.656	34.635	30.077	30.722	31.964	Continuing	Continuing
0718: MATCALs	22.523	3.108	3.020	1.063	-	1.063	0.878	0.938	0.998	1.059	Continuing	Continuing
0993: Carrier ATC	225.285	11.825	10.560	8.655	-	8.655	8.773	8.945	9.125	9.594	Continuing	Continuing
1657: ATC Improvement	5.463	0.344	0.474	0.452	-	0.452	0.457	0.462	0.463	0.479	Continuing	Continuing
3372: ATC Systems	129.544	17.337	25.084	32.486	-	32.486	24.527	19.732	20.136	20.832	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

This program element provides for the development, integration, and testing of Automated Air Traffic Control (ATC) hardware and software required to provide improved flight safety and more reliable all-weather ATC and landing system capabilities at Naval Air Stations (NASs) and Marine Corps Air Stations (MCASs) and Fleet Area Control and Surveillance Facilities (FACSFAC) worldwide. Programs are required to upgrade or replace aging ATC and landing system equipment on aircraft, aircraft carriers, amphibious ships, NASs, MCASs and Navy/Marine Corps tactical/expeditionary airfields and remote landing sites. These upgrades include addressing broadened CyberSecurity requirements to remain compliant with software CyberSecurity directives and Information Assurance mandates. Virtual Warfare Center (VWC) supports the Marine Air Ground Task Force (MAGTF) Integrated Air and Missile Defense (IAMD) development.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	27.499	39.138	45.062	-	45.062
Current President's Budget	32.614	39.138	42.656	-	42.656
Total Adjustments	5.115	0.000	-2.406	-	-2.406
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.422	0.000			
• SBIR/STTR Transfer	-0.307	0.000			
• Program Adjustments	0.000	0.000	-2.819	-	-2.819
• Rate/Misc Adjustments	0.000	0.000	0.413	-	0.413

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604504N / Air Control	
<p><b>Change Summary Explanation</b></p> <p>Schedule: 3372 AN/SPN-35 Block II Critical Design Review moved from FY 2023 to FY 2024 due to technical issues with Electromagnetic Interference (EMI) requirements.</p> <p>Cost: 0718 Realignment of Virtual Warfare Center support for consolidation of funding to PE 0206313M, Marine Corps Communications Systems.</p> <p>Cost: Added additional FY 2022 funds (\$2.0M) to project 0993 for AN/SPN-50 primary hardware contract.</p> <p>Cost: Added additional FY 2022 funds (\$3.5M) to project 3372 for AN/SPN-35 Block II Upgrade ancillary hardware contract.</p>		



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / <i>Air Control</i>				Project (Number/Name) 0718 / <i>MATCALS</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0718: <i>MATCALS</i>	22.523	3.108	3.020	1.063	-	1.063	0.878	0.938	0.998	1.059	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Marine Air Traffic Control and Landing Systems (MATCALS) program provides for continued development, integration, and testing of hardware and software to meet requirements for all-weather operations and improved flight safety of Air Traffic Control (ATC) and Landing Systems at Marine Corps expeditionary airfields. An Acquisition Decision Memorandum from Jan 2005 approved the use of the U.S. Army AN/TPN-31 Air Traffic Navigation, Integration, and Coordination System (ATNAVICS) to fulfill the Air Surveillance and Precision Approach Radar and Control System (ASPARCS) requirement for Jul 2006. The ATNAVICS will replace the legacy ATC Precision Approach Radar (PAR), Airport Surveillance Radar (ASR), and Command and Control Subsystem with a High Mobility Multipurpose Wheeled Vehicle based PAR, ASR and Command and Control Subsystem. The Marine Resource Oversight Committee Decision Memorandum 11-2005 of Dec 2004 outlines the evolutionary improvements required by Headquarters Marine Corps. This program works with the Marine ATC Working Group identifying the requirements to implement the preplanned program improvement (P3I) and evolutionary product improvements as required for Ground/Air Task Oriented Radar System (G/ATOR), ATNAVICS, Expeditionary ATC Towers, and Navigational Aids that support Marine Air Traffic Control Detachments.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> ASPARCS Improvements	0.602	0.614	1.063	0.000	1.063
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Investigate and resolve obsolescence issues. Perform studies and analyses to implement P3I and other evolutionary improvements. Develop criteria for existing ASPARCS software to achieve Defense Information Infrastructure-Common Operating Environment Level 5 compliance, Information Assurance, Radar Range Extension and Mapping functionality, and enhanced simulation and training into the existing ASPARCS software. Perform Mode 5/S integration, operational functionality study and analyses with AN/TPN-31(V)7 ATNAVICS System.					
<b>FY 2023 Plans:</b> Continue to develop ECP's to mitigate obsolescence issues within the Precision Approach Radar and develop capability to meet the multiple touchdown point capability requirement. Perform operational functionality study and analysis regarding Expeditionary ATC tower capability improvements. Continue to prioritize integration of ATNAVICS and CAC2S, including the production of a MATC CAC2S prototype, developmental testing, field unit evaluation, and NAVAIR certification.					
<b>FY 2024 Base Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604504N / Air Control		Project (Number/Name) 0718 / MATCALs		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue to develop ECPs to mitigate obsolescence issues within the Precision Approach Radar and develop capability to meet the multiple touchdown point capability requirement. Perform operational functionality study and analysis regarding Expeditionary ATC tower capability improvements. Continue to prioritize integration of ATNAVICS and CAC2S, certification.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to ATNAVICS system integration and development of critical ECP's.						
<b>Title:</b> Virtual Warfare Center Support  <div>Articles:</div> <b>Description:</b> Virtual Warfare Center (VWC) Support - This project supports fully interactive operator in the loop simulations in support of the Virtual Warfare Center (VWC) in order to quantify USMC Integrated Air and Missile Defense (IAMD) family of systems performance and how it impacts effectiveness in the IAMD mission area.  <b>FY 2023 Plans:</b> Continue to support integration and development of Design of Experiments related to Marine Air Ground Task Force (MAGTF) IAMD capabilities. Provide event technical support for additional analysis events. Increase modeling and simulation to enable simulation capabilities to enable live and virtual military forces and military systems to interact with one another to create virtual war scenarios. Conduct and document analysis results for USMC stakeholders.  <b>FY 2024 Base Plans:</b> N/A  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease due to consolidation of effort to PE 0206313M, Marine Corps Communications Systems.		1.534 -	2.000 -	0.000 -	0.000 -	0.000 -
<b>Title:</b> Common Aviation Command and Control System (CAC2S)  <div>Articles:</div> <b>Description:</b> Integrate ATNAVICS with the Common Aviation Command and Control System (CAC2S) to provide a coordinated and integrated modernization effort for the equipment of the Marine Air Command and		0.972 1	0.406 -	0.000 -	0.000 -	0.000 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy								<b>Date:</b> March 2023				
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604504N / <i>Air Control</i>				<b>Project (Number/Name)</b> 0718 / MATCALs				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>								<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Control System and provide enhanced Air Command and Control (AC2) capability for the Tactical Air Command Center, Tactical Air Operations Center, and Direct Air Support Center to support aviation employment in Joint, combined, and coalition operations.</p> <p><b><i>FY 2023 Plans:</i></b> Complete integration of ATNAVICS and CAC2S and field unit evaluation and certification.</p> <p><b><i>FY 2024 Base Plans:</i></b> N/A</p> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Decrease from FY23 to FY24 due to completion of integration of ATNAVICS and CAC2S and field unit evaluation and certification.</p>												
<b>Accomplishments/Planned Programs Subtotals</b>								3.108	3.020	1.063	0.000	1.063
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
• OPN/2820: <i>Ashore ATC Equipment/MATCALs</i>	9.650	9.284	13.930	-	13.930	9.250	9.455	9.648	9.127	Continuing	Continuing	
<b>Remarks</b>												
MATCALs is only a portion of OPN Line Item 2820.												
<b>D. Acquisition Strategy</b>												
<p>An Acquisition Decision Memorandum was signed in Jan 2005 approving the procurement of the Army AN/TPN-31 ATNAVICS to fulfill the Air Surveillance and Precision Approach Radar and Control System requirement for July 2006. The MROC Decision Memorandum 11-2005 of December 2004 outlined the evolutionary improvements required by Headquarters Marine Corps. This program has joined with the Army to implement Pre-Planned Product Improvements and evolutionary product improvements. The Marine Air Traffic Control (ATC) Working Group identified requirements to address obsolescence issues with ATC Expeditionary Towers. These requirements were validated by APX-8 and a Decision Analysis Study was conducted by NAVAIR. Funding will address development of Expeditionary ATC Tower capability improvements via the Engineering Change Proposal process.</p>												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604504N / Air Control				Project (Number/Name) 0718 / MATCALs					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HDW Develop - ASPARCS	WR	NAWCAD : Patuxent River, MD	3.266	0.000	Dec 2021	0.000	Dec 2022	0.301	Dec 2023	-		0.301	0.000	3.567	-
Primary HDW Develop - ASPARCS	C/BA	RAYTHEON : Largo, FL	0.000	0.134	Dec 2021	0.136	Dec 2022	0.000		-		0.000	0.000	0.270	-
Primary HDW Develop - ASPARCS	WR	NIWC : San Diego, CA	0.510	0.200	Dec 2021	0.204	Dec 2022	0.297	Dec 2023	-		0.297	0.000	1.211	-
Primary HDW Develop - ASPARCS	C/CPFF	TRANDES : San Diego, CA	1.783	0.000		0.000		0.000		-		0.000	0.000	1.783	1.783
Subtotal			5.559	0.334		0.340		0.598		-		0.598	0.000	6.831	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - G/ATOR	WR	NSWC : Dahlgren, VA	2.575	0.000		0.000		0.000		-		0.000	0.000	2.575	-
Software Development - ASPARCS	WR	NAWCAD : Patuxent River, MD	4.572	0.200	Dec 2021	0.204	Dec 2022	0.288	Dec 2023	-		0.288	0.000	5.264	-
Engineering Support - VWC	TBD	NSMA : TBD	4.430	0.880	Dec 2021	0.898	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Software Development - VWC	C/BA	TBD : TBD	3.635	0.584	Dec 2021	1.005	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Software Development - CAC2S	TBD	TBD : TBD	0.000	0.947	Dec 2021	0.406	Nov 2022	0.000		-		0.000	0.000	1.353	-
Subtotal			15.212	2.611		2.513		0.288		-		0.288	Continuing	Continuing	N/A
Remarks															
Effective FY24 VWC funding moved and consolidated under PE 0206313M, Marine Corps Communications Systems.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604504N / Air Control				Project (Number/Name) 0718 / MATCAL S					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	1.102	0.163	Dec 2021	0.167	Dec 2022	0.177	Nov 2023	-		0.177	Continuing	Continuing	Continuing
Program Management Support	WR	G/ATOR : PEO Land Systems	0.650	0.000		0.000		0.000		-		0.000	0.000	0.650	-
Subtotal			1.752	0.163		0.167		0.177		-		0.177	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			22.523	3.108		3.020		1.063		-		1.063	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604504N / Air Control

Project (Number/Name)  
0718 / MATCALs

MATCALs	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
System Development																												
Software Development	Visual Warfare Center																											
	CAC2S																											
Hardware Development	ASPARCS Improvement Developments																											
Test Events																												
Production Milestones																												

2024DON - 0604504N - 0718

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / Air Control	Project (Number/Name) 0718 / MATCALs

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>MATCALs</b>				
System Development: Software Development: Visual Warfare Center	1	2022	4	2023
System Development: Software Development: CAC2S	1	2022	3	2023
System Development: Hardware Development: ASPARCS improvements	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / <i>Air Control</i>				Project (Number/Name) 0993 / <i>Carrier ATC</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0993: <i>Carrier ATC</i>	225.285	11.825	10.560	8.655	-	8.655	8.773	8.945	9.125	9.594	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Shipboard Air Traffic Control systems, interfacing with versions of the AN/TPX-42A(V) Direct Altitude and Identity Readout (DAIR), allow shipboard Air Traffic Controllers to identify, marshal, and direct aircraft within a 50 Nautical Mile (NM) radius of the ship. In recent years, the top 25 percent of the AN/SPN-43C frequency band has been reallocated to the Fixed Wireless Access Community prohibiting Air Traffic Control (ATC) Air Search Radar (ASR) operation within 50NM of the coast. Because the Navy requires an air traffic control surveillance radar, this project unit will include engineering efforts to identify requirements and develop the AN/SPN-50(V)1 as an AN/SPN-43C replacement system. In addition, bridging Engineering Change Proposals (ECP) will be required to sustain the AN/SPN-43C capability until the AN/SPN-50(V)1 is completely fielded. Finally, the AN/TPX-42A(V) DAIR continues to undergo several phased upgrades that have resulted in a number of field changes/technology refresh/insertion efforts. System improvements include replacing militarized front-end equipment in the track processor with open architecture Commercial Off the Shelf technology, converting the operational program software to more commonly used and flexible "C" language, providing the "hooks" for potential interface with Mode 5 Identification Friend or Foe, and integrating a flat panel monitor into the controller work station. The ATC System Shipboard, AN/SYY-1(V) interfaces to emerging sensors as well as those currently in service to improve reliability to the fleet. The embedded training capability of the AN/TPX-42A(V) will carry on to the AN/SYY-1(V). This effort includes addressing broadened CyberSecurity requirements to remain compliant with software CyberSecurity directives and Information Assurance mandates.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> AN/SPN-50	6.412	5.563	3.859	0.000	3.859
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> This project funds the development of the AN/SPN-43C replacement program (AN/SPN-50), which was previously funded under AN/SPN-43C and is being broken out for greater clarity and justification. This system enables Air Traffic Controllers to assure the safe and expeditious movement of air traffic. This capability is an enabler in maintaining launch/recovery cycle times/sortie rates.					
<b>FY 2023 Plans:</b> Continued efforts to complete redesign and requalification efforts to achieve System Requirements Document (SRD) compliance. Tasking will include correcting deficiencies found during testing and support ongoing government test efforts.					
<b>FY 2024 Base Plans:</b>					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604504N / Air Control		Project (Number/Name) 0993 / Carrier ATC		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Closeout of EMD contract and developing shipboard enclave environment, reduce cyber vulnerabilities of aviation land and launch systems and improve the ability to continue manned and unmanned aircraft flight operations in a cyber-contested battlespace  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to winding down of development efforts.						
<b>Title:</b> AN/SPN-43C  <div>Articles:</div> <b>Description:</b> Funds development of sustainment Engineering Change Proposals (ECP) for the AN/SPN-43C. The sustainment effort will ensure the capabilities provided by the AN/SPN-43C remain available to CVN, LHA and LHD type ships until the replacement system is fielded.  <b>FY 2023 Plans:</b> Continued sustainment ECPs for AN/SPN-43C.  <b>FY 2024 Base Plans:</b> Continued Sustainment ECPs for AN/SPN-43C  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to winding down of development efforts.		2.394 -	1.918 -	1.655 -	0.000 -	1.655 -
<b>Title:</b> AN/TPX-42  <div>Articles:</div> <b>Description:</b> This project funds the ongoing modernization of the AN/TPX-42 system through engineering changes and technology refresh, to include CyberSecurity requirements and compliance. Specific engineering changes are: Development of an Air Traffic Control (ATC) Multi-Function Console (MFC) which will reduce operational costs, improve reliability, and provide common hardware for all ATC workstations. Additionally, MFC will provide interfaces for emerging/planned sensors.  <b>FY 2023 Plans:</b>		3.019 -	3.079 -	3.141 -	0.000 -	3.141 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023							
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604504N / <i>Air Control</i>		<b>Project (Number/Name)</b> 0993 / <i>Carrier ATC</i>							
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>				<b>FY 2022</b>	<b>FY 2023</b>						
<p>Continue sustainment ECPs for AN/TPX-42. Continue developing shipboard enclave environment, reduce cyber vulnerabilities of aviation land and launch systems and improve the ability to continue manned and unmanned aircraft flight operations in a cyber-contested battlespace.</p> <p><b>FY 2024 Base Plans:</b> Continued Sustainment ECPs for Multi-function Console</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of .062 from FY23 to FY24 due to inflation</p>				<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>						
				<b>FY 2024 Total</b>							
<b>Accomplishments/Planned Programs Subtotals</b>				11.825	10.560						
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2830: <i>Afloat ATC</i>	34.327	56.536	67.249	-	67.249	65.908	67.104	73.955	33.731	Continuing	Continuing
<i>Equipment: SATC / AN/SPN-50(V)1</i>											
<b>Remarks</b>											
Carrier ATC related funding is only a portion of OPN Line Item 2830.											
<b>D. Acquisition Strategy</b>											
AN/TPX-42 Voice/Video recorder replacement, Joint Precision Approach and Landing System Interface, Shipboard trainer, and Air Traffic Control (ATC) Console are all in progress ECPs, with improvements being incorporated into the production of AN/SYY-1(V) upgrade kits.											
AN/SPN-50 replacement program is an ACAT IVT program. All other projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce these technology advancements that either satisfy user requirements, such as all weather operation, or address supportability and cost of ownership problems.											

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604504N / <i>Air Control</i>	<b>Project (Number/Name)</b> 0993 / <i>Carrier ATC</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HDW Develop-TPX-42	WR	NAWCAD : PAX River, MD	7.972	0.833	Nov 2021	0.849	Nov 2022	0.866	Nov 2023	-		0.866	Continuing	Continuing	Continuing
Primary HDW Develop - SPN-43	WR	NAWCAD : PAX River, MD	6.158	0.537	Nov 2021	0.501	Nov 2022	0.536	Nov 2023	-		0.536	Continuing	Continuing	Continuing
Primary HDW Develop - SPN-50(V)1 Pre-CDR Configuration EDM	C/CPIF	SAAB : Syracuse NY	11.317	0.000		0.000		0.000		-		0.000	0.000	11.317	11.317
Primary HDW Develop - SPN-50(V)1 Post-CDR Configuration EDM	C/CPIF	SAAB : Syracuse NY	5.681	0.207	Oct 2021	0.000		0.000		-		0.000	0.077	5.965	5.614
Primary HDW EMD - SPN-50(V)1	C/CPIF	SAAB : Syracuse NY	54.464	4.198	Oct 2021	0.095	Nov 2022	1.598	Nov 2023	-		1.598	1.211	61.566	44.507
Prior year Prod Dev no longer funded in the FYDP	Various	Various : TBD	17.998	0.000		0.000		0.000		-		0.000	0.000	17.998	-
Follow on ECP	C/CPIF	SAAB : Syracuse NY	0.000	0.000		0.000		0.575	Nov 2023	-		0.575	0.000	0.575	-
<b>Subtotal</b>			103.590	5.775		1.445		3.575		-		3.575	Continuing	Continuing	N/A

**Remarks**

AN/SPN-50(V)1 Hardware engineering, manufacturing, and development (EMD) costs increase from FY23 to FY24 due to deferred work for EMD from FY22/23 based on latest cost and schedule analysis (C&SA) estimate at completion (EAC).  
Follow on ECP line added to address obsolescence issues for hardware and software.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development-TPX-42	WR	NAWCAD : PAX River, MD	28.976	0.516	Nov 2021	0.526	Nov 2022	0.537	Nov 2023	-		0.537	Continuing	Continuing	Continuing
Integrated Logistics Support- TPX-42	WR	NAWCAD : PAX River, MD	2.727	0.200	Nov 2021	0.202	Nov 2022	0.206	Nov 2023	-		0.206	Continuing	Continuing	Continuing
Integrated Logistics Support-SPN-43	WR	NAWCAD : PAX River, MD	1.496	0.074	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Logistics Support-SPN-50(V)1	WR	NAWCAD : PAX River, MD	2.256	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / Air Control			Project (Number/Name) 0993 / Carrier ATC			

<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Studies & Analysis-SPN-50(V)1	WR	NAWCAD : PAX River, MD	4.591	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development - SPN-50(V)1	WR	NAWCAD : PAX River, MD	11.527	0.071	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Studies & Analysis-SPN-43	WR	NAWCAD : PAX River, MD	2.112	0.023	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Studies & Analysis-TPX-42	WR	NAWCAD : PAX River, MD	1.873	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering-SPN-50(V)1	WR	NAWCAD : PAX River, MD	17.804	0.000		2.507	Nov 2022	1.357	Nov 2023	-		1.357	0.208	21.876	-
Prior Year Support no longer funded in the FYDP	Various	Various : Various	13.393	0.000		0.000		0.000		-		0.000	0.000	13.393	-
Studies & Analysis SPN-50(V)1	WR	Variou : VA	0.402	0.000		0.000		0.000		-		0.000	0.000	0.402	-
<b>Subtotal</b>			87.157	0.884		3.235		2.100		-		2.100	Continuing	Continuing	N/A

**Remarks**

AN/SPN-50(V)1 systems engineering decrease from FY 2023 to FY 2024 is due to the winding down of the development efforts.

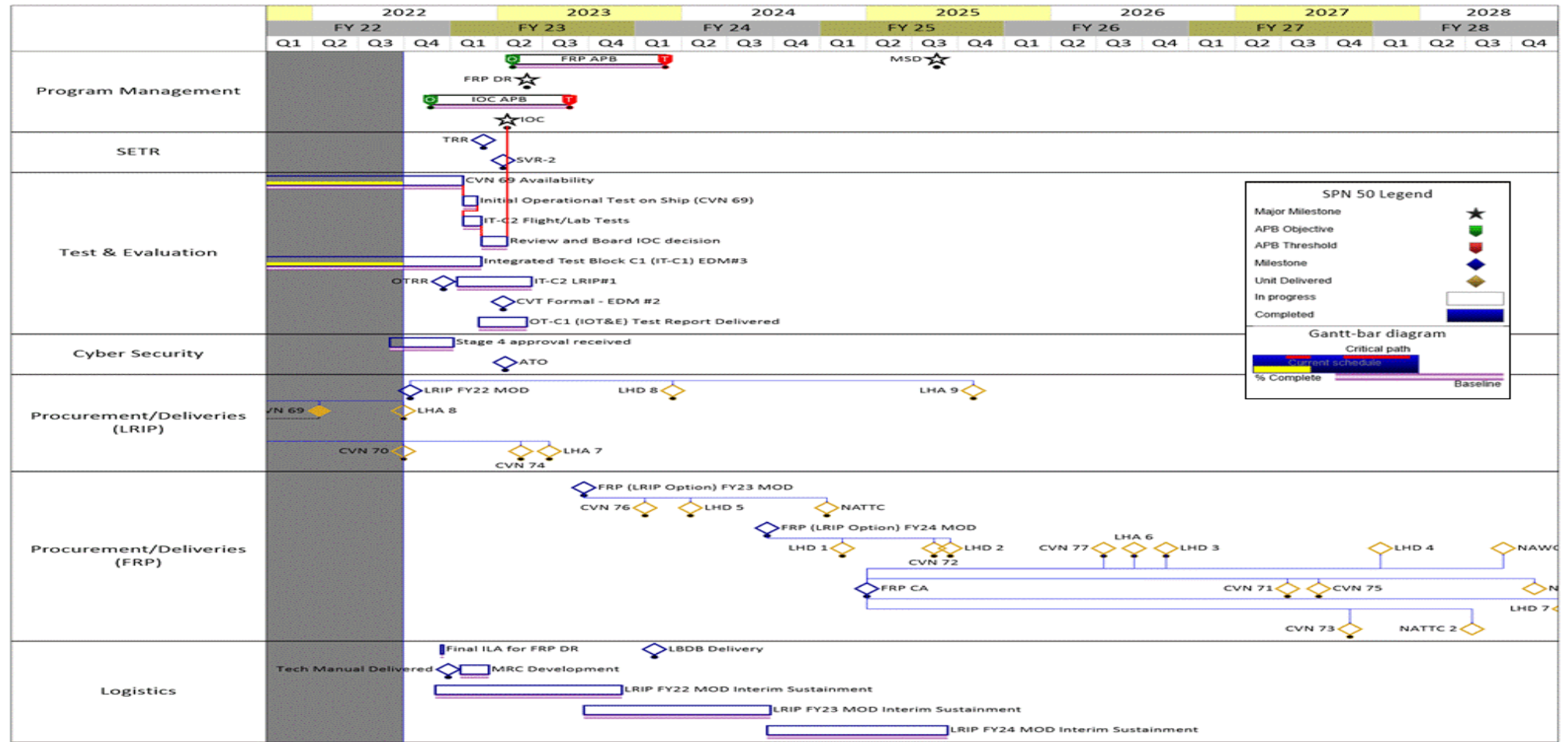
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : PAX River, MD	14.386	1.866	Nov 2021	1.425	Nov 2022	1.126	Nov 2023	-		1.126	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	OPTEVOR : Norfolk, VA	3.245	1.974	Nov 2021	3.106	Nov 2022	0.301	Nov 2023	-		0.301	2.336	10.962	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAWCAD : PAX River	8.761	0.000		0.000		0.000		-		0.000	0.000	8.761	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604504N / Air Control				Project (Number/Name) 0993 / Carrier ATC					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			26.392	3.840		4.531		1.427		-		1.427	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	DDG : California, MD	3.700	0.587	Jan 2022	0.597	Jan 2023	0.675	Dec 2023	-		0.675	Continuing	Continuing	Continuing
Program Management Support	WR	NAWCAD : PAX River, MD	3.512	0.689	Nov 2021	0.701	Nov 2022	0.821	Dec 2023	-		0.821	Continuing	Continuing	Continuing
Travel	WR	NAVAIRHQ : PAX River, MD	0.934	0.050	Nov 2021	0.051	Nov 2022	0.057	Dec 2023	-		0.057	Continuing	Continuing	Continuing
Subtotal			8.146	1.326		1.349		1.553		-		1.553	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			225.285	11.825		10.560		8.655		-		8.655	Continuing	Continuing	N/A
Remarks															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / Air Control		Project (Number/Name) 0993 / Carrier ATC

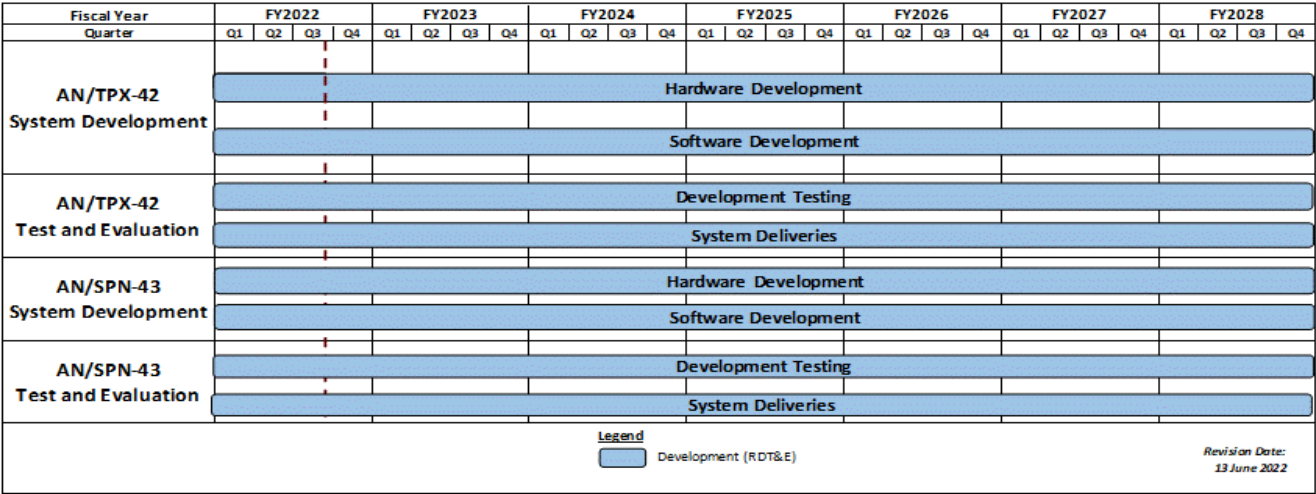
AN/SPN-50 Program Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604504N / Air Control		Project (Number/Name) 0993 / Carrier ATC	

AN/TPX-42 / AN/SPN-43 Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604504N / <i>Air Control</i>	<b>Project (Number/Name)</b> 0993 / <i>Carrier ATC</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Carrier ATC</b>				
Acquisition Milestones: Milestones: AN/SPN-50(V)1 MSD	3	2025	3	2025
Acquisition Milestones: Milestones: AN/SPN-50(V)1 IOC	2	2023	2	2023
System Development: Hardware Development: AN/SPN-43C	1	2022	4	2027
System Development: Hardware Development: AN/TPX-42A(V)	1	2022	4	2027
System Development: Software Development: AN/SPN-43C	1	2022	4	2026
System Development: Software Development: AN/TPX-42A(V)	1	2022	4	2026
System Development: Reviews: Physical Configuration Audit (AN/SPN-50(V)1)	3	2022	3	2022
Test and Evaluation: Developmental Testing/Operational Testing (AN/SPN-50(V)1)	1	2022	1	2022
Test and Evaluation: Developmental Testing (AN/TPX-42A(V))	1	2022	4	2028
Test and Evaluation: Developmental Testing (AN/SPN-43C)	1	2022	4	2028
Deliveries: System Deliveries (TPX-42A(V))	1	2022	4	2028
Deliveries: System Deliveries (AN/SPN-43C)	1	2022	4	2028



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / Air Control				Project (Number/Name) 1657 / ATC Improvement			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1657: ATC Improvement	5.463	0.344	0.474	0.452	-	0.452	0.457	0.462	0.463	0.479	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program provides for engineering development, integration, adaptation, and testing of new and/or modernized Air Traffic Control (ATC) systems, air navigational aids, landing systems, and ATC communication systems for Naval and Marine Corps Air Stations (NAS/MCAS), Fleet ATC Systems, and remote tower improvements.. These systems are critical to Naval Aviation and provide for safe, efficient air operations. Additionally, the Federal Aviation Administration (FAA) is affecting major modernization of the National Airspace System (NAS). The Navy must maintain compatibility with FAA-developed ATC systems in order to ensure seamless interoperability within the NAS. NAS modernization initiatives in Project 1657 include the Visual Information Display System (VIDS) and follow-on Pre-Planned Product Improvements, with additional RDT&E efforts required for modified commercial-off-the-shelf ATC systems and equipment for modernization and recapitalization of these systems at our NAS, MCAS & Fleet Area Control & Surveillance Facilities (FACSFACs) worldwide.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> NAS MOD VIDS	0.167	0.185	0.157	0.000	0.157
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Continue engineering development of pre-planned product improvements for the VIDS and initiate efforts to incorporate VIDS into the FACSFACs. Research display alternatives for Navy ATC systems, and evaluate alternatives for future communication and radar systems.					
<b>FY 2023 Plans:</b> Continue engineering development of Pre-Planned Product Improvement for VIDS to incorporate multiple weather source inputs. Continue STARS and VIDS engineering development for technology insertion. To include VIDS cyber integration efforts and continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system.					
<b>FY 2024 Base Plans:</b> Continue engineering development of Pre-Planned Product Improvement for VIDS to incorporate multiple weather source inputs. Continue STARS and VIDS engineering development for technology insertion. To include VIDS cyber integration efforts and continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system.					
<b>FY 2024 OCO Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy								Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604504N / Air Control			Project (Number/Name) 1657 / ATC Improvement				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY23 to FY24 due to change in project funding.											
Title: Fleet ATC Systems						0.177	0.289	0.295	0.000	0.295	
Articles:						-	-	-	-	-	
Description: Research efforts to determine the best technical approach to integrate various data link and communication system upgrades into Navy/Marine Corps ATC Systems including, but not limited to, the Digital Airport Surveillance Radar (DASR) and the DoD Advanced Automation Systems (DAAS) into the Fleet Area Control and Surveillance Facilities. Evaluate alternative for future processor/display, sensor and communication systems.											
FY 2023 Plans: Continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system. Continue evaluation of future processor/display, sensor and communication systems.											
FY 2024 Base Plans: Continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system. Continue evaluation of future processor/display, sensor and communication systems.											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY23 to FY24 due to inflation.											
Accomplishments/Planned Programs Subtotals						0.344	0.474	0.452	0.000	0.452	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/2820: Ashore ATC	39.485	41.239	41.419	-	41.419	42.129	43.035	44.060	46.094	Continuing	Continuing
Equipment: NASMOD/Fleet ATC											
Remarks											
ATC Improvement related funding is only a portion of OPN Line Item 2820.											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / <i>Air Control</i>	Project (Number/Name) 1657 / <i>ATC Improvement</i>

### D. Acquisition Strategy

All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy emergent requirements or address supportability and cost of ownership problems.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604504N / Air Control				Project (Number/Name) 1657 / ATC Improvement					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HDW Develop - VIDS	WR	SPAWAR Systems Command : Charleston, SC	2.783	0.167	Dec 2021	0.185	Dec 2022	0.157	Dec 2023	-		0.157	Continuing	Continuing	Continuing
Primary HDW Develop - Fleet ATC	WR	SPAWAR Systems Center : Charleston, SC	1.744	0.177	Dec 2021	0.289	Dec 2022	0.295	Dec 2023	-		0.295	Continuing	Continuing	Continuing
Subtotal			4.527	0.344		0.474		0.452		-		0.452	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	SPAWAR Systems Center : Charleston, SC	0.936	0.000		0.000		0.000		-		0.000	0.000	0.936	-
Subtotal			0.936	0.000		0.000		0.000		-		0.000	0.000	0.936	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			5.463	0.344		0.474		0.452		-		0.452	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604504N / Air Control

Project (Number/Name)  
1657 / ATC Improvement

ATC Improvement	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
System Development																												
Hardware Development	NASMOD VIDS																											
	Fleet ATC Systems																											

2024DON - 0604504N - 1657

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / Air Control	Project (Number/Name) 1657 / ATC Improvement

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ATC Improvement				
System Development: Hardware Development: NASMOD VIDS	1	2022	4	2028
System Development: Hardware Development: Fleet ATC Systems	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / <i>Air Control</i>				Project (Number/Name) 3372 / <i>ATC Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3372: <i>ATC Systems</i>	129.544	17.337	25.084	32.486	-	32.486	24.527	19.732	20.136	20.832	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Landing System Upgrade Program (LSUP) is essential to retain the United States Navy's capability to perform safe and expeditious aircraft landings aboard CVN and LHA/D class vessels during adverse weather and night conditions, and in contested environments. The Navy's Precision Approach and Landing Capability requirements necessitate Life Cycle Extension upgrades to all three legacy precision landing systems; AN/SPN-35, AN/SPN-41 and AN/SPN-46. The LSUP program modernizes obsolete technology developed and fielded over 30 years ago. Without these upgrades, the Navy estimates complete loss of Automatic Carrier Landing System capability within 5 years. Cyber Security requirements drive increased efforts to remain compliant with software CyberSecurity directives and Information Assurance mandates across the portfolio; maintaining compliance is critical to retaining authorization to operate for Fleet users.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> AN/SPN-46 Blk IV Upgrade  <b>Articles:</b>  <b>Description:</b> The AN/SPN-46 Blk IV program targets aging and obsolete components within the carrier landing systems and replaces them with modernized and sustainable components. Blk IV consists of antenna pedestal upgrades, replacement of obsolete circuit cards, addresses transmitter obsolescence issues, and Cybersecurity  <b>FY 2023 Plans:</b> N/A  <b>FY 2024 Base Plans:</b> N/A  <b>FY 2024 OCO Plans:</b> N/A	0.114 -	0.000 -	0.000 -	0.000 -	0.000 -
<b>Title:</b> AN/SPN-35 Blk I Upgrade  <b>Articles:</b>  <b>Description:</b> This program provides for the development, upgrade, redesign, integration, and testing of the AN/SPN-35C Block I upgrade required to extend the service life and ensure Fleet availability of the system until 2040. AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and is provides Mode III aircraft recovery capability, ensuring the safe approach and landing of all embarked aircraft during adverse weather & night conditions. The AN/SPN-35C Block I upgrade provides engineering efforts to upgrade,	0.689 -	0.000 -	0.000 -	0.000 -	0.000 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604504N / Air Control		Project (Number/Name) 3372 / ATC Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
redesign, replace, and support common failure items and obsolete components Subsystem upgrades include but are not limited to the Receiver, Radar Processing Controller (RPC), Main Input/output Processor (MIOP), and Control-Indicators.						
FY 2023 Plans: N/A						
FY 2024 Base Plans: N/A						
FY 2024 OCO Plans: N/A						
Title: AN/SPN-46 Blk V Upgrade		4.364	5.666	3.618	0.000	3.618
Articles:		-	-	-	-	-
Description: The AN/SPN-46 Block V upgrade targets aging and obsolete hardware and software components within the carrier landing system and replaces them with modernized components to improve system performance in contested environments and improve system supportability. Blk V consists of a major operational software upgrade along with a refresh of numerous Commercial Off The Shelf (COTS) equipment subassemblies. These changes improve reliability issues caused by outdated bus systems and IP based substructures, and provide an overall system hardening to mitigate external interference issues. Refresh subassemblies include replacing the radar's obsolete processor circuit card assemblies (CCAs) with new generation CCAs; upgrading the radar's Real Time Operating System (RTOS) with a current and supportable RTOS; and optimizing and reconfiguring the radar's software into a logical, modular format. This architecture redesign and optimization will increase modularity and operational efficiency and resolve cyber security related issues inherent with the legacy system. Additionally, hardware changes improve system reliability by modernizing those hardware components with less complex and more reliable solutions. Specifically this program upgrading the radar's top two hardware reliability degraders, the Radar Alignment Mast (RAM) pole and the TS-3098 test set. Rapid increase of CCA failures forced prioritization of imminent obsolescence issues; Block V efforts divided into two phases to allow faster fielding of critical items. Phase 1 upgraded the radar's obsolete processor CCAs with new generation CCAs, to include updating the radar's RTOS. Phase 2 upgrades the Maintenance Local Area Network (LAN) hardware and implements Risk Management Framework Cyber-Security controls. These upgrades are required to keep the system supportable/operational through 2040 to support legacy fleet aircraft precision landing requirements.						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604504N / Air Control		Project (Number/Name) 3372 / ATC Systems	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>FY 2023 Plans:</b> Begin development and integration of Maintenance LAN hardware. Begin environmental, Electromagnetic Interference (EMI) and shock qualification of the phase 2 configuration.					
<b>FY 2024 Base Plans:</b> Continue environmental, Electromagnetic Interference (EMI) and shock qualification of the phase 2 configuration. Complete cyber security Risk Management Framework (RMF) controls implementation and begin RMF controls requirements verification testing.					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease of \$2.048M from FY 2023 to FY 2024 is due to engineering efforts ramping down for development of modernization upgrades.					
<b>Title:</b> AN/SPN-35 Blk II Upgrade					
<b>Articles:</b>					
<b>Description:</b> This program provides for the development, upgrade, redesign, integration, and testing of the AN/SPN-35C Block II upgrade required to extend the service life and ensure Fleet availability of the system until 2040. AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and provides Mode III aircraft recovery capability, ensuring the safe approach and landing of all LH-class embarked aircraft during adverse weather & night conditions. The AN/SPN-35C Block II upgrade provides engineering efforts to develop an Active Electronically Steered Array (AESA) to replace the existing receiver-transmitter, pedestal, and antenna group, and to incorporate digital stabilization. Additionally, this effort includes the research and development of the AESA antenna's application to other existing precision approach and landing systems with the intent of improving commonality and reducing the logistics footprint of the inventory of current shipboard radar-guided precision approach and landing systems.					
<b>FY 2023 Plans:</b> Continue development of AESA to include First Article Delivery, prototype AESA fabrication, and AESA integration. Complete System Integration Lab (SIL) setup.					
<b>FY 2024 Base Plans:</b>					
	12.170 -	19.418 -	28.868 -	0.000 -	28.868 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604504N / <i>Air Control</i>	<b>Project (Number/Name)</b> 3372 / <i>ATC Systems</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Complete Critical Design Review (CDR). Continue development of AESA, and AESA integration; deliver System Integration Lab (SIL) trailer and enclosure; perform design adjustments revealed during two-panel subarray test/demo; begin planning for Deport Source of Repair (DSOR)/Logistics/Supportability.  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase of \$9.450M from FY 2023 to FY 2024 is due to the continued engineering efforts including CDR, design adjustments, and planning for DSOR.					
<b>Accomplishments/Planned Programs Subtotals</b>	17.337	25.084	32.486	0.000	32.486

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/2830: <i>Afloat</i> <i>ATC Equipment/ACLS</i>	27.399	23.055	23.476	-	23.476	28.235	40.464	33.770	78.229	Continuing	Continuing

**Remarks**

ATC Systems related funding is only a portion of OPN Line Item 2830.

**D. Acquisition Strategy**

Landing System Upgrade Program consists of lifecycle extension upgrades to the AN/SPN-35C Precision Approach Radar, AN/SPN-41B Instrument Control Landing Systems and AN/SPN-46 Automatic Carrier Landing Systems, all of which support Air Traffic Control (ATC) operations on board CVN, LHA, and/or LHD-class ships. This effort includes numerous commercial off-the-shelf (COTS) component refresh updates which are urgently needed to sustain the operational viability of these Naval ATC systems supporting fleet air operations until at least 2040, until the next generation ATC system is fully implemented. This COTS refresh will include analysis and upgrade of key system components critical to overall system operation but which have become increasingly difficult to maintain over the past several years. Recent adjustments in the direction and scope of Naval ATC systems necessitated a re-evaluation of the long-term viability and sustainability of the current Fleet ATC equipment.

The Resources and Requirements Review Board approved the DON Precision Approach and Landing Capability (PALC) Roadmap per Decision Memorandum (DM) Ser: N8B/13U141053 dtd 03 July 2013. This PALC Roadmap re-scoped Joint Precision Approach and Landing System (JPALS) into a single increment and deferred JPALS capability from legacy fleet aircraft. Per Enclosure 1 of the above DM, the Landing Systems Upgrade Program will be comprised of upgrades to the AN/SPN-46, AN/SPN-35C, and AN/SPN-41B. Each SPN upgrade will go through separate Systems Engineering Technical Review (SETR) processes. The current SPN systems need to be sustained through 2040.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604504N / Air Control				Project (Number/Name) 3372 / ATC Systems					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - AN/SPN-46 Blk IV Upgrade	WR	NAWCAD : Patuxent River, MD	31.440	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Ancillary Hardware Development - AN/SPN-46 Blk IV Upgrade	C/CPFF	Sierra Nevada Corp (SNC) : Reno, NV	23.562	0.000		0.000		0.000		-		0.000	0.000	23.562	23.562
Primary Hardware Development - AN/SPN-35 Blk I Upgrade	WR	NAWCAD : Patuxent River, MD	12.290	0.328	Nov 2021	0.000		0.000		-		0.000	0.000	12.618	-
Ancillary Hardware Development - AN/SPN-35 Blk I Upgrade	WR	NAWCAD : Patuxent River, MD	19.293	0.000		0.000		0.000		-		0.000	0.000	19.293	-
Primary Hardware Development - AN/SPN - 46 Blk V Upgrade	C/CPFF	Sierra Nevada Corp (SNC) : Reno, NV	7.710	2.002	Nov 2021	3.147	Nov 2022	1.369	Nov 2023	-		1.369	1.056	15.284	15.214
Ancillary Hardware Development - AN/SPN-46 Blk V Upgrade	WR	NAWCAD : Patuxent River, MD	7.737	1.166	Nov 2021	1.214	Nov 2022	0.900	Nov 2023	-		0.900	Continuing	Continuing	Continuing
Primary Hardware Development - AN/SPN-35 Blk II Upgrade	WR	NAWCAD : Patuxent River, MD	1.000	2.500	Nov 2021	4.653	Nov 2022	5.219	Nov 2023	-		5.219	Continuing	Continuing	Continuing
Ancillary Hardware Development - AN/SPN-35 Blk II Upgrade	C/CPFF	GTRI : Atlanta, GA	2.997	8.755	Nov 2021	13.581	Nov 2022	21.306	Nov 2023	-		21.306	Continuing	Continuing	Continuing
Subtotal			106.029	14.751		22.595		28.794		-		28.794	Continuing	Continuing	N/A
Remarks															
FY 2024 increase in AN/SPN-35 Blk II due to significant engineering events such as CDR, continued development, radar and prototype integration, software development, AESA integration, and prototype proof of concept efforts for the AESA integrated system.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604504N / Air Control				Project (Number/Name) 3372 / ATC Systems					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support (ILS)	WR	NAWCAD : Patuxent River, MD	5.516	0.474	Nov 2021	0.495	Nov 2022	0.509	Nov 2023	-		0.509	Continuing	Continuing	Continuing
Systems Engineering Support	WR	NAWCAD : Patuxent River, MD	7.127	0.535	Nov 2021	0.559	Nov 2022	0.583	Nov 2023	-		0.583	Continuing	Continuing	Continuing
Subtotal			12.643	1.009		1.054		1.092		-		1.092	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	4.853	0.830	Nov 2021	0.656	Nov 2022	1.680	Nov 2023	-		1.680	Continuing	Continuing	Continuing
Subtotal			4.853	0.830		0.656		1.680		-		1.680	Continuing	Continuing	N/A
Remarks															
FY 2024 increase in AN/SPN-46 Blk V is due to completion of functional testing, EMI and shock qualification.															
FY 2024 increase in AN/SPN-35 Blk II is due to radar software integrating testing.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management (PM) Support	WR	NAWCAD : Patuxent River, MD	4.293	0.487	Nov 2021	0.509	Nov 2022	0.645	Nov 2023	-		0.645	Continuing	Continuing	Continuing
PM Support - MSS	C/CPAF	Amelex : Patuxent River, MD	1.201	0.000		0.000		0.000		-		0.000	0.000	1.201	1.201
PM Support - MSS	C/CPAF	DDG : Patuxent River, MD	0.525	0.260	Jan 2022	0.270	Jan 2023	0.275	Nov 2023	-		0.275	Continuing	Continuing	Continuing
Subtotal			6.019	0.747		0.779		0.920		-		0.920	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / Air Control					Project (Number/Name) 3372 / ATC Systems				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	129.544	17.337		25.084		32.486		-		32.486	Continuing	Continuing	N/A	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

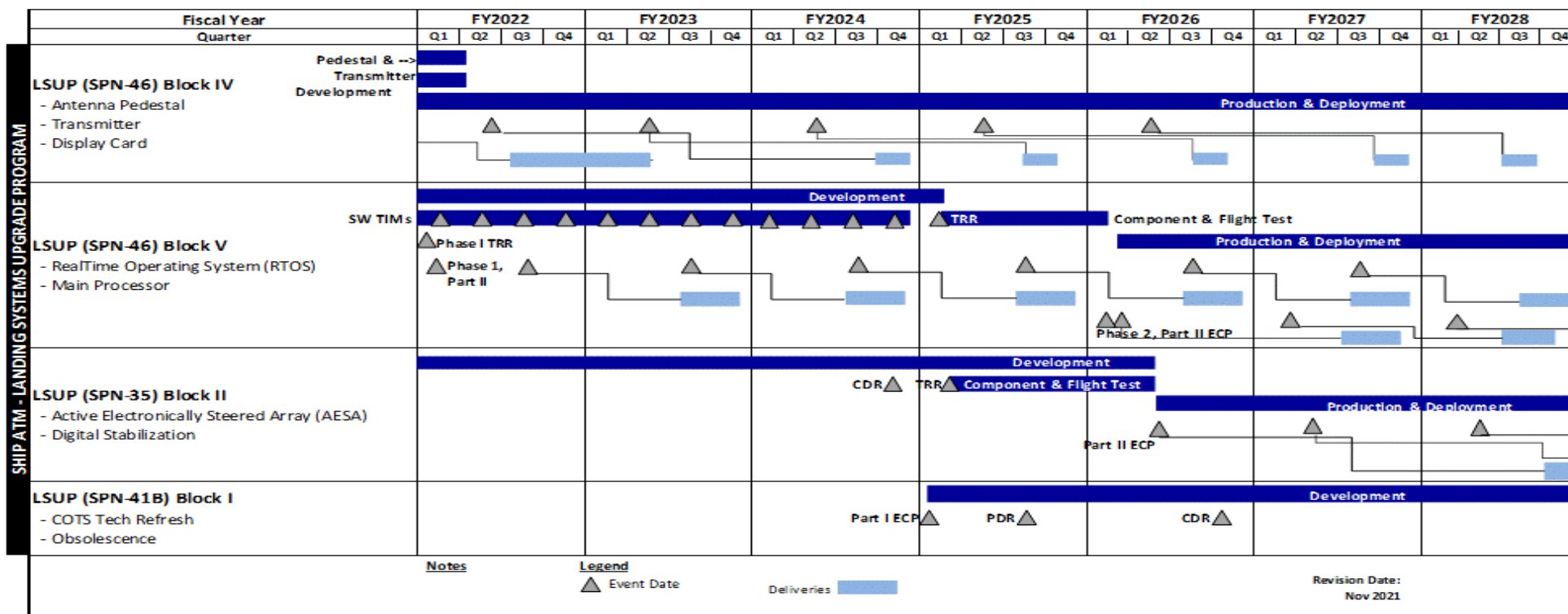
Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604504N / Air Control

Project (Number/Name)  
3372 / ATC Systems



# LSUP (Landing System Upgrade Program) Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / Air Control	Project (Number/Name) 3372 / ATC Systems	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3372				
Reviews: AN/SPN-46 Blk V Technical Interchange Meeting (TIM) Quarterly	1	2022	4	2024
Reviews: AN/SPN-35 Blk II Critical Design Review (CDR)	4	2024	4	2024
Reviews: AN/SPN-41 Blk I Preliminary Desgin Review (PDR)	3	2025	3	2025
Reviews: AN/SPN-41 Blk I Critical Design Review (CDR)	4	2026	4	2026
Reviews: AN/APN-41 Blk I Hardware and Software Development	1	2025	1	2028
Test and Evaluation: AN/SPN-46 Blk V Test Readiness Review (TRR)	1	2025	1	2025
Test and Evaluation: AN/SPN-35 Blk II Test Readiness Review (TRR)	1	2025	1	2025

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0604512N / Shipboard Aviation Systems							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	1,100.616	8.889	11.759	10.442	-	10.442	14.577	12.295	16.556	16.841	Continuing	Continuing
2232: CV/CVN Launch and Recover	1,100.616	8.889	11.759	10.442	-	10.442	14.577	12.295	16.556	16.841	Continuing	Continuing

## **A. Mission Description and Budget Item Justification**

CV Launch & Recover System - This Navy unique project addresses the System Development and Demonstration (SDD) of systems required to recover and launch Navy/Marine Corps Aircraft (Fixed/Rotary Wing and Vertical/Short Take Off and Landing) operating aboard aircraft carriers, amphibious assault ships, and air capable ships. This program element includes the following:

- (1) Aircraft Launch & Recovery Equipment Modernization
- (2) Aircraft Launch and Recovery Equipment Service Life Management program

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	8.924	11.759	12.544	-	12.544
Current President's Budget	8.889	11.759	10.442	-	10.442
Total Adjustments	-0.035	0.000	-2.102	-	-2.102
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.035	0.000			
• Program Adjustments	0.000	0.000	-2.180	-	-2.180
• Rate/Misc Adjustments	0.000	0.000	0.078	-	0.078

## **Change Summary Explanation**

Funding: The decrease in FY2022 is due to SBIR reduction.

FY 2023 was updated to reflect more accurate cost for ARC prototype and due to testing slipping in FY 2024.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604512N / Shipboard Aviation Systems	
<p>Schedule: Updated schedule to include Milestones and Systems Engineering Technical Review (SETR) events for more clarity.</p> <p>ARC Block Upgrade Development end moved from Q1 FY2023 to Q4 FY2026.</p> <p>ARC Prototype Production start date moved from Q4 FY2022 to Q2 FY2023 and end date moved from Q4 FY2023 to Q2 FY2026.</p> <p>ARC Block Upgrade Testing start date moved from Q1 FY2024 to Q3 FY2025 and end date moved from Q2 FY2026 to Q4 FY2028.</p> <p>Technical: N/A</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604512N / Shipboard Aviation Systems				Project (Number/Name) 2232 / CV/CVN Launch and Recover			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2232: CV/CVN Launch and Recover	1,100.616	8.889	11.759	10.442	-	10.442	14.577	12.295	16.556	16.841	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Note												
AAG funding included under 0604512N in FY 2018 and prior. All AAG costs FY 2019 and later are captured under PE: 0604530N, PU: 2367. PY article includes Advanced Arresting Gear (AAG) Jet Car Track Site and two Improved Manually Operated Visual Landing Aid System (IMOVLAS) production representative models. Service Life Management Program (SLMP) test articles refer to actual units (two units per ship set).												
A. Mission Description and Budget Item Justification												
This Navy unique project addresses the System Development and Demonstration (SDD) of systems required to recover and launch Navy/Marine Corps Aircraft (Fixed/ Rotary Wing and Vertical/Short Take-Off and Landing) operating aboard aircraft carriers (CVN), amphibious assault ships and air capable ships. This program includes the following systems under Project 2232, including the funding of production representative models for:												
(1) Aircraft Launch & Recovery Equipment (ALRE) Modernization: ALRE Modernization encompasses efforts required to ensure continued functional performance, operational relevance, and cybersecurity accreditation for all product lines across the ALRE program. This includes efforts required to resolve emerging obsolescence issues (both hardware and software), implement fleet driven operational capability upgrades, and comply with cybersecurity requirements and computer task order requirements for security threat mitigation. Major categories include Visual Landing Aids (VLA), Information Systems, Launcher, Recovery and Aviation Data Management and Control System (ADMACS). There are 48 fielded subsystems that are included in the major categories. The ALRE Gold Disk program provides diagnostic test routines for fleet technician troubleshooting capability on faulty circuit cards to identify the problem and perform the repair.												
(2) Aircraft Launch & Recovery Equipment (ALRE) Service Life Management Program (SLMP): The ALRE SLMP for Launcher and Recovery is required to sustain carrier aviation operations of higher energy aircraft launch and recoveries that are increasing loads on the ALRE systems, and that are affecting availability, maintainability and cost. This program will consist of service life assessment and extension initiatives and will establish the design foundation (structural, reliability, and maintainability analyses), permit appropriate assessment, track and focus design changes where most needed. Two SLMP prototypes were procured in FY 2018. The Nimitz class aircraft carriers operate Mark 7 arresting gear systems to capture and arrest Navy aircraft. The Mark 7 systems use a classic linear-piston cylinder setup to convert the kinetic energy of the aircraft into storage energy. Specifically a control system is used to apply correct logic to piston-cylinder closing parameters depending upon the aircraft type that is being arrested. This is called Advanced Recovery Control (ARC). The current ARC system was designed with early 2000's technology and components that have reached their end-of-life and are not compliant with current cybersecurity protocols. To support continued operations through 2060, a series of developmental engineering changes are required for modernized control components, technology and cybersecurity. This is the ARC Block Upgrade.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Aircraft Launch & Recovery Equipment Modernization								0.000	0.099	0.350	0.000	0.350

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604512N / Shipboard Aviation Systems	Project (Number/Name) 2232 / CV/CVN Launch and Recover				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:			-	-	-	-	-
<p><b>Description:</b> ALRE Modernization encompasses efforts required to ensure continued functional performance, operational relevance, and cybersecurity accreditation for all product lines across the ALRE program. This includes efforts required to resolve emerging obsolescence issues (both hardware and software), implement fleet driven operational capability upgrades, and comply with cybersecurity requirements and computer task order requirements for security threat mitigation. Major categories include Visual Landing Aids (VLA), Information Systems, Launcher, Recovery and Aviation Data Management and Control System (ADMACS). There are 48 fielded subsystems that are included in the major categories.</p> <p><b>FY 2023 Plans:</b> Continues the developmental enhancements to resolve known and emerging capability shortfalls within the major categories of ALRE to include: VLA, Information Systems, Launcher, Recovery and ADMACS. These major subsystems include 48 fielded Aircraft Launch and Recovery Systems. These efforts support various Air Capable Ships, Amphibious Assault Ships, and Aircraft Carrier Fleet.</p> <p><b>FY 2024 Base Plans:</b> Continues the developmental enhancements to resolve known and emerging capability shortfalls within the major categories of ALRE to include: VLA, Information Systems, Launcher, Recovery and ADMACS. These major subsystems include 48 fielded Aircraft Launch and Recovery Systems. These efforts support various Air Capable Ships, Amphibious Assault Ships, and Aircraft Carrier Fleet. Begin development of Gold Disk circuit card test routine software.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The increase from FY 2023 to FY 2024 is due to the Program Increase to support the ALRE Gold Disk effort.</p>							
Title: Aircraft Launch & Recovery Equipment (ALRE) Service Life Management Program (SLMP)			8.889	11.660	10.092	0.000	10.092
Articles:			1	1	2	-	2
<p><b>FY 2023 Plans:</b> Continue ARC Block Upgrade prototype manufacturing. Continue analyses and service life assessments on various ALRE systems.</p> <p><b>FY 2024 Base Plans:</b></p>							

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604512N / <i>Shipboard Aviation Systems</i>		<b>Project (Number/Name)</b> 2232 / <i>CV/CVN Launch and Recover</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Complete ARC Block Upgrade prototypes for regression and environmental qualification efforts. Conduct the following environmental qualification efforts on the ARC Block Upgrade prototypes: Cyber security, Regression, humidity, shock, temperature, vibration and electromagnetic interference EMI testing.  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> The decrease from FY 2023 to FY 2024 is due to the ramp down of ARC Block Upgrade Development Non Recurring Engineering (NRE) efforts and an overall unit cost decrease for ordering multiple quantities for ARC prototypes.					
<b>Accomplishments/Planned Programs Subtotals</b>	8.889	11.759	10.442	0.000	10.442

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/4213: <i>Aircraft Launch &amp; Recovery Equipment-Aircraft Launch &amp; Recovery Equipment</i>	176.387	272.044	162.273	-	162.273	117.925	97.652	97.973	98.420	Continuing	Continuing

**Remarks**

OPN 4213 includes a portion of line item funding for ALRE.

**D. Acquisition Strategy**

Aircraft Launch & Recovery Equipment Modernization: This program ensure continued functional performance, operational relevance, and cybersecurity accreditation for all product lines across the ALRE program. Programs include Visual Landing Aids (VLA), Information Systems, Launcher, Recovery and Aviation Data Management and Control System (ADMACS). There are 48 fielded subsystems that are included in the major categories.

Aircraft Launch & Recovery Equipment Service Life Management Program (SLMP): This program will consist of Service Life Assessment and Extension initiatives and will establish the design foundation (structural, reliability and maintainability analyses), permit appropriate assessment, track and focus design changes where most needed.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604512N / Shipboard Aviation Systems				Project (Number/Name) 2232 / CV/CVN Launch and Recover					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary SW Dev - ALRE Mod	WR	NAWCAD : Lakehurst, NJ	0.000	0.000		0.099	Nov 2022	0.350	Nov 2023	-		0.350	Continuing	Continuing	Continuing
Primary HW Dev-SLMP	C/CPFF	NGC : Sykesville, MD	0.000	8.792	Jan 2022	8.263	Feb 2023	5.258	Nov 2023	-		5.258	3.490	25.803	-
Prior Year Cost No Longer Funded in FYDP	Various	Various : Various	929.811	0.000		0.000		0.000		-		0.000	0.000	929.811	-
Subtotal			929.811	8.792		8.362		5.608		-		5.608	Continuing	Continuing	N/A
Remarks															
Primary HW Dev-SLMP: Includes ARC Block Upgrade Development NRE and hardware procurement for ARC prototypes. FY 2022 was updated to reflect actual execution in support of ARC Block Upgrade Development and hardware procurement for ARC prototypes. FY 2023 was updated to reflect more accurate cost for ARC prototype. The decrease from FY 2023 to FY 2024 is due to the ramp down of NRE efforts and an overall unit cost decrease for ordering multiple quantities. FY 2023 award date was updated.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD : Lakehurst, NJ	0.000	0.097	Nov 2021	0.099	Nov 2022	0.133	Nov 2023	-		0.133	Continuing	Continuing	Continuing
Prior Year Cost No Longer Funded in FYDP	Various	Various : Various	54.675	0.000		0.000		0.000		-		0.000	0.000	54.675	-
Subtotal			54.675	0.097		0.099		0.133		-		0.133	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NAWCAD : Lakehurst, NJ	23.901	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	88.996	0.000		0.000		0.000		-		0.000	0.000	88.996	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604512N / <i>Shipboard Aviation Systems</i>	<b>Project (Number/Name)</b> 2232 / <i>CV/CVN Launch and Recover</i>
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	NGC : Sykesville, MD	0.000	0.000		3.298	Feb 2023	4.701	Nov 2023	-		4.701	3.005	11.004	-
<b>Subtotal</b>			112.897	0.000		3.298		4.701		-		4.701	Continuing	Continuing	N/A

**Remarks**

FY 2023 was updated to reflect the Non Recurring Engineering Testing at NGC to support the ARC Block Upgrade and update the award date.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cost No Longer Funded in FYDP	Various	Various : Various	3.233	0.000		0.000		0.000		-		0.000	0.000	3.233	-
<b>Subtotal</b>			3.233	0.000		0.000		0.000		-		0.000	0.000	3.233	N/A

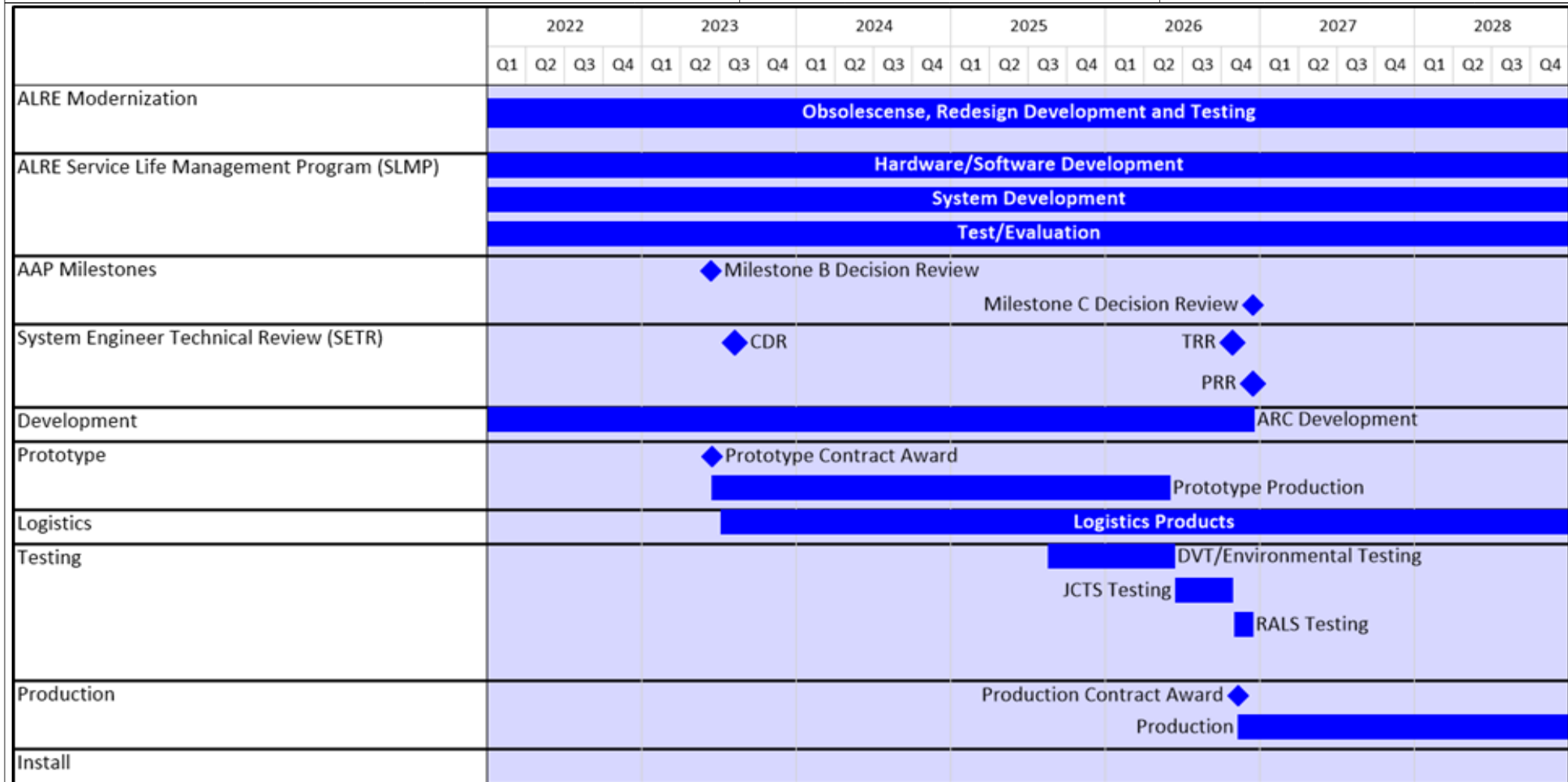
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			1,100.616	8.889		11.759		10.442		-		10.442	Continuing	Continuing	N/A

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604512N / Shipboard Aviation Systems	<b>Project (Number/Name)</b> 2232 / CV/CVN Launch and Recover
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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604512N / Shipboard Aviation Systems

Project (Number/Name)

2232 / CV/CVN Launch and Recover

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>ALRE MODERNIZATION</b>				
Obsolescence, Redesign Development and Testing	1	2022	4	2028
<b>ALRE SERVICE LIFE MANAGEMENT PROGRAM (SLMP)</b>				
SLMP Systems Development: HW/SW Development	1	2022	4	2028
SLMP Systems Development: System Development	1	2022	4	2028
SLMP Systems Development: Test & Evaluation	1	2022	4	2028
ARC Systems Development: ARC CDR	3	2023	3	2023
ARC Systems Development: ARC TRR	3	2026	3	2026
ARC Systems Development: ARC PRR	4	2026	4	2026
ARC Systems Development: ARC Milestone B Decision Review	2	2023	2	2023
ARC Systems Development: ARC Milestone C Decision Review	4	2026	4	2026
ARC Systems Development: ARC Block Upgrade Development	1	2022	4	2026
ARC Block Upgrade Prototype: Prototype Contract Award	2	2023	2	2023
ARC Block Upgrade Prototype: Prototype Production	2	2023	2	2026
ARC Test & Evaluation: Technical Evaluation: ARC Block Upgrade Testing	3	2025	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	106.103	11.389	16.160	11.359	-	11.359	11.176	11.358	11.480	11.667	Continuing	Continuing
3094: USW Decision Support	86.775	9.994	9.913	10.484	-	10.484	10.389	10.574	10.709	10.910	Continuing	Continuing
3439: Project NAUTICA: Integrated Theater ASW C4I	19.328	1.395	1.247	0.875	-	0.875	0.787	0.784	0.771	0.757	Continuing	Continuing
9999: Congressional Adds	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000

## A. Mission Description and Budget Item Justification

This Program Element (PE) addresses the development and integration of new and improved technologies into the Anti-Submarine Warfare (ASW) and Theater Undersea Warfare (TUSW) Command & Control (C2) systems supporting the warfighter.

PROJECT 3094: Undersea Warfare Decision Support System (USW-DSS) is the Navy Program of Record ASW C2 Net-Centric system supporting the warfighter. USW-DSS continues to develop and test the software changes and perform the certification testing necessary to address end of life (EOL) support issues impacting USW-DSS Build 3, as well as address emerging mandated cybersecurity requirements. As a result of the Chief of Naval Operations (CNO) direction to implement a Compile to Combat in 24 Hours (C2C24) software development process, USW-DSS has shifted to a Continuous Improvement / Continuous Deployment (CI/CD) model leveraging multiple Development and Secure cloud Operational environments (DevSecOps) which will produce baseline software upgrades twice annually. Within this CI/CD process, this project will develop, design, integrate, and test additional tools/capabilities for USW-DSS Build 3 including, but not limited to: Waterspace Management (WSM) and Prevention of Mutual Interference (PMI), Common Track Manager, Link 16 Connectivity, Common Tactical Picture (CTP), Platform Data Fusion Integration, Cross-Platform Data Fusion, Automated Asset Allocation, Asset/Threat State Information, Vulnerability Analysis enhancement, ASW Track Management, Automated Re-planning, Engagement Target Pairing, improved Theater ASW (TASW) capabilities, Data-Focused Navy Tactical Cloud Integration, and virtualization of the electronic Master Tactical Plot (eMTP) visualization/display service as 'Web USW-DSS' on which to render the CTP/Common Operational Picture (COP). These improvements address requirements from the Commander U.S. Fleet Forces endorsement of "Theater ASW Capability Requirements" letter (dated 24 February 2017).

Future USW-DSS Build 3 Fleet Capability Releases (FCR) will focus on required system re-architecture to keep pace with the latest network and system hardware obsolescence as well as expanded processing and user interface capacity requirements that are driven by expanded multi-system and multi-level security inputs. These FCRs will also achieve commonality between afloat and ashore USW-DSS systems, such that continuous development improvements impact both shipboard and Theater Undersea Warfare Command Headquarters (TUSWCHQ) watch floors, as well as training and Fleet support installations uniformly.

PROJECT 3439: The Networked Architecture for Undersea Theater Integrated C2 Advantage (NAUTICA) Project provides Theater Anti-Submarine Warfare (TASW) architecture development, systems engineering, and design, and continues the system engineering effort required to design, develop, and deliver an integrated TASW battle management suite in accordance with the 2007 ASW Initial Capabilities Document (ICD). The plan prioritizes NAUTICA investments in accordance with the Commander U.S. Fleet Forces endorsement of "Theater ASW Capability Requirements" letter (dated 24 February 2017) and Center for Security Forces (CSF) letter "Criticality of Sustaining PMI and WSM Capability and Meeting Emerging Requirements for Great Competition" submitted to OPNAV N2N6. The design of the integrated

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604518N I Combat Information Center Conv				
TASW battle management suite will include a system of systems TASW architecture to enable the existing programs of record under development from the Program Executive Office (PEO) for Integrated Warfare Systems (IWS), PEO Command, Controls, Communications, Computers and Intelligence (C4I), PEO AIR, PEO SUB, and N9SP to exploit a common framework. The common architecture will define the key data exchanges, common displays and processing, data models, cross domain interfaces, and multi-level security software to fuse Theater Undersea Warfare C2 data within USW-DSS and an ever increasing number of Command, Control, Communications, Computers & Intelligence (C4I) tactical data sources into a CTP.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		11.631	11.160	11.105	-	11.105
Current President's Budget		11.389	16.160	11.359	-	11.359
Total Adjustments		-0.242	5.000	0.254	-	0.254
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	5.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.242	0.000			
• Program Adjustments		0.000	0.000	-0.008	-	-0.008
• Rate/Misc Adjustments		0.000	0.000	0.262	-	0.262
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 9999: Congressional Adds						
Congressional Add: Theater edge correlation and distribution system						
Congressional Add Subtotals for Project: 9999						
Congressional Add Totals for all Projects						
Change Summary Explanation						
FUNDING CHANGES AT THE OVERALL PE LEVEL:						
- FY 2023 increase of \$+5.000M supports the Theater Edge Correlation and Distribution System effort in Project C889.						
- FY 2024 net increase of \$+0.254M reflects the incorporation of miscellaneous program/rate adjustments.						
FY 2023 TO FY 2024 INCREASE/DECREASE:						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv	
<p>- PROJECT 3094: The FY 2023 to FY 2024 increase (\$+0.571M) is required for the development and integration of USW-DSS technologies to support tactical dissemination of USW tactical picture and targeting data to the submarine.</p> <p>- PROJECT 3439: The FY 2023 to FY 2024 decrease (\$-0.372M) is in alignment with current program phasing.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604518N / <i>Combat Information Center Conv</i>				Project (Number/Name) 3094 / <i>USW Decision Support</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3094: <i>USW Decision Support</i>	86.775	9.994	9.913	10.484	-	10.484	10.389	10.574	10.709	10.910	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

Undersea Warfare Decision Support System (USW-DSS) is the Navy Program of Record Anti-Submarine Warfare (ASW) Command and Control (C2) Net-Centric system supporting the warfighter. USW-DSS provides an integrated, near-real time, net-centric ASW Common Tactical Picture (CTP) and Common Operational Picture (COP) for the Carrier Strike Groups (CSGs). USW-DSS is a C2 capability identified in the ASW Initial Capabilities Document (ICD) for the Sea Combat Commander (SCC) and Theater USW Commander (TUSWC). USW-DSS enables effective planning and execution of USW operations, optimizes placement of sensors for exploitation of the environment, manages available resources, balances operations versus risk, and provides a clear vulnerability assessment of the operational environment. USW-DSS ensures safe operational and tactical C2 of submerged U.S. and allied submarines via Prevention of Mutual Interference (PMI) capability, and protects from blue-on-blue engagement with a Waterspace Management planning and execution tool. USW-DSS shortens C2 decision processes for detection-to-engagement across multiple platforms, including those with low-bandwidth communications or intermittent connectivity. Tactical data such as tracks, environmental, and sensor processing data is ingested into USW-DSS through platform specific interfaces such as the AN/SQQ-89A(V)15 Surface Ship ASW Combat System, the Global Command and Control System - Maritime (GCCS-M), and the AN/SQQ-34 Aircraft Carrier Tactical Support Center (CV-TSC). USW-DSS processes this and other tactical data and supports intelligent dissemination of the data to unit and theater level platforms in support of an enhanced USW tactical picture. USW-DSS provides USW Commanders with an expanded, net-centric USW collaborative capability across CSG platforms (CVNs, CGs, DDGs) as well as supporting shore nodes to include Commander Task Force (CTF), the Naval Oceanographic Processing Facility (NOPF), and Tactical Operations Center (TOC) and Maritime Operations Center (MOC). On afloat platforms, USW-DSS processing software is virtualized for portability and is hosted on the Consolidated Afloat Networks and Enterprise Services (CANES) system and implements a Service-Oriented Architecture (SOA) with display generation and operator interfaces provided via USW-DSS hardware. For support and ashore nodes, USW-DSS processing software is hosted on Commercial-Off-The-Shelf (COTS) hardware.

Future USW-DSS capability is phased to deliver timely and cost-effective software improvements to the warfighter via the Fleet Capability Release (FCR) process. USW-DSS Build 3 FCR incremental developments implement cost-effective cyber security and Theater ASW (TASW) functionality by integrating inputs from data sources and platforms such as the P8-A Poseidon aircraft and associated Air ASW sensors, provide improved and additional functionality, and improve stability and reliability. USW-DSS Build 3 provides common and improved visualization, integrated USW platform sensor data sharing, reduced data entry, improved sensor performance predictions, data fusion, and reduced redundancy across USW Tactical Decision Aids (TDAs). The project provides a greater understanding of the undersea battle space by allowing the entire force (carrier and expeditionary strike group, theater, or other) to have a common and thorough understanding of the battle space with characterized uncertainties. The Navy continues to modernize and add sensor capabilities to existing programs of record that are significant data sources of information for USW-DSS. These include, but are not limited to the AN/SQQ-89A(V)15 Surface Ship ASW Combat System, AN/SQQ-34 CV-TSC, GCCS-M, and the Distributed Common Ground System - Navy (DCGS-N). As the sensor capabilities and systems mature, the tactical data valuable to USW-DSS is incorporated as part of a future FCR. Through targeted architectural improvements, follow-on FCRs will facilitate the migration of select components of USW-DSS to a DoD commercial cloud computing environment, thus improving software performance and scalability while keeping future hardware costs in check. Additionally, follow-on FCRs are targeted to support

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv	Project (Number/Name) 3094 / USW Decision Support				
operations across different security enclaves and additional platform tactical data interfaces such as those associated with P-8A Poseidon aircraft, and submarines. Additionally, USW-DSS is adopting agile Information Technology (IT) developments to align with the Compile to Combat in 24 Hours (C2C24) initiative.							
USW-DSS will continue to address end of life (EOL) support issues impacting USW-DSS Build 3 as well as address emerging mandated cybersecurity requirements. Funding will be used to continue to develop, design, integrate, and test additional USW-DSS tools/capabilities for Build 3 including, but not limited to: Waterspace Management and PMI, Common Track Manager, Link 16 Connectivity, CTP, Platform Data Fusion Integration, Cross-Platform Data Fusion, Automated Asset Allocation, Asset/Threat State Information, Vulnerability Analysis enhancement, ASW Track Management, Automated Re-planning, Area Planning, improved TASW capabilities, Data-Focused Navy Tactical Cloud Integration, and virtualization of the electronic Master Tactical Plot (eMTP) visualization/display service as 'Web USW-DSS' on which to render the CTP/COP. These improvements address requirements from the Commander U.S. Fleet Forces endorsement of "Theater ASW Capability Requirements" letter (dated 24 February 2017).							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: USW-DSS Capability Improvements			9.994	9.913	10.484	0.000	10.484
Articles:			-	-	-	-	-
Description: Design, develop, integrate, and test additional USW-DSS tools/capabilities for Build 3 including Common Tactical Picture (CTP), Platform Data Fusion integration, Cross-Platform Data Fusion, Theater Level Mission Planning, Automated Asset Allocation, Asset/Threat State Information, Vulnerability Analysis enhancement, Anti-Submarine Warfare (ASW) Track Management, Automated Re-planning, Engagement Target Pairing, improved Theater Undersea Warfare (TUSW) capabilities, Data-Focused Navy Tactical Cloud Integration, and virtualization of the Electronic Master Tactical Plot (eMTP) visualization/display service as 'Web USW-DSS', and cyber security protection requirements.							
FY 2023 Plans:							
- Continue USW-DSS Build 3 Fleet Capability Release (FCR) 2 integration/test efforts to include the development and delivery of two additional capability drops to improve TUSW command and control (C2) capability.							
- Improve system reliability, maintainability, and resilience of USW-DSS Build 3 by integrating A/B system concept into system architecture through virtualization and increased capacity.							
- Integrate USW-DSS Build 3 FCR 2 into Consolidated Afloat Network and Enterprises System (CANES) for afloat systems by successfully completing CANES application integration testing.							
- Continue development and transition of Adaptive Anti-Submarine Warfare (AASW) improved submarine search and sensor analysis toolsets.							
- Improve Continuous Integration, Continuous Delivery (CI/CD), and software development processes for USW-DSS Build 3 via agile integration and rapid delivery through development, security, and operations (DevSecOps).							

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023									
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv		Project (Number/Name) 3094 / USW Decision Support							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
<div>- Continue to develop and test interfaces with the AN/SQQ-89A(V)15 Surface ASW Combat System.</div> <div>- Continue to support USW-DSS allied/coalition interoperability requirements.</div> <div>FY 2024 Base Plans:</div> <div>- Complete USW-DSS Build 3 FCR 2 integration/test efforts.</div> <div>- Complete certification of USW-DSS Build 3 FCR 2 for use on afloat systems.</div> <div>- Complete development and testing of interfaces to the AN/SQQ-89A(V)15 Surface ASW Combat System.</div> <div>- Continue to support USW-DSS allied/coalition interoperability requirements to include testing of interoperability between US and allied USW-DSS systems.</div> <div>- Continue to improve CI/CD, and software development processes for USW-DSS Build 3 via agile integration and rapid delivery through DevSecOps.</div> <div>- Continue development and transition of AASW improved submarine search and sensor analysis toolsets.</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>- FY 2023 (\$9.913M) to FY 2024 (\$10.484M) increase (\$+0.571M) is required for the development and integration of USW-DSS technologies to support tactical dissemination of USW tactical picture and targeting data to the submarine.</div>											
Accomplishments/Planned Programs Subtotals				9.994	9.913	10.484	0.000	10.484			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/2176: USW Support Equipment (N2N6/USW-DSS only)	8.668	12.216	12.264	-	12.264	12.526	12.834	13.084	13.368	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
<div>- Hardware/Software development and integration via Navy Warfare Centers and Small Business contractors.</div> <div>- Utilize Small Business Innovative Research (SBIR) funding and development efforts for open competition on capability improvements to reach Technology Readiness Level (TRL) 5/6.</div> <div>- Utilize Other Transaction Authority (OTA) to expedite prototype development.</div>											



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv	Project (Number/Name) 3094 / USW Decision Support
<div>- Invest in maturing SBIR developed technologies beyond TRL 5/6 for integration into USW-DSS and Theater Anti-Submarine Warfare (TASW) systems via SBIR Phase III contracts.</div> <div>- Integrate technically-mature Office of Naval Research Technology Candidates and Future Naval Capabilities that meet technology gaps identified by NAUTICA into USW-DSS baseline.</div> <div>- Pursue future software-only architecture through virtualization and DevSecOps to allow for rapid system upgrades and cybersecurity accreditation.</div>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv				Project (Number/Name) 3094 / USW Decision Support					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
USW-DSS Capability Enhancements - Development	C/CPFF	Adaptive Methods : VA	7.996	1.250	Mar 2022	1.240	Dec 2022	0.500	Dec 2023	-		0.500	Continuing	Continuing	Continuing
USW-DSS Capability Enhancements - Development	C/CPFF	DH Wagner : PA	1.208	0.375	Mar 2022	0.370	Dec 2022	0.760	Dec 2023	-		0.760	Continuing	Continuing	Continuing
USW-DSS Capability Enhancements - Development	WR	NIWC/Pacific : CA	1.200	1.500	Jan 2022	1.450	Dec 2022	1.450	Nov 2023	-		1.450	Continuing	Continuing	Continuing
USW-DSS Capability Enhancements - Development	WR	NSWC/Carderock : MD	4.883	0.500	Mar 2022	0.475	Nov 2022	0.300	Nov 2023	-		0.300	Continuing	Continuing	Continuing
USW-DSS Capability Enhancements - Development	WR	NSWC/Dahlgren : VA	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	-
USW-DSS Capability Enhancements - Development	WR	NUWC/Keyport : WA	3.554	0.550	Oct 2021	0.500	Nov 2022	1.000	Oct 2023	-		1.000	Continuing	Continuing	Continuing
USW-DSS Capability Enhancements - Development	WR	NUWC/Newport : RI	5.338	3.400	Oct 2021	3.145	Nov 2022	2.349	Oct 2023	-		2.349	Continuing	Continuing	Continuing
USW-DSS Capability Enhancements - Development	C/CPFF	Progeny : VA	6.630	0.600	Nov 2021	0.580	Dec 2022	1.850	Dec 2023	-		1.850	Continuing	Continuing	Continuing
USW-DSS Capability Enhancements - Development	C/CPFF	UT/ARL : TX	0.266	0.000		0.000		0.000		-		0.000	0.000	0.266	-
USW-DSS Capability Enhancements - Development	Various	Var : Var*	51.810	1.389	Mar 2022	1.663	Dec 2022	1.785	Dec 2023	-		1.785	Continuing	Continuing	Continuing
Subtotal			83.035	9.564		9.423		9.994		-		9.994	Continuing	Continuing	N/A
Remarks															
*Consists of multiple performing activities with funding for each not greater than \$1M per year.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv				Project (Number/Name) 3094 / USW Decision Support					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	Adaptive Methods : VA	0.972	0.115	Mar 2022	0.115	Dec 2022	0.115	Dec 2023	-		0.115	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	Progeny : VA	1.897	0.150	Nov 2021	0.150	Dec 2022	0.150	Dec 2023	-		0.150	Continuing	Continuing	Continuing
Subtotal			2.869	0.265		0.265		0.265		-		0.265	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support - Acquisition, Business & Finance	C/CPFF	CACI : VA	0.313	0.000		0.000		0.000		-		0.000	0.000	0.313	-
Program Management Support - Acquisition, Business & Finance	C/CPFF	Booz Allen Hamilton : VA	0.088	0.090	Mar 2022	0.100	Dec 2022	0.100	Dec 2023	-		0.100	Continuing	Continuing	Continuing
Program Management Support - Sytems Engineering and Technical Assistance (SETA)	C/CPFF	CGI Federal : VA	0.368	0.000		0.000		0.000		-		0.000	0.000	0.368	-
Program Management Support - Sytems Engineering and Technical Assistance (SETA)	C/CPFF	KMS Solutions* : VA	0.042	0.050	Feb 2022	0.100	Dec 2022	0.100	Jan 2024	-		0.100	Continuing	Continuing	Continuing
Program Office Travel	Allot	NAVSEA PEO IWS5 : DC	0.060	0.025	Oct 2021	0.025	Oct 2022	0.025	Oct 2023	-		0.025	Continuing	Continuing	Continuing
Subtotal			0.871	0.165		0.225		0.225		-		0.225	Continuing	Continuing	N/A
Remarks															
*In addition to program office support, KMS Solutions provide technical planning, systems engineering, and test support.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604518N / <i>Combat Information Center Conv</i>					Project (Number/Name) 3094 / <i>USW Decision Support</i>					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			86.775	9.994		9.913		10.484		-		10.484	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604518N / Combat Information Center

Conv

## Project (Number/Name)

3094 / USW Decision Support

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
Project 3094	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
USW-DSS Build 3 Fleet Capability Release Design/Development Pipeline	USW-DSS FCR Continuous Improvement Design/Development																											
USW-DSS Build 3 Fleet Capability Release 1 (FCR 1)	Waterspace PMI Certification Test																											
USW-DSS Build 3 Fleet Capability Release 2 (FCR 2)					Integration/Test																							
USW-DSS Build 3 Fleet Capability Release 3 (FCR 3)																												
USW-DSS Build 3 Fleet Capability Release 4 (FCR 4)																												

## Notes:

1. The Certification Test period will evaluate the operational effectiveness of each FCR and inform/influence the design/development of the next FCR.
2. During the Integration/Test period, each FCR prototype developed in the DEVSECOPS environment will be matured, capabilities will be added, and software bugs will be fixed. Up to four (4) capability drop deliveries will be incrementally tested and delivered to the Fleet providing improved USW/ASW toolsets to the theater.

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604518N / <i>Combat Information Center Conv</i>		<b>Project (Number/Name)</b> 3094 / <i>USW Decision Support</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>USW-DSS Build 3 Fleet Capability Release (FCR)</i></b>				
Continuous Improvement Design/Development	1	2022	4	2028
<b><i>USW-DSS Build 3 Fleet Capability Release 1 (FCR 1)</i></b>				
Waterspace Management and PMI Certification Test	1	2022	4	2022
<b><i>USW-DSS Build 3 Fleet Capability Release 2 (FCR 2)</i></b>				
Integration/Test	4	2022	3	2024
Certification Test	3	2024	4	2024
<b><i>USW-DSS Build 3 Fleet Capability Release 3 (FCR 3)</i></b>				
Integration/Test	4	2024	1	2027
Certification Test	1	2027	2	2027
<b><i>USW-DSS Build 3 Fleet Capability Release 4 (FCR 4)</i></b>				
Integration/Test	2	2027	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604518N / <i>Combat Information Center Conv</i>				Project (Number/Name) 3439 / <i>Project NAUTICA: Integrated Theater ASW C4I</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3439: <i>Project NAUTICA: Integrated Theater ASW C4I</i>	19.328	1.395	1.247	0.875	-	0.875	0.787	0.784	0.771	0.757	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Networked Architecture for Undersea Theater Integrated C2 Advantage (NAUTICA) project provides Theater Anti-Submarine Warfare (TASW) architecture development, systems engineering, and design. NAUTICA will identify requirements to integrate intelligence (operational and tactical) and sensor (national and organic) systems to provide a fully informed Naval Integrated Fires - Counter Undersea (N2CX) Common Operational Picture (COP) of enemy undersea forces, maximizing decision superiority and theater level planning, and address TASW C2. Using Model-Based Systems Engineering (MBSE), NAUTICA decomposes warfighting requirements into system requirements allocated to existing Programs of Record or identified as new program requirements. Theater Undersea Warfare Operations Center's (TUSWOC) systems today are not integrated to support performance requirements during all threat levels. This results in failure to most effectively employ Theater USW assets. Near term, the Project will continue to accelerate development by rapidly prototyping the framework for existing legacy systems to be federated, to exchange key information and significantly improve existing TASW capability. NAUTICA will also establish a transition path for new USW technologies such as the Operational Planning Tool (OPT), Water Space Planner (WASP), Battlespace Management Tactical Decision Aid (BAM TDA), and other Future Naval Capabilities (FNCs) that will start to transition Technology Readiness Level (TRL) 5/6 enabling technologies into the USW-DSS Program of Record.

FY 2024 continues the effort required to deliver an integrated TASW battle management suite. NAUTICA investments are prioritized in accordance with the Commander U.S. Fleet Forces endorsement of "Theater ASW Capability Requirements" letter (dated 24 February 2017) and Center for Security Forces (CSF) letter "Criticality of Sustaining Prevention of Mutual Interference (PMI) and Water Space Management (WSM) Capability and Meeting Emerging Requirements for Great Competition" submitted to OPNAV N2N6. The design of the integrated TASW battle management suite will include a system of systems TASW architecture to enable the existing programs of record under development from the Program Executive Office (PEO) for Integrated Warfare Systems (IWS), PEO Command, Controls, Communications, Computers and intelligence (C4I), PEO AIR, PEO Undersea Warfare Systems (UWS), and N9SP to exploit a common framework. The common architecture will define the key data exchanges, common displays and processing, data models, cross domain interfaces, and multi-level security software that will enable systems such as USW-DSS to exchange, display, and exploit information at the appropriate classifications.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> NAUTICA - Theater Architecture Development and System Integration	1.395	1.247	0.875	0.000	0.875
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> This project is responsible for the analysis of the Theater Anti-Submarine Warfare (TASW) Command Center System of Systems (SoS), design, and planning. The effort will make specific recommendations for the design and development of the interfaces and test procedures for the systems being					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604518N / <i>Combat Information Center Conv</i>	<b>Project (Number/Name)</b> 3439 / <i>Project NAUTICA: Integrated Theater ASW C4I</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>developed under separate Programs of Record. Specifically, the Global Command and Control System - Maritime (GCCS-M), Undersea Warfare Decision Support System (USW-DSS), and Maritime Tactical Command &amp; Control-2 (MTC-2) systems have evolved on separate timelines. This project will develop near term solutions and propose a long range plan for these systems. The investment will design the interfaces that will federate the systems to close the gaps. The objective is to replace the manpower-intensive operations with machine-to-machine interfaces, and then assess the warfighting benefit of integration to inform future decisions. This investment addresses TASW Command and Control (C2) needs identified in the ASW Initial Capabilities Document (ICD). This investment will provide modeling and requirements development to support the Undersea Domain.</p> <p><b><i>FY 2023 Plans:</i></b></p> <ul style="list-style-type: none"> <li>- Continue Theater Anti-Submarine Warfare (TASW) Advancement Phase I Systems-of-Systems model and cybersecurity modeling efforts.</li> <li>- Complete systems engineering efforts for TASW Advancement Phase II High-Side Sensor Fusion systems engineering efforts.</li> <li>- Begin TASW Advancement Phase II High-Side Sensor Fusion development efforts.</li> <li>- Continue to orchestrate collaboration for multi-program development efforts and develop solutions for seams issues between platforms and networks.</li> <li>- Continue development and modernization of DoD Government cloud environment for Theater Undersea Warfare (TUSW) capability testing and analysis.</li> <li>- Manage Model-Based Systems Engineering (MBSE) living model addressing requirements across Programs of Record and projects.</li> <li>- Evaluate Science and Technology (S&amp;T) developments to fill TUSW requirement gaps and recommend integration within TUSW programs of record.</li> <li>- Complete and deliver Cross Domain Solutions (CDS) update to meet DoD Raise the Bar (RTB) requirements and begin supporting USW-DSS Prevention of Mutual Interference (PMI) data flows.</li> <li>- Initiate development of methods for increasing TUSW Command and Control (C2) data exchange to submarines in emission controlled (EMCON) environments.</li> </ul> <p><b><i>FY 2024 Base Plans:</i></b></p> <ul style="list-style-type: none"> <li>- Continue TASW Advancement Phase I Systems-of-Systems model and cybersecurity modeling efforts.</li> <li>- Continue TASW Advancement Phase II High-Side Sensor Fusion development efforts.</li> </ul>					



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604518N / <i>Combat Information Center Conv</i>		<b>Project (Number/Name)</b> 3439 / <i>Project NAUTICA: Integrated Theater ASW C4I</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<ul style="list-style-type: none"> <li>- Continue to orchestrate collaboration for multi-program development efforts and develop solutions for seams issues between platforms and networks.</li> <li>- Continue managing MBSE living model addressing requirements across Programs of Record and projects.</li> <li>- Continue evaluating S&amp;T developments to fill TUSW requirement gaps and recommend integration within TUSW Programs of Record.</li> </ul> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> - FY 2023 (\$1.247M) to FY 2024 (\$0.875M) decrease (\$-0.372M) is in alignment with current program phasing.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		1.395	1.247	0.875	0.000	0.875
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b> <ul style="list-style-type: none"> <li>- Theater architecture development and system integration initiative that provides the transition funding for Office of Naval Research (ONR) Future Naval Capabilities (FNC) investments addressing TUSW capability gaps for Water Space Management (WSM) and Battlespace Management Tactical Decision Aids (TDAs).</li> <li>- Capabilities developed under Small Business Innovative Research (SBIR) and FNC investments are incorporated into Theater ASW (TASW) Programs of Record, such as USW-DSS, through incremental Fleet Capability Releases (FCRs).</li> </ul>						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv				Project (Number/Name) 3439 / Project NAUTICA: Integrated Theater ASW C4I					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NAUTICA - Theater Architecture Development and System Integration	C/CPFF	Adaptive Methods : VA	1.750	0.000		0.000		0.000		-		0.000	0.000	1.750	-
NAUTICA - Theater Architecture Development and System Integration	WR	COMNAVAIRPAC : CA	0.438	0.000		0.000		0.000		-		0.000	0.000	0.438	-
NAUTICA - Theater Architecture Development and System Integration	C/CPFF	DH Wagner : PA	0.208	0.000		0.000		0.000		-		0.000	0.000	0.208	-
NAUTICA - Theater Architecture Development and System Integration	WR	NSWC/Carderock : MD	1.562	0.000		0.000		0.000		-		0.000	0.000	1.562	-
NAUTICA - Theater Architecture Development and System Integration	WR	NSWC/Dahlgren : VA	0.927	0.075	Dec 2021	0.075	Nov 2022	0.000		-		0.000	0.000	1.077	-
NAUTICA - Theater Architecture Development and System Integration	WR	NUWC/Keyport : WA	2.440	0.015	Nov 2021	0.050	Nov 2022	0.000		-		0.000	0.000	2.505	-
NAUTICA - Theater Architecture Development and System Integration	WR	NUWC/Newport : RI	1.704	0.025	Nov 2021	0.075	Nov 2022	0.000		-		0.000	0.000	1.804	-
NAUTICA - Theater Architecture Development and System Integration	WR	NIWC : CA	0.583	0.350	Nov 2021	0.300	Nov 2022	0.340	Nov 2023	-		0.340	Continuing	Continuing	Continuing
NAUTICA - Theater Architecture Development and System Integration	C/CPFF	Progeny : VA	0.000	0.419	Feb 2022	0.269	Dec 2022	0.300	Dec 2023	-		0.300	Continuing	Continuing	Continuing
NAUTICA - Theater Architecture Development and System Integration	C/CPFF	UT/ARL : TX	3.400	0.280	Nov 2021	0.225	Dec 2022	0.050	Dec 2023	-		0.050	Continuing	Continuing	Continuing
NAUTICA - Theater Architecture Development and System Integration	C/CPFF	Various : Var*	3.864	0.031	Mar 2022	0.048	Dec 2022	0.050	Dec 2023	-		0.050	Continuing	Continuing	Continuing
Subtotal			16.876	1.195		1.042		0.740		-		0.740	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv				Project (Number/Name) 3439 / Project NAUTICA: Integrated Theater ASW C4I					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
*Consists of multiple performing activities with funding for each not greater than \$1M per year.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support - Acquisition, Business & Finance	C/CPFF	CACI : VA	0.192	0.000		0.000		0.000		-		0.000	0.000	0.192	-
Program Management Support - Acquisition, Business & Finance	C/CPFF	Booz Allen Hamilton : VA	0.080	0.075	Dec 2021	0.075	Dec 2022	0.050	Dec 2023	-		0.050	Continuing	Continuing	Continuing
Program Management Support - Systems Engineering and Technical Assistance (SETA)	C/CPFF	CGI Federal* : VA	1.859	0.000		0.000		0.000		-		0.000	0.000	1.859	-
Program Management Support - Systems Engineering and Technical Assistance (SETA)	C/CPFF	KMS Solutions* : VA	0.230	0.100	Dec 2021	0.105	Dec 2022	0.075	Dec 2023	-		0.075	Continuing	Continuing	Continuing
Program Office Travel	Allot	NAVSEA PEO IWS5 : DC	0.091	0.025	Oct 2021	0.025	Oct 2022	0.010	Oct 2023	-		0.010	Continuing	Continuing	Continuing
Subtotal			2.452	0.200		0.205		0.135		-		0.135	Continuing	Continuing	N/A
Remarks															
*In addition to program office support, KMS Solutions provide technical planning, systems engineering, and test support.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			19.328	1.395		1.247		0.875		-		0.875	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy							Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv			Project (Number/Name) 3439 / Project NAUTICA: Integrated Theater ASW C4I			
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023												
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv								Project (Number/Name) 3439 / Project NAUTICA: Integrated Theater ASW C4I										
	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
Project 3439	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Theater ASW (TASW) Advancement Phase I - Federation of Systems																												
	System-of-Systems Model / Cybersecurity Monitoring																											
	Requirements Definition																											
Theater ASW (TASW) Advancement Phase II - High Side Sensor Fusion	Systems Engineering																											
					Development																							
													System-of-Systems Integration / Cybersecurity Updates															

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv	Project (Number/Name) 3439 / Project NAUTICA: Integrated Theater ASW C4I	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Theater ASW (TASW) Advancement Phase I - Federation of Systems</b>				
System-of-Systems Model / Cybersecurity Monitoring	1	2022	4	2025
<b>Theater ASW (TASW) Advancement Phase II - High Side Sensor Fusion</b>				
Requirements Definition	1	2022	3	2022
Systems Engineering	1	2022	3	2023
Development	2	2023	4	2025
System-of-Systems Integration / Cybersecurity Updates	2	2025	4	2028

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604518N / <i>Combat Information Center Conv</i>				<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: <i>Congressional Adds</i>	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
Develop and deploy Battle Management Aids at Theater Undersea Warfare Commander Headquarters.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2022	FY 2023
<b>Congressional Add:</b> Theater edge correlation and distribution system	0.000	5.000
<b>FY 2022 Accomplishments:</b> N/A		
<b>FY 2023 Plans:</b> Develop and deploy Battle Management Aids at Theater Undersea Warfare Commander Headquarters supporting: - Aggregating, curating, and fusing an Undersea Warfare (USW) Common Tactical Picture (CTP) including targets, queuing, environmental, and Order of Battle data. - Broadcast builders providing customized and tailored CTP data over multiple Emission Control data links for tactical platforms. - Allied USW CTP dissemination and synchronization supporting multiple releasable CTP views supporting coalition and bi-lateral agreements.		
<b>Congressional Adds Subtotals</b>	0.000	5.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
Utilize existing Naval Undersea Warfare Center (NUWC), Newport, RI contract with prime contractor SEACORP.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv						Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Theater Edge Correlation Development	WR	NUWC, Newport : RI	0.000	0.000		0.400	Mar 2023	0.000		-		0.000	0.000	0.400	-		
Theater Edge Correlation Development	C/CPFF	SEACORP : RI	0.000	0.000		4.400	May 2023	0.000		-		0.000	0.000	4.400	-		
Subtotal			0.000	0.000		4.800		0.000		-		0.000	0.000	4.800	N/A		
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Management Support - Acquisition, Business & Finance	C/CPFF	Booz Allen Hamilton : VA	0.000	0.000		0.200	Apr 2023	0.000		-		0.000	0.000	0.200	-		
Subtotal			0.000	0.000		0.200		0.000		-		0.000	0.000	0.200	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.000	0.000		5.000		0.000		-		0.000	0.000	5.000	N/A		
Remarks																	



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PE 0604518N: *Combat Information Center Conv*  
Navy

**Volume 3 - 885**

**Project (Number/Name)**  
9999 / Congressional Adds

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604518N / Combat Information Center Conv	Project (Number/Name) 9999 / Congressional Adds	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Theater Edge Correlation and Distribution System: Theater Edge Correlation and Distribution System Development	2	2023	3	2024
Theater Edge Correlation and Distribution System: Theater Edge Correlation and Distribution System Phase 1 Test & Certification	1	2024	1	2024
Theater Edge Correlation and Distribution System: Theater Edge Correlation and Distribution System Phase 1 Transition to USW-DSS	2	2024	2	2024
Theater Edge Correlation and Distribution System: Theater Edge Correlation and Distribution System Phase 2 Test & Certification	3	2024	3	2024
Theater Edge Correlation and Distribution System: Theater Edge Correlation and Distribution System Phase 2 Transition to USW-DSS	4	2024	4	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	666.676	84.526	87.341	90.307	-	90.307	104.858	89.927	79.533	75.126	Continuing	Continuing
3186: Air and Missile Defense Radar	666.676	84.526	87.341	90.307	-	90.307	104.858	89.927	79.533	75.126	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P384												
A. Mission Description and Budget Item Justification												
<p>The Air and Missile Defense Radar (AMDR) program consists of the AN/SPY-6(V) Family Of Radars (FoR):</p> <ul style="list-style-type: none"><li>- AN/SPY-6(V)1 (DDG 51 Arleigh Burke class Flight III guided missile destroyer)</li><li>- AN/SPY-6(V)2 (Nimitz class Carriers, America class LHA, and San Antonio class LPD)</li><li>- AN/SPY-6(V)3 (Ford class CVN, Constellation class FFG)</li><li>- AN/SPY-6(V)4 (DDG 51 Arleigh Burke class Flight IIA guided missile destroyer backfit)</li></ul> <p>AN/SPY-6(V)1 will provide multi-mission capabilities, simultaneously supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area and Self Defense against air and surface threats. For the Ballistic Missile Defense (BMD) capability, increased radar sensitivity and bandwidth over current radar systems are needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges, concurrent with Area and Self Defense against Air and Surface threats. For the Area Air Defense and Self Defense capability, increased sensitivity and clutter capabilities are needed to detect, react to, and engage stressing Very Low Observable/Very Low Flyer (VLO/VLF) threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an active phased array radar with the required capabilities to address the evolving threat. The AN/SPY-6(V) FoR will obtain performance and technology enhancements throughout their service life based upon an approach that includes modularity of hardware and software, a scalable design and Open Architecture (OA).</p> <p>AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR) will provide multi-mission capabilities, simultaneously supporting Air Traffic Control (ATC), situational awareness, and ship self-defense against Air and Surface threats. For these missions, increased clutter capability, short-range detection and tracking, and special weather waveforms are needed. AN/SPY-6(V)3 is the primary air surveillance radar supporting ship self-defense, situational awareness and Air Traffic Control (ATC) for Ford class Carriers. For other ship classes, AN/SPY-6(V)2 is the primary radar for self-defense and situational awareness with the ancillary role of supporting ATC by resolving SPN-50 mast blockage for ATC.</p> <p>AN/SPY-6(V)4 will provide Active Electronically-Steered Array (AESA) and digital beamforming technology for backfit to Flight IIA DDG. Backfit of SPY-6 technology on DDG 51 FLT IIA commences with non-recurring engineering efforts to scale the radar hardware and software; perform modeling and simulation to update the Continuity of Operations (CONOPS), and; enable SPY-6 IAMD performance capabilities on FLT IIA DDGs.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604522N / Air & Missile Defense Radar (AMDR) System				
Advanced Distributed Radar (ADR) includes software enhancements that will enable multi-ship cooperative radar operations in order to support Distributed Maritime Operations (DMO) for the SPY-6 FoR. ADR transitions Receive Only Cooperative Radar (ROCR), Networked Cooperative Radar (NCR), and EMPIRE software capabilities from Office of Naval Research (ONR) to tactical development, implementation and testing. ADR software enhancements will increase radar detection performance for Integrated Air and Missile Defense capabilities and enable operations with radars in receive-only mode in cooperation with other AN/SPY-6(V) radars. Agnostic Signal Processing for Increased Radar Efficiency (ASPIRE) effort will transition from ONR to address hardware options for more flexible digital beamforming, advanced signal processing, signal synthesizer architecture, and smaller digital receiver-exciter systems, resulting in efficiencies in radar size, weight, and power requirements as a key enabler to further enhance radar capabilities.						
The FY24 funding request supports the following efforts: SPY-6(V)1 integration efforts and associated development to support AEGIS Baseline 10 integration, advanced radar capability testing at the Advanced Radar Development Evaluation Laboratory (ARDEL), and integration with the AEGIS Virtual Test Environment (VTE). Integration efforts and associated development for AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR)) to integrate with Ship Self Defense System (SSDS) Baseline 12 and meet the performance requirements contained in the Battlespace Awareness ICD. This includes continued testing at the Land Based Test Site and integration efforts with the SYY-1 Air Traffic Control System and Cooperative Engagement Capability. AN/SPY-6(V)4 FLT IIA backfit efforts will continue with ship integration planning, system-level requirements development, modeling and simulation in support of requirements development, and software development to modify S-Band product line code for (V)4. ADR efforts will continue combat system integration and commence software development including systems engineering in support of software development, modeling and simulation activities in support of software development and support technology transition activities.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		87.364	87.459	97.064	-	97.064
Current President's Budget		84.526	87.341	90.307	-	90.307
Total Adjustments		-2.838	-0.118	-6.757	-	-6.757
• Congressional General Reductions		-	-0.118			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-2.838	0.000			
• Program Adjustments		0.000	0.000	-7.433	-	-7.433
• Rate/Misc Adjustments		0.000	0.000	0.676	-	0.676
Change Summary Explanation						
FY 2023: Decrease of \$.118M is due to Title VIII FFRDC reduction.						
FY 2024: Net decrease of \$6.757M is primarily due to Rate/Misc Adjustments (under-execution) realignments; total reduction was partially offset by funding added associated with ASPIRE, which is a new effort starting in FY24.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System				Project (Number/Name) 3186 / Air and Missile Defense Radar			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3186: Air and Missile Defense Radar	666.676	84.526	87.341	90.307	-	90.307	104.858	89.927	79.533	75.126	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: P384												

**A. Mission Description and Budget Item Justification**

The Air and Missile Defense Radar (AMDR) program consists of the AN/SPY-6(V) Family Of Radars (FoR):

- AN/SPY-6(V)1 (DDG 51 Arleigh Burke class Flight III guided missile destroyer)
- AN/SPY-6(V)2 (Nimitz class Carriers, America class LHA, and San Antonio class LPD)
- AN/SPY-6(V)3 (Ford class Carriers, Constellation class FFG)
- AN/SPY-6(V)4 (DDG 51 Arleigh Burke class Flight IIA guided missile destroyer backfit)

AN/SPY-6(V)1 will provide multi-mission capabilities, simultaneously supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area and Self Defense against air and surface threats. For the Ballistic Missile Defense (BMD) capability, increased radar sensitivity and bandwidth over current radar systems are needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges, concurrent with Area and Self Defense against Air and Surface threats. For the Area Air Defense and Self Defense capability, increased sensitivity and clutter capabilities are needed to detect, react to, and engage stressing Very Low Observable/Very Low Flyer (VLO/VLF) threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an active phased array radar with the required capabilities to address the evolving threat. The AN/SPY-6(V) FoR will obtain performance and technology enhancements throughout their service life based upon an approach that includes modularity of hardware and software, a scalable design and Open Architecture (OA).

AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR) will provide multi-mission capabilities, simultaneously supporting Air Traffic Control (ATC), situational awareness, and ship self-defense against Air and Surface threats. For these missions, increased clutter capability, short-range detection and tracking, and special weather waveforms are needed. AN/SPY-6(V)3 is the primary air surveillance radar supporting ship self-defense, situational awareness and Air Traffic Control (ATC) for Ford class Carriers. For other ship classes, AN/SPY-6(V)2 is the primary radar for self-defense and situational awareness with the ancillary role of supporting ATC by resolving SPN-50 mast blockage for ATC.

AN/SPY-6(V)4 will provide Active Electronically-Steered Array (AESA) and digital beamforming technology for backfit to Flight IIA DDG. Backfit of SPY-6 technology on DDG 51 FLT IIA commences with non-recurring engineering efforts to scale the radar hardware and software; perform modeling and simulation to update the Continuity of Operations (CONOPS), and; enable SPY-6 IAMD performance capabilities on FLT IIA DDGs.

Advanced Distributed Radar (ADR) includes software enhancements that will enable multi-ship cooperative radar operations in order to support Distributed Maritime Operations (DMO) for the SPY-6 FoR. ADR transitions Receive Only Cooperative Radar (ROCR), Networked Cooperative Radar (NCR), and EMPIRE software

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System	Project (Number/Name) 3186 / Air and Missile Defense Radar				
capabilities from Office of Naval Research (ONR) to tactical development, implementation and testing. ADR software enhancements will increase radar detection performance for Integrated Air and Missile Defense capabilities and enable operations with radars in receive-only mode in cooperation with other AN/SPY-6(V) radars. Agnostic Signal Processing for Increased Radar Efficiency (ASPIRE) effort will transition from ONR to address hardware options for more flexible digital beamforming, advanced signal processing, signal synthesizer architecture, and smaller digital receiver-exciter systems, resulting in efficiencies in radar size, weight, and power requirements as a key enabler to further enhance radar capabilities.							
The FY24 funding request supports the following efforts: SPY-6(V)1 integration efforts and associated development to support AEGIS Baseline 10 integration, advanced radar capability testing at the Advanced Radar Development Evaluation Laboratory (ARDEL), and integration with the AEGIS Virtual Test Environment (VTE). Integration efforts and associated development for AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR)) to integrate with Ship Self Defense System (SSDS) Baseline 12 and meet the performance requirements contained in the Battlespace Awareness ICD. This includes continued testing at the Land Based Test Site and integration efforts with the SYY-1 Air Traffic Control System and Cooperative Engagement Capability. AN/SPY-6(V)4 FLT IIA backfit efforts will continue with ship integration planning, system-level requirements development, modeling and simulation in support of requirements development, and software development to modify S-Band product line code for (V)4. ADR efforts will continue combat system integration and commence software development including systems engineering in support of software development, modeling and simulation activities in support of software development and support technology transition activities.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: AN/SPY-6(V)1 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (CONTRACTOR)			30.108	27.023	20.555	0.000	20.555
Articles:			-	-	-	-	-
FY 2023 Plans:							
- Continue to provide system engineering and Software (SW) support for combat system integration efforts							
- Continue risk reduction testing at Advanced Radar Development Evaluation Laboratory (ARDEL), including refinement of radar operation functions (calibration, fault detection/fault isolation, environmental adaptation), improving electronic protection capabilities, and continue data collection on ballistic missile defense targets of opportunity							
- Support execution and data analysis of the OA at ARDEL							
- Support Developmental Test (DT)/Operational Test (OT) planning							
FY 2024 Base Plans:							
- Continue to provide system engineering and Software (SW) support for combat system integration efforts							
- Continue risk reduction testing at Advanced Radar Development Evaluation Laboratory (ARDEL), including refinement of radar operation functions (calibration, fault detection/fault isolation, environmental adaptation), improving electronic protection capabilities, and continue data collection on ballistic missile defense targets of opportunity							
- Support execution and data analysis of DT/OT events							

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System		Project (Number/Name) 3186 / Air and Missile Defense Radar		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Support Objective Quality Evidence (OQE) collection and documentation for Initial Operational Capability (IOC)						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease aligns with planned transition from core radar development to focusing on ship and combat system integration.						
Title: AN/SPY-6(V)1 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (GOVERNMENT)		4.594	5.193	4.059	0.000	4.059
Articles:		-	-	-	-	-
FY 2023 Plans: - Continue to direct and lead independent technical assessments - Continue support for combat system integration and DDG Flt III integration efforts - Continue risk reduction testing at ARDEL on remaining mission area requirements - Coordinate the OA at ARDEL and coordinate plans for combined AMDR/DDG Flt III DT/OT						
FY 2024 Base Plans: - Continue to direct and lead independent technical assessments - Continue support for combat system integration and DDG Flt III integration efforts - Continue risk reduction testing at ARDEL on remaining mission area requirements - Coordinate combined AMDR/DDG Flt III DT/OT events and generate documentation for IOC						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease aligns with planned transition from core radar development to focusing on ship and combat system integration.						
Title: AN/SPY-6(V)1 TEST AND EVALUATION ASSETS AND FACILITIES		3.265	4.366	3.449	0.000	3.449
Articles:		-	-	-	-	-
FY 2023 Plans: - Continue refresh/replace of infrastructure at PMRF test site, including facility power architecture - Continue to maintain PMRF test site - Continue to provide PMRF range services in support of risk reduction testing at ARDEL						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System		Project (Number/Name) 3186 / Air and Missile Defense Radar		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Continue to provide engineering services in support of risk reduction testing at ARDEL						
FY 2024 Base Plans: - Continue refresh/replacement of infrastructure at PMRF test site, including facility power architecture - Continue to maintain PMRF test site - Continue to provide PMRF range services in support of risk reduction testing at ARDEL - Continue to provide engineering services in support of risk reduction testing at ARDEL						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to leveraging test assets being provided by Combat System and Ship programs.						
Title: ENGINEERING CHANGES/CAPABILITY ENHANCEMENTS AND BACK FIT		15.008	21.550	38.315	0.000	38.315
Articles:		-	-	-	-	-
FY 2023 Plans: ADR Efforts: - Continue system-level requirements development - Continue modeling and simulation activities in support of requirements development - Manage risks and associated mitigation plans - Continue to support technology transition activities						
AN/SPY-6(V)4 Backfit: - Commence software development (scale (V)1 capabilities for DDG Mod) - Commence system engineering in support of software development - Continue modeling and simulation activities in support of software development - Continue Technical Data Package (TDP) maintenance - Manage risks and associated mitigation plans - Conduct In Process Review (IPR) 1 - Conduct In Process Review (IPR) 2 - Commence support for transition to production activities for production readiness						
FY 2024 Base Plans: ADR Efforts:						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System		Project (Number/Name) 3186 / Air and Missile Defense Radar		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue system-level requirements development</div> <div>- Continue modeling and simulation activities in support of requirements development</div> <div>- Conduct In Process Review (IPR) 1</div> <div>- Commence systems engineering in support of software development</div> <div>- Commence combat system integration requirements generation</div> <div>- Manage risks and associated mitigation plans</div> <div>- Continue to support technology transition activities</div> <div>AN/SPY-6(V)4 Backfit:</div> <div>- Continue software development (scale (V)1 capabilities for DDG Mod)</div> <div>- Continue system engineering in support of software development</div> <div>- Continue modeling and simulation activities in support of software development</div> <div>- Manage risks and associated mitigation plans</div> <div>- Commence ship integration planning</div> <div>- Generate test plan</div> <div>- Conduct In Process Review (IPR) 3</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Increase is due to ramp up of ADR (software development and LM Combat System planning) and Backfit (software development and test planning) efforts.</div>						
Title: PROGRAM MANAGEMENT		1.600	2.928	2.815	0.000	2.815
Articles:		-	-	-	-	-
<div>FY 2023 Plans:</div> <div>- Continue to assist in cost, schedule, and performance management, contract management and oversight, earned value assessment and risk identification and mitigation</div> <div>- Continue to provide support to Integrated Product Teams (IPTs) and Working Groups (WGs) required to support Integration &amp; Production Support (I&amp;PS) contract</div> <div>- Continue to provide support to combat system integration efforts</div> <div>- Continue support to IPTs and WGs required to support Hardware Production &amp; Sustainment (HP&amp;S) contract</div> <div>FY 2024 Base Plans:</div>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System		Project (Number/Name) 3186 / Air and Missile Defense Radar		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue to assist in cost, schedule, and performance management, contract management and oversight, earned value assessment and risk identification and mitigation</div> <div>- Continue to provide support to IPTs and WGs required to support for Design Agent activities (I&amp;PS contract and follow-on)</div> <div>- Continue to provide support to combat system integration efforts</div> <div>- Continue support to IPTs and WGs required to support HP&amp;S contract</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Decrease aligns with planned development efforts.</div>						
<div>Title: AN/SPY-6(V)2 and (V)3 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (CONTRACTOR)</div> <div>Articles:</div> <div>FY 2023 Plans:</div> <div>- Continue radar system engineering support to design Cross Product Teams (CPTs) for trade studies, requirements generation and trace, and modeling and simulation for Combat System (CS) integration efforts with Ship Self Defense System (SSDS) combat system</div> <div>- Continue radar software development for CS integration efforts with SSDS combat system</div> <div>- Continue testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land based test events, and carrier power risk reduction testing</div> <div>- Complete implementation of corrective actions for hardware defects for co-site interference</div> <div>- Continue to support operation of radar emulator at Combat System Engineering Agent (CSEA) lab in Moorestown, NJ, including combat system integration test support</div> <div>FY 2024 Base Plans:</div> <div>- Continue radar system engineering support to design Cross Product Teams (CPTs) for trade requirements generation and trace, and modeling and simulation for Combat System (CS) integration efforts with Ship Self Defense System (SSDS) combat system</div> <div>- Continue radar software development for CS integration efforts with SSDS combat system</div>		27.633 -	23.561 -	18.858 -	0.000 -	18.858 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System		Project (Number/Name) 3186 / Air and Missile Defense Radar		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land-based test events, and carrier power risk reduction testing</div> <div>- Continue to support operation of radar emulator at Combat System Engineering Agent (CSEA) lab in Moorestown, NJ, including combat system integration test support</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to resolving Co-site interference issue and ramp down of core software and systems engineering efforts.</div>						
<div>Title: AN/SPY-6(V)2 and (V)3 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (GOVERNMENT)</div> <div>Articles:</div> <div>FY 2023 Plans: - Continue to provide oversight of system engineering and software support for initial radar integration efforts with SSDS combat system</div> <div>- Continue to coordinate testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land based test events, and carrier power risk reduction testing</div> <div>- Continue to operate radar EDM at Wallops Island</div> <div>- Continue to analyze test results for requirements verification and validation</div> <div>- Complete monitoring and approve corrective action for hardware defects for co-site interference</div> <div>FY 2024 Base Plans: - Continue to provide oversight of system engineering and software support for initial radar integration efforts with SSDS combat system</div> <div>- Continue to coordinate testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land based test events, and carrier power risk reduction testing</div> <div>- Continue to operate radar EDM at Wallops Island</div>		2.318 -	2.720 -	2.256 -	0.000 -	2.256 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System				Project (Number/Name) 3186 / Air and Missile Defense Radar			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Continue to analyze test results for requirements verification and validation											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to resolving Co-site interference issue and ramp down of core software and systems engineering efforts.											
Accomplishments/Planned Programs Subtotals							84.526	87.341	90.307	0.000	90.307
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• SCN/2122: DDG51	3,841.740	7,870.766	4,709.131	-	4,709.131	4,524.569	4,321.240	4,351.256	4,767.817	4,927.728	137,974.806
• 0204228N/2980:	3.723	5.368	33.967	-	33.967	40.090	41.261	41.932	42.762	Continuing	Continuing
Items Less Than \$5M											
• SCN/2128: FFG(X)	1,090.900	1,135.224	2,173.698	-	2,173.698	1,037.042	1,932.900	1,041.357	2,057.744	8,612.597	21,421.762
• SCN/2001: Carrier Replacement Program	1,353.205	1,927.580	1,739.896	-	1,739.896	2,416.717	1,159.211	1,842.376	2,119.562	12,203.511	56,154.063
• SCN/2086: CVN Refueling Overhauls	2,840.578	674.081	860.068	-	860.068	2,298.082	2,199.888	259.075	552.634	5,487.069	42,619.730
• SCN/3041: LHA	68.637	1,393.770	1,830.149	-	1,830.149	150.218	367.400	3,479.047	0.000	0.000	18,405.554
• SCN/3036: LPD	53.682	17.739	16.520	-	16.520	0.000	0.000	0.000	0.000	0.000	21,413.011
• O&MN/1C1C/0702228N: O&MN AMDR	29.023	36.175	44.658	-	44.658	64.498	60.925	62.207	63.109	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The AN/SPY-6(V) Advanced Radars Acquisition Strategy (AS) supports current and future variants to reflect a Family of Radars (FoR) nomenclature AN/SPY-6(V). This includes new construction DDG 51 Flight (FLT) III units beyond FY 2020, backfit to the modernization effort for DDG 51 FLT IIA units, and Enterprise Air Surveillance Radar (EASR) for the new construction and modernization of aircraft carriers and large deck amphibious ships. Given the software and hardware commonality between the AN/SPY-6(V) FoR, Program Executive Office (PEO) Integrated Warfare Systems (IWS) 2.0 will leverage AN/SPY-6(V) FoR contracts to achieve economies of scale in both production and sustainment efforts. This AS lays out strategies for the Production and Deployment phases and beyond. The AN/SPY-6(V) Hardware Production											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System	Project (Number/Name) 3186 / Air and Missile Defense Radar
<p>&amp; Sustainment (HP&amp;S) contract for production units FY2021-FY2025 includes AN/SPY-6(V)1, AN/SPY-6(V)2, AN/SPY-6(V)3, and AN/SPY-6(V)4 and was awarded in FY2022 after a full and open competition leveraging the Technical Data Package (TDP) and data rights obtained through the AMDR EMD/LRIP 1 and EASR EMD/LRIP contracts. The AN/SPY-6(V) Design Agent (DA) Integration and Production Support (I&amp;PS) contract will provide DA support for continued combat system integration and test, sustaining engineering, training, software maintenance, interim depot maintenance support, and field engineering services on a sole source basis from the current system integrator, Raytheon IDS. A follow-on AN/SPY-6(V) DA contract will be competed under full and open competition.</p>		

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604522N / Air &amp; Missile Defense Radar (AMDR) System

## Project (Number/Name)

3186 / Air and Missile Defense Radar

## Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Manufacturing Development/Engineering Services	C/CPIF	Raytheon : Marlborough, MA	340.119	10.541	Dec 2021	0.000		0.000		-		0.000	0.000	350.660	-
Integration and Production Support	SS/CPFF	Raytheon : Marlborough, MA	72.961	54.021	Nov 2021	62.902	Nov 2022	62.839	Oct 2023	-		62.839	Continuing	Continuing	Continuing
Technology Development	C/FPIF	Lockheed Martin : Moorestown, NJ	0.024	0.000		0.000		0.000		-		0.000	0.000	0.024	-
Systems Engineering	C/CPIF	Lockheed Martin : Moorestown, NJ	0.000	0.000		1.000	Mar 2023	3.334	Jan 2024	-		3.334	Continuing	Continuing	Continuing
<b>Subtotal</b>			413.104	64.562		63.902		66.173		-		66.173	Continuing	Continuing	N/A

## Remarks

- 1) FY23 to FY24 increase due to ramp up of ADR (software development and LM Combat System planning) and Backfit (software development and test planning) efforts.  
 2) Since the FY23 budget request, FY23 funding increased primarily due to additional In-Plant Testing, Software Development, and Combat System Integration efforts.

## Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	MIPR	GTRI : Atlanta, GA	1.054	0.000		0.000		0.000		-		0.000	0.000	1.054	-
Systems Engineering	SS/CPFF	JHU/APL : Laurel, MD	24.962	5.645	Dec 2021	5.267	Nov 2022	4.607	Nov 2023	-		4.607	Continuing	Continuing	Continuing
Systems Engineering	MIPR	MIT : Cambridge, MD	4.721	0.955	Nov 2021	2.372	Nov 2022	1.865	Nov 2023	-		1.865	Continuing	Continuing	Continuing
Systems Engineering	WR	NRL : Washington, DC	3.445	0.578	Nov 2021	0.364	Nov 2022	0.159	Nov 2023	-		0.159	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC/CR : Crane, IN	4.776	0.947	Nov 2021	0.261	Oct 2022	0.217	Nov 2023	-		0.217	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC/DD : Dahlgren, VA	13.266	3.592	Oct 2021	2.586	Oct 2022	4.299	Nov 2023	-		4.299	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System				Project (Number/Name) 3186 / Air and Missile Defense Radar					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC/PHD : Port Hueneme, CA	3.238	0.081	Oct 2021	0.492	Oct 2022	1.272	Nov 2023	-		1.272	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	SPA (Bridge) : Washington, DC	6.147	0.000		0.000		0.000		-		0.000	0.000	6.147	-
Systems Engineering	MIPR	ARL : Adelphi, MD	0.883	0.000		0.000		0.000		-		0.000	0.000	0.883	-
Systems Engineering	WR	NSWC/CD : Carderock, MD	0.281	0.027	Oct 2021	0.000		0.000		-		0.000	0.000	0.308	-
Systems Engineering	WR	NSWC/Corona : Corona, CA	0.486	0.000		0.000		0.000		-		0.000	0.000	0.486	-
Systems Engineering	Allot	DISA : Scott AFB, Illinois	0.032	0.017	Nov 2021	0.025	Oct 2022	0.026	Nov 2023	-		0.026	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC IH : Indian Head, MD	0.668	0.000		0.000		0.000		-		0.000	0.000	0.668	-
Systems Engineering	SS/FFP	Northrop Grumman : Baltimore, MD	0.391	0.000		0.000		0.000		-		0.000	0.000	0.391	-
Systems Engineering	C/FFP	DRS Power & Control Technologies, Inc. : Milwaukee, WI	0.214	0.000		0.000		0.000		-		0.000	0.000	0.214	-
Systems Engineering	C/CPIF	SPA : Washington, DC	2.724	0.799	Nov 2021	1.142	Nov 2022	1.029	Nov 2023	-		1.029	Continuing	Continuing	Continuing
Systems Engineering	WR	NSMA : Washington, DC	1.123	0.383	Nov 2021	0.580	Apr 2023	0.441	Nov 2023	-		0.441	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	BAH : Washington, DC	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			68.411	13.024		13.089		13.915		-		13.915	Continuing	Continuing	N/A
Remarks															
1) FY23 to FY24 increase primarily due to increased ADR and Backfit efforts at NSWC DD and NSWC PHD.															
2) Since the FY23 budget request, FY23 funding decreased due to removing funding associated with Non-Recurring Engineering for stand up of Software Support activity at NSWC Dahlgren.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System				Project (Number/Name) 3186 / Air and Missile Defense Radar					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	COMOPTEVFOR : Norfolk, VA	1.232	0.000		0.000		0.000		-		0.000	0.000	1.232	-
Developmental Test & Evaluation (DT&E)	MIPR	GTRI : Atlanta, GA	0.668	0.082	Jan 2022	0.000		0.000		-		0.000	0.000	0.750	-
Developmental Test & Evaluation (DT&E)	SS/CPFF	JHU/APL : Laurel, MD	19.011	0.062	Dec 2021	0.079	Nov 2022	0.062	Nov 2023	-		0.062	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	MIPR	MIT : Cambridge, MD	0.311	0.000		0.000		0.000		-		0.000	0.000	0.311	-
Developmental Test & Evaluation (DT&E)	WR	NAWC PM : Pt. Mugu, CA	6.879	0.042	Aug 2022	0.104	Jan 2023	0.082	Nov 2023	-		0.082	0.000	7.107	-
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	5.477	0.514	Nov 2021	0.691	Oct 2022	0.546	Nov 2023	-		0.546	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC/DD : Dahlgren, VA	6.037	0.280	Oct 2021	0.953	Oct 2022	1.112	Nov 2023	-		1.112	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC/PHD : Port Hueneme, CA	8.237	0.313	Oct 2021	0.696	Nov 2022	0.550	Nov 2023	-		0.550	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	PMRF : Kekaha, HI	13.234	2.478	Nov 2021	3.481	Oct 2022	3.923	Nov 2023	-		3.923	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPIF	SPA (Bridge) : Washington, DC	3.043	0.000		0.000		0.000		-		0.000	0.000	3.043	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC/PHD WS : Port Hueneme, CA	92.377	0.000		0.000		0.000		-		0.000	0.000	92.377	-
Developmental Test & Evaluation (DT&E)	WR	NSWC Corona : Corona, CA	5.786	0.302	Oct 2021	0.000		0.000		-		0.000	0.000	6.088	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	CNA-ONR : Arlington, VA	0.157	0.000		0.000		0.000		-		0.000	0.000	0.157	-



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Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System				Project (Number/Name) 3186 / Air and Missile Defense Radar					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/BA	MDA : Redstone Arsenal, AL	1.663	0.000		0.000		0.000		-		0.000	0.000	1.663	-
Developmental Test & Evaluation (DT&E)	C/CPIF	SAIC : Andover, MA	0.639	0.167	Dec 2021	0.000		0.000		-		0.000	0.000	0.806	-
Developmental Test & Evaluation (DT&E)	MIPR	DOI : Boise, ID	3.620	0.463	May 2022	0.000		0.000		-		0.000	0.000	4.083	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC Crane : Crane, IN	0.686	0.000		0.000		0.000		-		0.000	0.000	0.686	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	MIPR	AFSEO : Eglin AFB, FL	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	FRCE - PMA 226 : Cherry Point, NC	0.005	0.000		0.000		0.000		-		0.000	0.000	0.005	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NUWC KP : Keyport, WA	0.367	0.000		0.000		0.000		-		0.000	0.000	0.367	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	COMNAVAIRPAC : San Diego, CA	0.244	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC CD : Carderock, MD	1.051	0.000		0.035	Feb 2023	0.029	Nov 2023	-		0.029	0.000	1.115	-
Developmental Test & Evaluation (DT&E)	MIPR	AFRL : Kirtland AFB, NM	0.341	0.004	Feb 2022	0.000		0.000		-		0.000	0.000	0.345	-
Developmental Test & Evaluation (DT&E)	C/CPIF	SPA : Washington, DC	2.427	0.649	Dec 2021	0.648	Nov 2022	0.493	Nov 2023	-		0.493	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	Civil Air Patrol : Montgomery, AL	0.024	0.015	Jan 2022	0.021	Dec 2022	0.016	Nov 2023	-		0.016	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	SCSC Wallops : Wallops Island, VA	0.330	0.056	Jun 2022	0.650	Oct 2022	0.540	Nov 2023	-		0.540	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System				Project (Number/Name) 3186 / Air and Missile Defense Radar					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAWCCL : Clear Lake, CA	0.432	0.000		0.000		0.000		-		0.000	0.000	0.432	-
Developmental Test & Evaluation (DT&E)	C/CPFF	Global PCCI (GPC) : Irvine, CA	0.000	0.018	Mar 2022	0.000		0.000		-		0.000	0.000	0.018	-
Developmental Test & Evaluation (DT&E)	MIPR	HPCMP : Vicksburg, MS	0.000	0.000		0.064	Nov 2022	0.051	Mar 2024	-		0.051	0.000	0.115	-
Subtotal			174.289	5.445		7.422		7.404		-		7.404	Continuing	Continuing	N/A
Remarks															
1) Since the FY23 budget request, FY23 funding decreased primarily due to lower than estimated Land Based Test costs (NSWC PHD and SCSC for EASR / DOI and NSWC Corona for AMDR).															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Management Services	C/CPIF	SPA (Bridge) : Washington, DC	5.119	0.000		0.000		0.000		-		0.000	0.000	5.119	-
Travel	Sub Allot	PEOIS2 : Washington, DC	0.693	0.092	Jan 2022	0.094	Mar 2023	0.097	Jan 2024	-		0.097	Continuing	Continuing	Continuing
Support Management Services	WR	NSWC/DD : Dahlgren, VA	2.531	0.078	Oct 2021	0.633	Oct 2022	0.645	Nov 2023	-		0.645	Continuing	Continuing	Continuing
Support Management Services	C/CPFF	TMB-PSS : Washington, DC	0.435	0.076	Feb 2022	0.109	Mar 2023	0.083	Nov 2023	-		0.083	Continuing	Continuing	Continuing
Support Management Services	C/CPFF	CACI-PSS : Washington, DC	0.925	0.000		0.000		0.000		-		0.000	0.000	0.925	-
Support Management Services	C/CPFF	STRATEGIC INSIGHT : Arlington, VA	0.204	0.028	Dec 2021	0.049	Dec 2022	0.050	Dec 2023	-		0.050	Continuing	Continuing	Continuing
Support Management Services	C/CPIF	UNC : Chapel Hill, NC	0.106	0.000		0.000		0.000		-		0.000	0.000	0.106	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System						Project (Number/Name) 3186 / Air and Missile Defense Radar			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Management Services	WR	NSWC/CD : Carderock, MD	0.076	0.000		0.000		0.000		-		0.000	0.000	0.076	-
Support Management Services	C/CPIF	SPA : Washington, DC	0.783	0.951	Nov 2021	1.860	Nov 2022	1.794	Nov 2023	-		1.794	Continuing	Continuing	Continuing
Support Management Services	C/CPFF	BAH-PSS : Washington, DC	0.000	0.270	Dec 2021	0.183	Mar 2023	0.146	Dec 2023	-		0.146	Continuing	Continuing	Continuing
Subtotal			10.872	1.495		2.928		2.815		-		2.815	Continuing	Continuing	N/A
Remarks															
1) Since the FY23 budget request, FY23 funding increased primarily due to additional cost estimating, contract management, program management, and technical oversight efforts.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			666.676	84.526		87.341		90.307		-		90.307	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

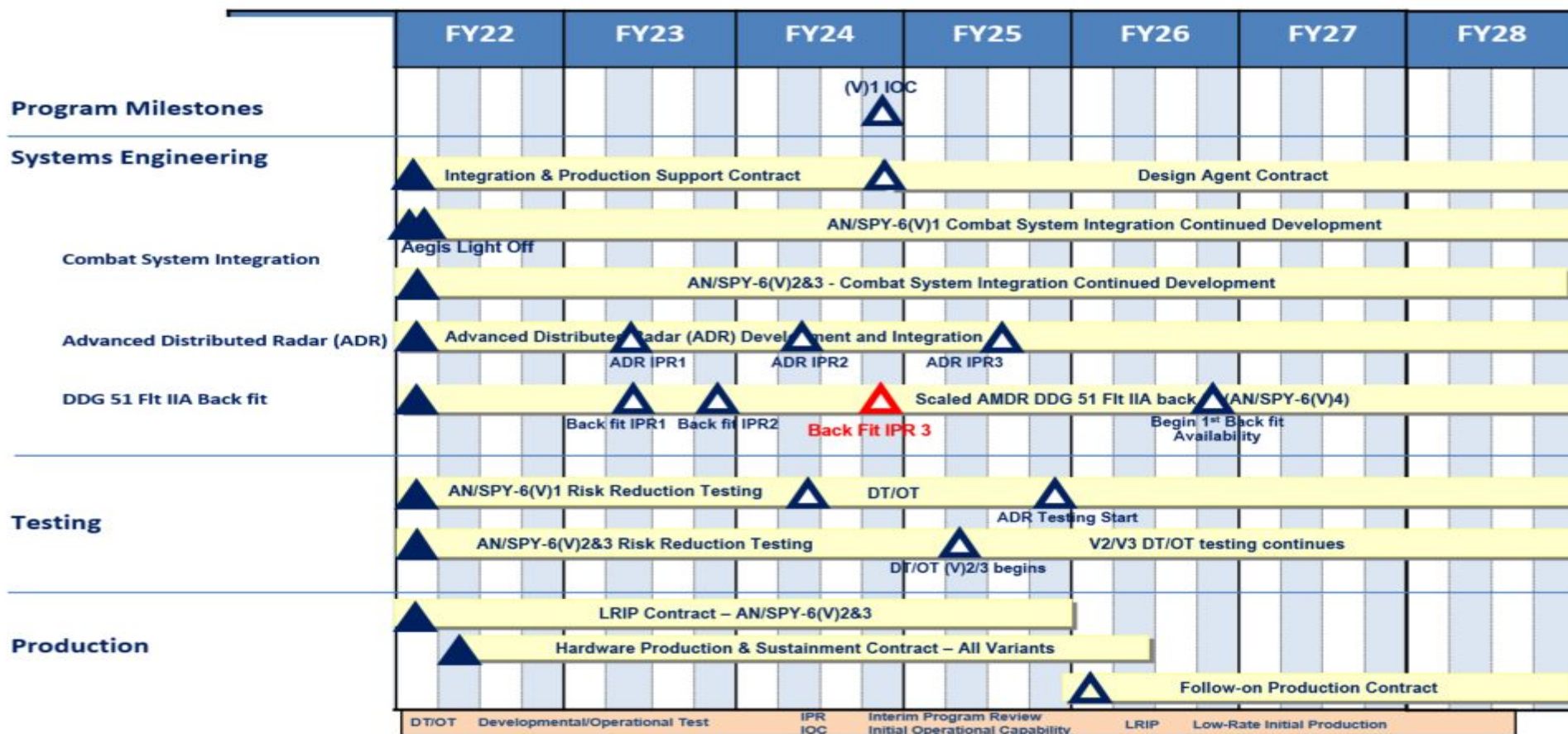
1319 / 5

R-1 Program Element (Number/Name)

PE 0604522N / Air & Missile Defense Radar (AMDR) System

Project (Number/Name)

3186 / Air and Missile Defense Radar



NOTE: Production contract timelines reflect when options are exercised; actual production may extend beyond the end of each bar.

Changes:

- Added Back Fit IPR 3

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

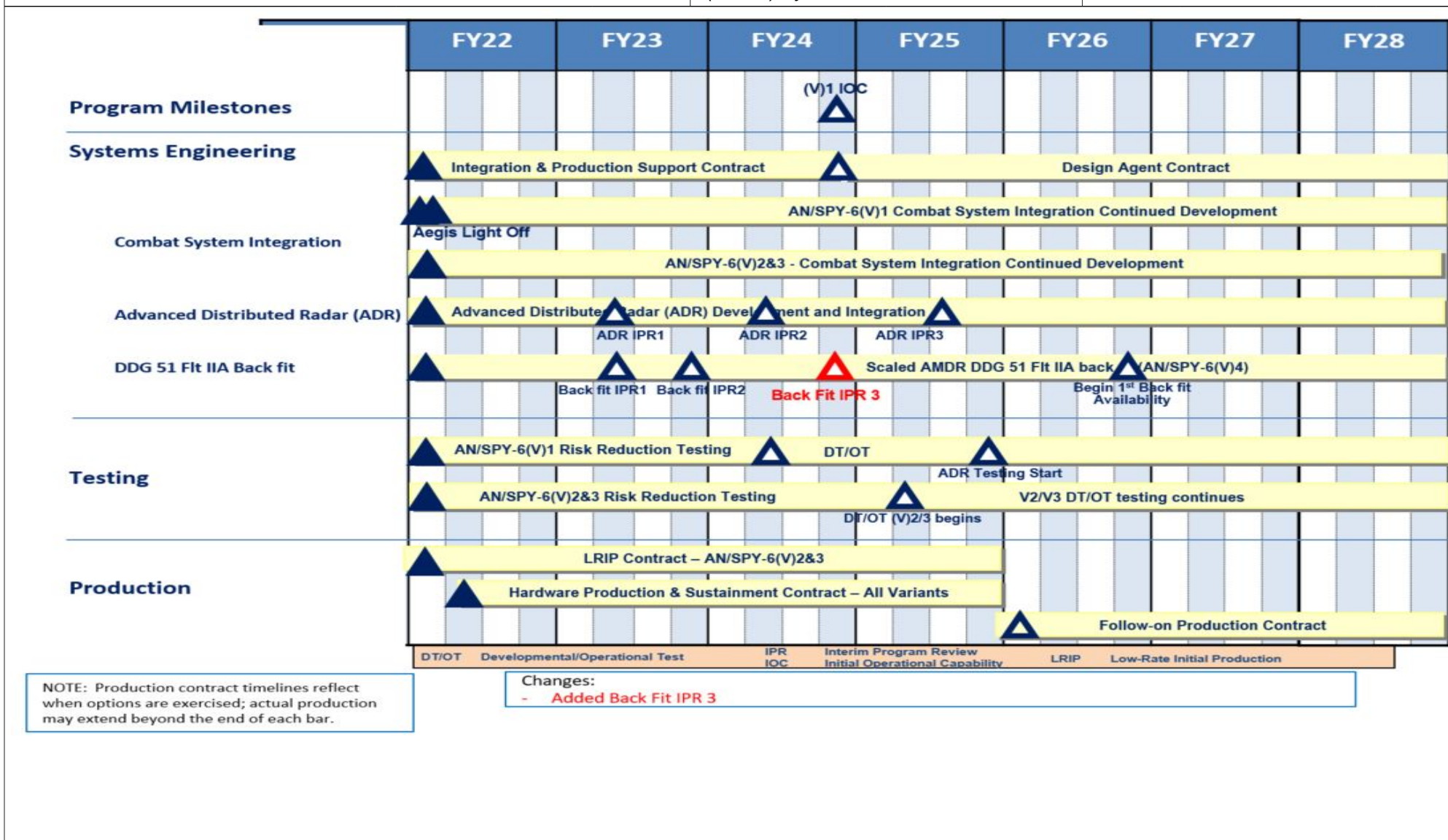
1319 / 5

R-1 Program Element (Number/Name)

PE 0604522N / Air & Missile Defense Radar (AMDR) System

Project (Number/Name)

3186 / Air and Missile Defense Radar



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604522N / Air & Missile Defense Radar (AMDR) System	<b>Project (Number/Name)</b> 3186 / Air and Missile Defense Radar	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3186</b>				
Integration and Production Support Contract	1	2022	4	2024
AN/SPY-6(V)1 Combat System Integration Continued Development	1	2022	4	2028
DDG125 Aegis Light Off	1	2022	1	2022
AN/SPY-6(V) 2&3 Combat System Integration Continued Development	1	2022	4	2028
Advanced Distributed Radar (ADR) Development and Integration	1	2022	4	2028
Scaled AMDR DDG51 FLT IIA Backfit (AN/SPY-6(V)4)	1	2022	4	2028
AN/SPY-6(V)1 Risk Reduction Testing	1	2022	2	2024
AN/SPY-6(V)2&3 Risk Reduction Testing	1	2022	4	2028
LRIP Contract - AN/SPY-6(V)2&3	1	2022	4	2025
Hardware Production and Sustainment Contract	2	2022	4	2025
ADR IPR 1	2	2023	2	2023
Back Fit IPR 1	2	2023	2	2023
Back Fit IPR 2	4	2023	4	2023
ADR IPR 2	2	2024	2	2024
AN/SPY-6(V)1 DT/OT	2	2024	4	2028
V1 IOC	4	2024	4	2024
Design Agent Contract	4	2024	4	2028
Back Fit IPR 3	4	2024	4	2024
DT/OT V2/V3	2	2025	4	2028
ADR IPR 3	3	2025	3	2025
ADR Testing Starts	4	2025	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604522N / Air & Missile Defense Radar (AMDR) System		Project (Number/Name) 3186 / Air and Missile Defense Radar	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Follow-on Production Contract		1	2026	4	2028
Begin 1st Back Fit Installation		4	2026	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604530N / Advanced Arresting Gear (AAG)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	348.041	0.146	0.151	10.658	-	10.658	9.228	14.230	10.721	22.227	0.000	415.402
2367: Advanced Arresting Gear	348.041	0.146	0.151	10.658	-	10.658	9.228	14.230	10.721	22.227	0.000	415.402
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 529												
<p><b>Note</b></p> <p>FY18 and prior year funding for Advanced Arresting Gear (AAG) is funded under Shipboard Aviation Systems program element 0604512N, CV/CVN Launch and Recover project unit 2232.</p> <p><b>A. Mission Description and Budget Item Justification</b></p> <p>The Advanced Arresting Gear (AAG) program designs, develops, tests and fields an aircraft arrestment system to replace the legacy Mark 7 arresting gear. AAG systems will be installed on all new construction aircraft carriers. AAG will provide the U.S. Navy with improved operational capability, while reducing operating and support costs. The AAG system will recover all existing and projected carrier based tail hook-equipped air vehicles well into the 21st century.</p> <p>The AAG program will undergo future development efforts for system improvements. AAG Software Stability development effort will address systemic software stability and reliability issues documented in a System Safety Risk Assessment (SSRA) for AAG software, and in a separate investigative report by a NAVAIR Independent Review Team (IRT). The development effort will mitigate specific findings related to non-deterministic behavior and latency of the software that contribute to the SSRA Hazard rating (1D-Serious). Per IRT report recommendations, the effort will address findings via software modernization and re-architecture, with new software adhering to improved Level or Rigor (LOR) standards and processes. A multi-year, competitively sourced software development effort will begin in FY 2024 with evaluation of existing software deficiencies, followed by architecture and design, coding, and test through FY 2028.</p> <p>This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604530N / Advanced Arresting Gear (AAG)			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.147	0.151	0.169	-	0.169
Current President's Budget	0.146	0.151	10.658	-	10.658
Total Adjustments	-0.001	0.000	10.489	-	10.489
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.001	0.000			
• Program Adjustments	0.000	0.000	10.432	-	10.432
• Rate/Misc Adjustments	0.000	0.000	0.057	-	0.057
<b><u>Change Summary Explanation</u></b>					
FY 2024 increase to support AAG Software Stability Development.					
Technical: N/A					
Schedule:					
CVN78/CVN79: Events were updated to reflect the most current Post Delivery Test & Trials (PDT&T) ship schedule.					
Software Stability was added in 1Q FY 2024 - 4Q FY 2028					
Electrical Isolation was added in 1Q FY 2026 - 4Q FY 2028					
Mod-II WT DLs start date moved from 3Q FY 2022 to 3Q FY 2023 and end date moved from 3Q FY 2022 to 4Q FY 2023.					
Depot Facility BCA start date moved from 1Q FY 2023 to 1Q FY 2025 and end date moved from 4Q FY 2023 to 2Q FY 2025.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023																																													
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604530N / Advanced Arresting Gear (AAG)				Project (Number/Name) 2367 / Advanced Arresting Gear																																													
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost																																										
2367: Advanced Arresting Gear	348.041	0.146	0.151	10.658	-	10.658	9.228	14.230	10.721	22.227	0.000	415.402																																										
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-																																												
Project MDAP/MAIS Code: 529																																																						
<p><b>Note</b></p> <p>Advanced Arresting Gear (AAG) was previously funded under Shipboard Aviation Systems program element 0604512N, CV/CVN Launch and Recovery project unit 2232 in FY 2018 and prior.</p> <p><b>A. Mission Description and Budget Item Justification</b></p> <p>The Advanced Arresting Gear (AAG) program will design, develop, test and field an aircraft arrestment system to replace the legacy Mark 7 arresting gear. AAG systems will be installed on all new construction aircraft carriers. AAG will provide the U.S. Navy with improved operational capability, while reducing operating and support costs. The AAG system will recover all existing and projected carrier based tail hook-equipped air vehicles well into the 21st century.</p> <p>The AAG program will undergo future development efforts for system improvements. AAG Software Stability development effort will address systemic software stability and reliability issues documented in a System Safety Risk Assessment (SSRA) for AAG software, and in a separate investigative report by a NAVAIR Independent Review Team (IRT). The development effort will mitigate specific findings related to non-deterministic behavior and latency of the software that contribute to the SSRA Hazard rating (1D-Serious). Per IRT report recommendations, the effort will address findings via software modernization and re-architecture, with new software adhering to improved Level or Rigor (LOR) standards and processes. A multi-year, competitively sourced software development effort will begin in FY 2024 with evaluation of existing software deficiencies, followed by architecture and design, coding, and test through FY 2028.</p> <p><b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b></p> <table><tr><td></td><td>FY 2022</td><td>FY 2023</td><td>FY 2024 Base</td><td>FY 2024 OCO</td><td>FY 2024 Total</td></tr><tr><td><b>Title:</b> Advanced Arresting Gear (AAG) Product Development</td><td>0.146</td><td>0.151</td><td>10.658</td><td>0.000</td><td>10.658</td></tr><tr><td><b>Articles:</b></td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td><b>FY 2023 Plans:</b> Continue the AAG system refinement and improvement efforts, to include operational test.</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><b>FY 2024 Base Plans:</b> Begin Software Stability Development effort.</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><b>FY 2024 OCO Plans:</b> N/A</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></td><td></td><td></td><td></td><td></td><td></td></tr></table>														FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	<b>Title:</b> Advanced Arresting Gear (AAG) Product Development	0.146	0.151	10.658	0.000	10.658	<b>Articles:</b>	-	-	-	-	-	<b>FY 2023 Plans:</b> Continue the AAG system refinement and improvement efforts, to include operational test.						<b>FY 2024 Base Plans:</b> Begin Software Stability Development effort.						<b>FY 2024 OCO Plans:</b> N/A						<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total																																																	
<b>Title:</b> Advanced Arresting Gear (AAG) Product Development	0.146	0.151	10.658	0.000	10.658																																																	
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<b>FY 2024 Base Plans:</b> Begin Software Stability Development effort.																																																						
<b>FY 2024 OCO Plans:</b> N/A																																																						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>																																																						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604530N / <i>Advanced Arresting Gear (AAG)</i>			<b>Project (Number/Name)</b> 2367 / <i>Advanced Arresting Gear</i>			
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
					<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>		
The increase from FY 2023 to FY 2024 is due to the AAG Software Stability upgrade.											
<b>Accomplishments/Planned Programs Subtotals</b>					0.146	0.151	10.658	0.000	10.658		
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/4217: <i>Advanced Arresting Gear (AAG)</i>	22.265	13.544	11.930	-	11.930	3.253	0.406	5.772	10.682	10.419	121.009
• SCN/2001: <i>Carrier Replacement Program</i>	1,353.205	1,927.580	1,739.896	-	1,739.896	2,416.717	1,159.211	1,842.376	2,119.562	12,208.659	56,159.211
• SCN/2004: <i>CVN-81</i>	1,287.719	1,052.024	800.492	-	800.492	666.045	1,922.144	2,011.766	1,724.982	0.000	12,929.104
<b>Remarks</b>											
<b>D. Acquisition Strategy</b> The Navy competitively awarded two Cost Plus Fixed Fee Technical Development phase contracts to develop the Advanced Arresting Gear (AAG) system. Upon completion of the Preliminary Design and Integrated Baseline reviews, the Navy awarded a single Cost Plus Award Fee option to General Atomics for the System Development and Demonstration (SDD) phase to develop and demonstrate a production representative AAG at the NAVAIR Lakehurst Jet Car Track Site and Runway Arrested Landing Site. AAG is transitioning from the design and development phase into concurrent production and sustainment phase.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604530N / Advanced Arresting Gear (A AG)				Project (Number/Name) 2367 / Advanced Arresting Gear					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HW Development	WR	NAWCAD : Lakehurst, NJ	42.307	0.089	Nov 2021	0.093	Nov 2022	0.000		-		0.000	0.434	42.923	-
Systems Engineering	WR	NAWCAD : Lakehurst, NJ	11.907	0.057	Nov 2021	0.058	Nov 2022	0.000		-		0.000	0.277	12.299	-
Primary SW Development - Software Stability	C/CPFF	TBD : TBD	0.000	0.000		0.000		8.974	Nov 2023	-		8.974	19.075	28.049	-
Prior Year Cost No Longer Funded in FYDP	Various	Various : Various	202.935	0.000		0.000		0.000		-		0.000	0.000	202.935	-
Subtotal			257.149	0.146		0.151		8.974		-		8.974	19.786	286.206	N/A
Remarks The increase from FY 2023 to FY 2024 is due to the AAG Software Stability upgrade.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD : Lakehurst, NJ	16.983	0.000		0.000		1.684	Nov 2023	-		1.684	10.925	29.592	-
Prior Year Cost No Longer Funded in FYDP	Various	Various : Various	28.477	0.000		0.000		0.000		-		0.000	0.000	28.477	-
Subtotal			45.460	0.000		0.000		1.684		-		1.684	10.925	58.069	N/A
Remarks The increase from FY 2023 to FY 2024 is due to the AAG Software Stability upgrade.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604530N / Advanced Arresting Gear (AAG)						Project (Number/Name) 2367 / Advanced Arresting Gear					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	44.679	0.000		0.000		0.000		-		0.000	0.000	44.679	-		
Subtotal			44.679	0.000		0.000		0.000		-		0.000	0.000	44.679	N/A		
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Prior Year Cost No Longer Funded in FYDP	Various	Various : Various	0.753	0.000		0.000		0.000		-		0.000	0.000	0.753	-		
Subtotal			0.753	0.000		0.000		0.000		-		0.000	0.000	0.753	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			348.041	0.146		0.151		10.658		-		10.658	30.711	389.707	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

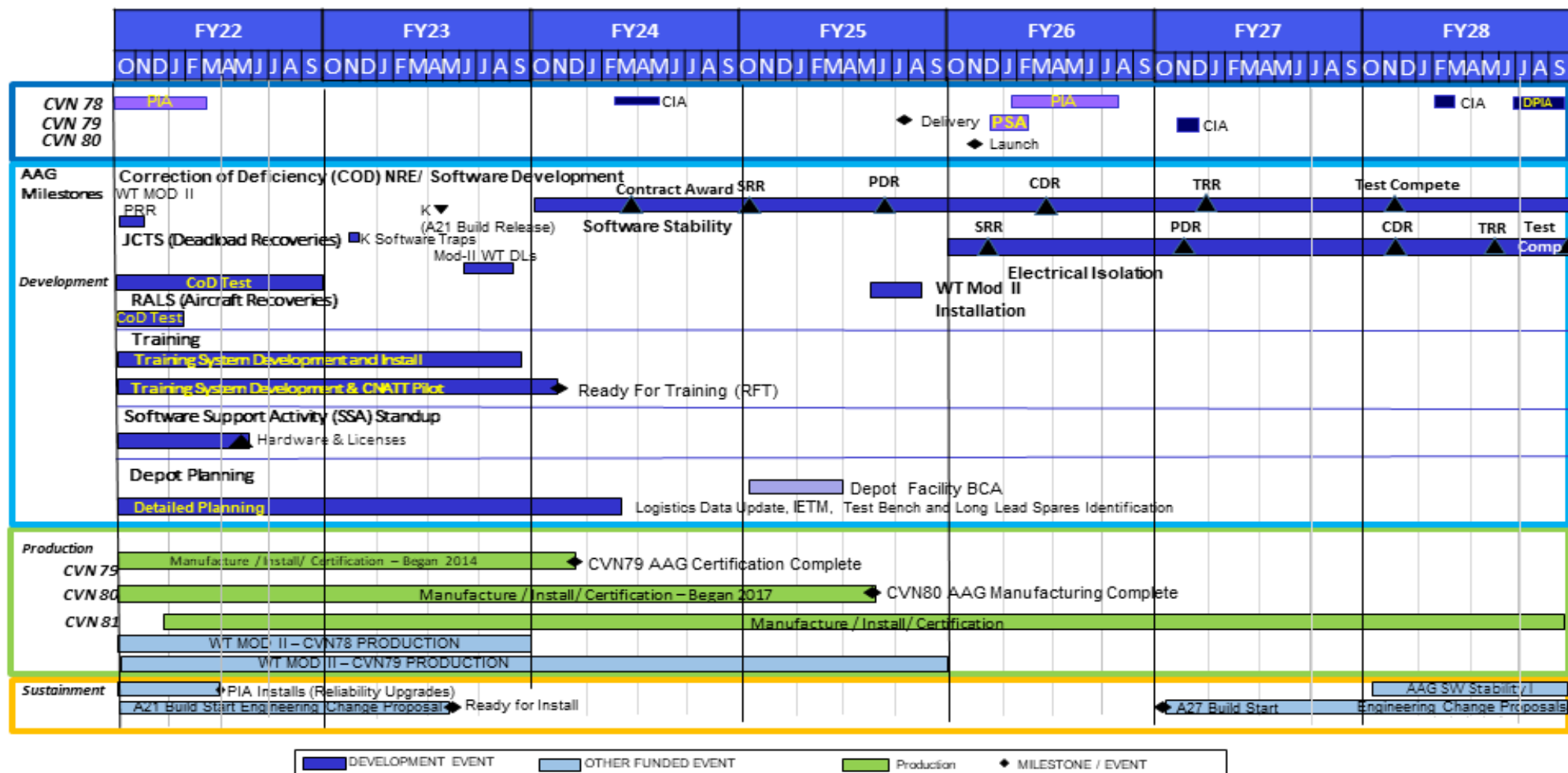
1319 / 5

R-1 Program Element (Number/Name)

PE 0604530N / Advanced Arresting Gear (AAG)

Project (Number/Name)

2367 / Advanced Arresting Gear



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604530N / Advanced Arresting Gear (AAG)	Project (Number/Name) 2367 / Advanced Arresting Gear	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ADVANCED ARRESTING GEAR (AAG)				
System Development: Software Stability	1	2024	4	2028
System Development: Electrical Isolation	1	2026	1	2028
Training: Training System / Schoolhouse Curriculum Development	1	2022	4	2023
Training: Ready for Training (RFT)	1	2024	1	2024
Software Support Activity (SSA): Software Support Activity (SSA)	1	2022	3	2022
Depot Planning: Depot Planning	1	2022	2	2024
Test & Evaluation: Technical Evaluation: Jet Car Test Site (JCTS) CoD Test	1	2022	4	2022
Test & Evaluation: Technical Evaluation: Runway Arrested Landing Site Test (RALS)	1	2022	2	2022



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604558N / New Design SSN							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	2,932.769	468.358	316.085	234.356	-	234.356	274.988	270.025	265.831	273.298	Continuing	Continuing
1947: New Design SSN HM&E	1,998.123	425.840	267.895	187.282	-	187.282	222.949	219.942	216.650	223.210	Continuing	Continuing
1950: New Design SSN Combat Sys Dev	881.540	35.154	31.365	38.572	-	38.572	43.521	41.411	40.375	41.181	Continuing	Continuing
3062: Submarine Multi-Mission Team Trainer	53.106	7.364	8.325	8.502	-	8.502	8.518	8.672	8.806	8.907	Continuing	Continuing
9999: Congressional Adds	0.000	0.000	8.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.500
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 516												
A. Mission Description and Budget Item Justification												
FY 2024 funding provides for the continued execution of Virginia Class Submarine Undersea Dominance Payload Integration (UDPI) (i.e., Advanced Payloads), Advanced Acoustic Sensors, and future blocks concept designs. FY 2024 will support the evaluation and development of capabilities/technologies for inclusion in the Virginia Class Block VI technical baseline. Funds will be executed at the Virginia Class design yard and numerous sub-vendors and warfare centers designing and developing critical, complex ship components necessary for integrating advanced Block VI capabilities into the baseline class design. FY 2024 decreases in Proj 1947 reflect the reprioritization of design efforts supporting future undersea warfare capabilities and the planned transition of effort from design to construction.												
The U.S. Navy must maintain a submarine fleet that is of sufficient capability and numbers to defend American interests. The VIRGINIA Class Submarine, formerly the New Attack Submarine (New SSN), is being designed to fulfill this need. It will counter potential threats in a multi- mission capable submarine that has the ability to provide covert, sustained combat presence in denied waters. The primary goal of the program is to develop an affordable yet capable submarine by evaluating a broad range of system and technology alternatives, and pursuing significant capability and improved performance enhancements while managing technical risk. This Program Element (PE) provides the technology, prototype components, and systems engineering needed to design and construct the VIRGINIA Class Submarine and build its Hull, Mechanical and Electrical (HM&E) systems and Command, Control, Communications, and Intelligence (C3I) System. This PE directly supports the following VIRGINIA Class Submarine missions: (1) covert strike warfare (STRIKE); (2) anti-submarine warfare (ASW); (3) covert intelligence collection/surveillance (ISR), indication and warning (I&W), and electronic warfare (EW); (4) anti-surface ship warfare (ASUW); (5) special warfare; (6) covert mine warfare; and (7) battle group support.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604558N / New Design SSN			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	486.938	307.585	272.911	-	272.911
Current President's Budget	468.358	316.085	234.356	-	234.356
Total Adjustments	-18.580	8.500	-38.555	-	-38.555
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	8.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.025	0.000			
• SBIR/STTR Transfer	-18.555	0.000			
• Program Adjustments	0.000	0.000	-40.119	-	-40.119
• Rate/Misc Adjustments	0.000	0.000	1.564	-	1.564
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: 9999: Congressional Adds					
Congressional Add: Precision maneuvering units					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604558N / <i>New Design SSN</i>				Project (Number/Name) 1947 / <i>New Design SSN HM&amp;E</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1947: <i>New Design SSN HM&amp;E</i>	1,998.123	425.840	267.895	187.282	-	187.282	222.949	219.942	216.650	223.210	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 516												

**A. Mission Description and Budget Item Justification**

FY 2024 decreases in Proj 1947 reflect the reprioritization of design efforts supporting future undersea warfare capabilities and the planned transition of effort from design to construction. FY 2024 funding provides for the continued execution of Virginia Class Submarine Undersea Dominance Payload Integration (UDPI) (i.e., Advanced Payloads), Advanced Acoustic Sensors, and future blocks concept designs. FY 2024 will support the development of capabilities/technologies for inclusion in the Virginia Class Block VI technical baseline. Funds will be executed at the Virginia Class design yard and numerous sub-vendors and warfare centers designing and developing critical, complex ship components necessary for integrating Block VI capabilities into the baseline class design.

This project encompasses all the ship system development efforts for the Virginia Class Submarine and the Technology Insertion Program for reducing costs and upgrading performance of future hulls by virtue of improvements in ship design and systems. Technology development implementation and logistics for developmental items, and Virginia Class test & evaluation are included. The thrust of these efforts will be to develop and apply multiple advanced system technologies which are integrated into the design of the Virginia Class Submarine. Technologies developed in this program will be considered for applicability to the COLUMBIA Program (CLB) for commonality opportunities. New technologies are being transitioned from industry and government research and development programs where doing so offers substantial performance improvement and/or affordability payoffs. Transition opportunities include those from the Defense Advanced Research Projects Agency (DARPA) and Office of Naval Research (ONR) Future Naval Capabilities Program.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> New Design SSN HM&E	413.160	253.873	176.313	0.000	176.313
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
-Continue Virginia Class Submarine Undersea Dominance Payload Integration (UDPI) design efforts to modify the current host ship systems (to include electrical, hydraulic, fluid systems, safety and security testing) in support of launching payloads from multiple different hull/ocean interfaces. Efforts include non-recurring engineering (NRE) to support hosting of various advanced payloads, vendor component development, specification and diagram changes, design disclosure, and ILS product reviews - all of which are required to support integrating the identified advanced payload systems into the technical baseline for Block V and Block VI insertion.					
-Continue development of HM&E systems concepts technologies, including obsolescence redesign and performance improvement, for integration into Virginia Class Block VI Technical Baseline.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604558N / New Design SSN		Project (Number/Name) 1947 / New Design SSN HM&E		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>-Continue transition of products from the Office of Naval Research Manufacturing Technology Program (MANTECH) and transition of products from ONR FNC Programs.</p> <p>-In accordance with the TSEP, preliminary design of advanced capability insertions in support of establishing the Block VI technical baseline. Efforts will include:</p> <p>-Preliminary design, integration and critical item testing of components for Advanced Acoustic Sensors and organic advanced undersea warfare capabilities;</p> <p>-Preliminary design and integration of host ship modifications to support interaction and hosting of multiple types of UUVs via multiple ocean interfaces;</p> <p>-The continued evaluation, maturation, and integration of these candidate capabilities will support readiness for Block VI construction start.</p> <p>-Further details available at the appropriate classification level.</p> <p><b>FY 2024 Base Plans:</b></p> <p>-Continue Virginia Class Submarine Undersea Dominance Payload Integration (UDPI) design efforts to modify the current host ship systems (to include electrical, hydraulic, fluid systems, safety and security testing) in support of launching payloads from multiple different hull/ocean interfaces. Efforts include non-recurring engineering (NRE) to support hosting of various advanced payloads, vendor component development, specification and diagram changes, design disclosure, and ILS product reviews - all of which are required to support integrating the identified advanced payload systems into the technical baseline for Block V and Block VI insertion.</p> <p>-Continue development of HM&amp;E systems concepts technologies, including obsolescence redesign and performance improvement, for integration into Virginia Class Block VI Technical Baseline.</p> <p>-Continue transition of products from the Office of Naval Research Manufacturing Technology Program (MANTECH) and transition of products from ONR FNC Programs.</p> <p>-Continue design, integration and critical item testing of components for Advanced Acoustic Sensors and organic advanced undersea warfare capabilities;</p> <p>-Continue design and integration of host ship modifications to support interaction and hosting of multiple types of UUVs via multiple ocean interfaces;</p> <p>-The continued evaluation, maturation, and integration of these candidate capabilities will support readiness for Block VI construction start.</p> <p>-Further details available at the appropriate classification level.</p> <p><b>FY 2024 OCO Plans:</b></p>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604558N / New Design SSN		Project (Number/Name) 1947 / New Design SSN HM&E		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 decrease accounts for the reprioritization of design efforts to properly align funds to the Submarine In Service program for investment in early battery failure mitigations for operational submarines. Additionally, this decrease reflects the refinement of scope associated with the establishment of the Block VI technical baseline and the planned transition of effort from design to construction.						
Title: TEST AND EVALUATION		12.680	14.022	10.969	0.000	10.969
Articles:		-	-	-	-	-
FY 2023 Plans: -Continue work associated with previous test events (IOT&E, Arctic, Dry-Deck Shelter, Block III FOT&E). This consists of documenting and testing fixes to deficiencies identified during previously completed Developmental and Operational Testing as well as addressing recommendations noted by the Oversight Community from OSD. -Conduct the Hydrodynamic Performance Trial (HPT 2) and Future Naval Capability (FNC) testing on USS SOUTH DAKOTA (SSN 790) that was deferred in FY 2022. -Continue efforts to develop the FOT&E plan, to include the Cybersecurity test strategy, for Block V. The Cybersecurity test strategy will be planned and executed in coordination with the COLUMBIA Class IOT&E Cybersecurity test strategy. -Continue development of the Block V Vulnerability Assessment Report to include all three aspects of Survivability: Susceptibility, Vulnerability, and Recoverability, as well as, the Block V Transient Shock Analysis Verification and Validation to meet the LFT&E legislation mandated in Title 10 USC 2366. -Provide updates to the VA Class Program Protection Plan (PPP) to account for changes to the Cybersecurity Testing Strategy and update to the Platform Level Criticality Analysis. -Support integration of the Conventional Prompt Strike (CPS) Program into our Warfare Requirements and Test plans to meet Class Operational Capabilities.						
FY 2024 Base Plans: -Continue work associated with previous test events (IOT&E, Arctic, Dry-Deck Shelter, Block III FOT&E). This consists of documenting and testing fixes to deficiencies identified during previously completed Developmental and Operational Testing as well as addressing recommendations noted by the Oversight Community from OSD. -Publish the Hydrodynamic Performance Trial (HPT 2) and Future Naval Capability (FNC) testing final reports for USS SOUTH DAKOTA (SSN 790).						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604558N / <i>New Design SSN</i>		<b>Project (Number/Name)</b> 1947 / <i>New Design SSN HM&amp;E</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>-Continue efforts to develop the FOT&amp;E plan, to include the Cybersecurity test strategy, for Block V. The Cybersecurity test strategy will be planned and executed in coordination with the COLUMBIA Class IOT&amp;E Cybersecurity test strategy.</p> <p>-Continue development of the Block V Vulnerability Assessment Report to include all three aspects of Survivability: Susceptibility, Vulnerability, and Recoverability, as well as, the Block V Transient Shock Analysis Verification and Validation Report to meet the LFT&amp;E legislation mandated in Title 10 USC 2366.</p> <p>-Provide updates to the VA Class Program Protection Plan (PPP) to account for changes to the Cybersecurity Testing Strategy and update to the Platform Level Criticality Analysis.</p> <p>- Support integration of the Conventional Prompt Strike (CPS) Program into our Warfare Requirements and Test plans to meet Class Operational Capabilities.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The decrease noted from FY 2023 to FY 2024 represents completion of the testing and evaluation of the testing on the USS SOUTH DAKOTA (SSN 790).</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	425.840	267.895	187.282	0.000	187.282

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• SCN/2013: <i>Virginia Class Submarine</i>	6,339.647	6,864.537	10,513.684	-	10,513.684	10,163.748	8,739.108	8,483.697	7,688.725	10,147.368	167,990.662
• OMN/0204283N: <i>Sub Ops &amp; Safety</i>	8.191	8.624	9.319	-	9.319	9.564	9.742	9.794	9.747	Continuing	Continuing
• OPN/0942: <i>Virginia Class Support Equipment</i>	22.669	32.300	32.076	-	32.076	43.597	52.098	39.771	40.568	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach has facilitated a smoother transition from design to manufacturing and has reduced the number of changes typically encountered during construction of the lead and early follow-on ships. In September 1997, Congress passed a law

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604558N / <i>New Design SSN</i>	Project (Number/Name) 1947 / <i>New Design SSN HM&amp;E</i>
allowing General Dynamics Electric Boat (GDEB) and Northrop Grumman Newport News (NGNN), now Huntington Ingalls Industries - Newport News Shipbuilding (HII-NNS), to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, GDEB remained the design yard for the VIRGINIA Class Submarine and HII-NNS became a part of the IPPD process. The Program Office is currently managing two Multi-Year Procurement (MYP) contracts. One for the Block IV (FY14-18) ships and one for the Block V (FY19-23) ships. All Block I, II and III ships, as well as the first three Block IV ships (SSNs 774-794) have been delivered. The remaining seven Block IV ships are awarded and under construction. The program's fourth MYP (Block V) contract, incorporates Acoustic Superiority (AS) modifications and Virginia Payload Module (VPM).		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604558N / <i>New Design SSN</i>	<b>Project (Number/Name)</b> 1947 / <i>New Design SSN HM&amp;E</i>
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	WR	NSWC : Carderock, MD	289.720	14.534	Oct 2021	14.346	Oct 2022	10.252	Oct 2023	-		10.252	Continuing	Continuing	Continuing
Component Development	WR	NUWC : Newport, RI	132.879	12.182	Oct 2021	12.024	Oct 2022	8.593	Oct 2023	-		8.593	Continuing	Continuing	Continuing
Component Development	WR	NRL : Washington, DC	10.567	0.997	Oct 2021	0.984	Oct 2022	0.703	Oct 2023	-		0.703	Continuing	Continuing	Continuing
Component Development	C/CPFF	Electric Boat : Groton, CT	1,207.384	371.713	Nov 2021	212.963	Nov 2022	147.077	Nov 2023	-		147.077	Continuing	Continuing	Continuing
Component Development	C/CPFF	Progeny Applied : Manassas, VA	7.162	9.027	Dec 2021	8.910	Dec 2022	6.367	Dec 2023	-		6.367	Continuing	Continuing	Continuing
Component Development	SS/CPFF	Applied Research Laboratory : Penn State University	29.958	2.742	Dec 2021	2.706	Dec 2022	1.934	Dec 2023	-		1.934	Continuing	Continuing	Continuing
Component Development	SS/FP	National Shipbuilding Research Program : Not Specified	6.739	0.630	Mar 2022	0.622	Mar 2023	0.445	Mar 2024	-		0.445	Continuing	Continuing	Continuing
Component Development	Various	Miscellaneous : Not Specified	26.901	1.335	Dec 2021	1.318	Dec 2022	0.942	Dec 2023	-		0.942	Continuing	Continuing	Continuing
<b>Subtotal</b>			1,711.310	413.160		253.873		176.313		-		176.313	Continuing	Continuing	N/A

**Remarks**

The FY 2024 decrease accounts for the reprioritization of design efforts to properly align funds to the Submarine In Service program for investment in early battery failure mitigations for operational submarines. Additionally, this decrease reflects the refinement of scope associated with the establishment of the Block VI technical baseline and the planned transition of effort from design to construction.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC : Carderock, MD	98.536	3.677	Nov 2021	4.066	Nov 2022	3.181	Nov 2023	-		3.181	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	WR	NSWC : Carderock, MD	7.362	1.141	Nov 2021	1.262	Nov 2022	0.987	Nov 2023	-		0.987	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NUWC : Newport, RI	141.022	1.762	Nov 2021	1.948	Nov 2022	1.524	Nov 2023	-		1.524	Continuing	Continuing	Continuing



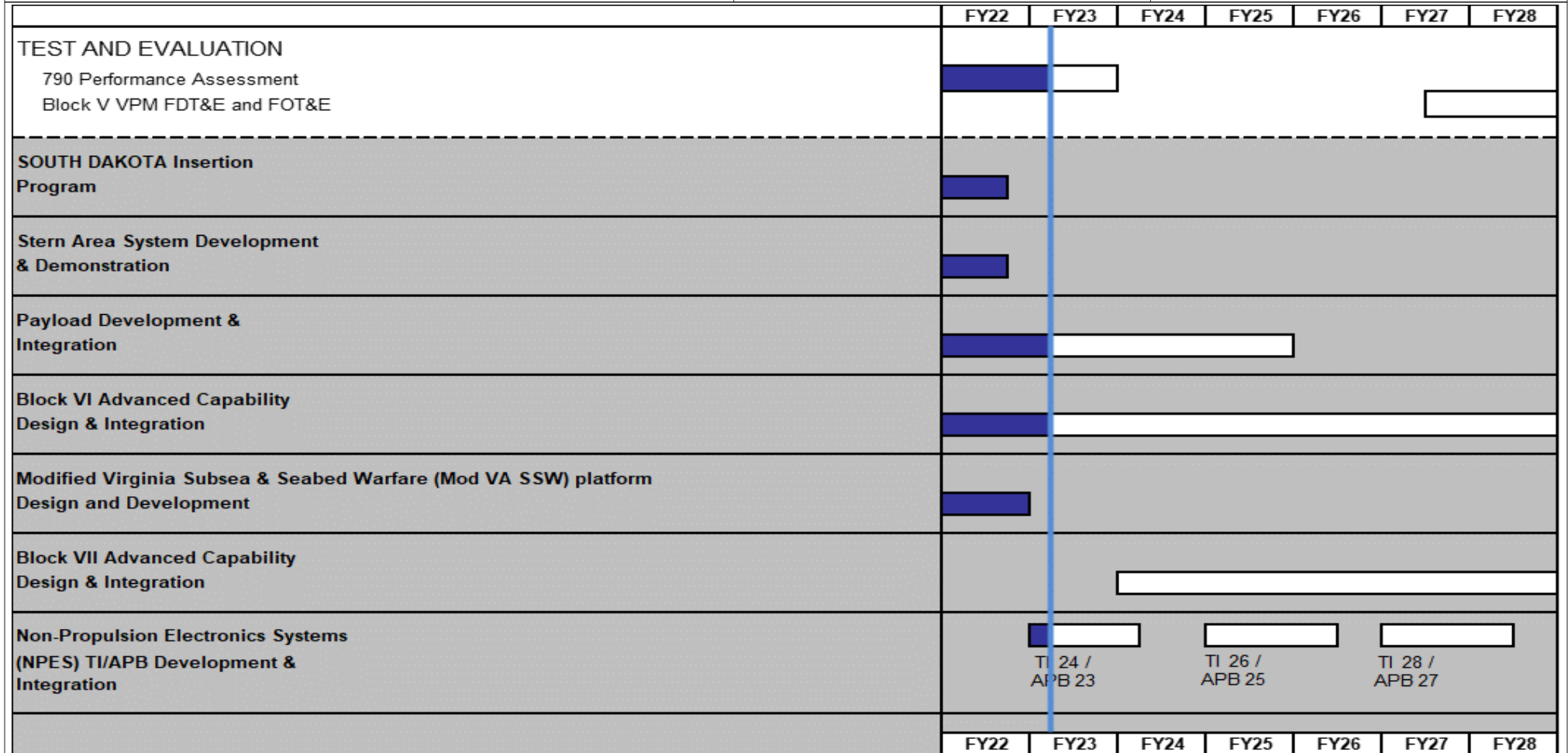
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604558N / <i>New Design SSN</i>				Project (Number/Name) 1947 / <i>New Design SSN HM&amp;E</i>					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	PO	COMOPTEVFOR : Norfolk, VA	20.104	0.672	Nov 2021	0.743	Nov 2022	0.581	Nov 2023	-		0.581	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	C/CPFF	Electric Boat : Groton, CT	3.407	0.582	Nov 2021	0.644	Nov 2022	0.504	Nov 2023	-		0.504	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	WR	NUWC : Newport,RI	0.556	0.228	Nov 2021	0.252	Nov 2022	0.197	Nov 2023	-		0.197	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	NUWC : Newport, RI - CORE Team	15.826	4.618	Nov 2021	5.107	Nov 2022	3.995	Nov 2023	-		3.995	Continuing	Continuing	Continuing
Subtotal			286.813	12.680		14.022		10.969		-		10.969	Continuing	Continuing	N/A
Remarks															
The decrease noted from FY 2023 to FY 2024 represents completion of the testing and evaluation of the testing on the USS SOUTH DAKOTA (SSN 790).															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,998.123	425.840		267.895		187.282		-		187.282	Continuing	Continuing	N/A
Remarks															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy</b>	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604558N / <i>New Design SSN</i>	<b>Project (Number/Name)</b> 1947 / <i>New Design SSN HM&amp;E</i>
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as of 22 Feb 2023

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604558N / <i>New Design SSN</i>	<b>Project (Number/Name)</b> 1947 / <i>New Design SSN HM&amp;E</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 1947</i></b>				
TEST & EVALUATION: U/R 790 Performance Assessment	1	2022	4	2023
SOUTH DAKOTA Insertion Program	1	2022	2	2022
Stern Area System Development & Demonstration	1	2022	2	2022
Payload Development & Integration	1	2022	4	2025
Block VI Advanced Capability Design & Integration	1	2022	4	2028
Modified Virginia Subsea & Seabed Warfare (Mod VA SSW) platform Design and Development	1	2022	4	2022
NPES TI24/APB23 Development & Integration	1	2023	1	2024
TEST & EVALUATION: FDTE and FOTE Block V VPM	3	2027	3	2028
NPES TI26/APB25 Development & Integration	1	2025	2	2026
Block VII Advanced Capability Design & Integration	1	2024	4	2028
NPES TI28/APB27 Development & Integration	1	2027	2	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604558N / <i>New Design SSN</i>				Project (Number/Name) 1950 / <i>New Design SSN Combat Sys Dev</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1950: <i>New Design SSN Combat Sys Dev</i>	881.540	35.154	31.365	38.572	-	38.572	43.521	41.411	40.375	41.181	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 516												

**A. Mission Description and Budget Item Justification**

This project provides the engineering development required to outfit each ship of the Virginia Class Submarine with a combat system which satisfies ORD requirements in all 7 mission areas, namely; ASW, STRIKE, ISR, Covert Mine Warfare, Battle Group Support, ASUW, and Special Warfare. The fully integrated combat system, otherwise referred to as the Non-Propulsion Electronics System (NPES), is composed of a collection of functional sub-systems, such as sonar, navigation, exterior communications, weapons launch, Large Vertical Array, Submarine Warfare Federated Tactical System (SWFTS) virtualization, Electronic Warfare Next Generation Architecture, etc., which evolve over the life of the program due to either competitive selection of new suppliers, component obsolescence replacement, increased technical performance, or improvements in reliability. Non-recurring engineering activity is needed to perform platform integration of the components, software modification to accommodate electronic data exchange, unique submarine environment qualification and update of all logistics products.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Sonar, Combat Control, and Architecture (S/CC/A) Subsystems	21.474	19.062	24.476	0.000	24.476
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Continue development of S/CC/A System Improvements necessary to maintain VIRGINIA Class ORD compliance, counter CYBER threats, and maintain commonality with in-service submarine designs.					
<b>FY 2023 Plans:</b> -Deliver Government Furnished Information (GFI) to the shipbuilder for the S/CC/A components of the TI-24 NPES configuration. -Complete Environmental Qualification Testing of the Commercial Off the Shelf (COTS) electronics in the S/CC/A TI-24 configured NPES. -Perform S/CC/A trade studies and bench test prototyping on Tactical Submarine Evolution Program (TSEP) candidate war fighting capabilities.					
<b>FY 2024 Base Plans:</b> -Initiate design and component selection for the TI-26 S/CC/A configuration. -Perform structured technical collaboration of the Undersea Technical Innovation Consortium members tasked with re-architecture of the Submarine Warfare Federated Tactical System (SWFTS) and decompose artifacts into S/CC/A distributed procurement specifications.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604558N / New Design SSN		Project (Number/Name) 1950 / New Design SSN Combat Sys Dev		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>-Conduct land based testing at the System of Systems level to assess impacts to latency, senescence, and time/navigation data distribution following enhanced cyber hardening and resiliency measures.</div> <div>-Conduct land based testing at the System of Systems level to assess failover performance in a common computing environment employing a Platform as a Service (PaaS) architecture.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY 2023 to FY 2024 accounts for the increased engineering work scope associated with TI-26 development and Block VI NPES design definition.</div>						
<div>Title: C3I Systems Engineering</div> <div>Articles:</div> <div>FY 2023 Plans: -Continue design of next generation displays in the Command and Control Center to mitigate obsolescence risk associated with existing glass. - Perform end-to-end system of systems design and certification testing of the re-designed navigation distribution suite and safety of flight ship control system operating within the enhanced TI-24 cyber environment. - Conduct platform level studies designed to rebalance Command and Control Systems Module power, cooling, weight, and fiber cabling conduit among subsystem Structurally Integrated Enclosures, necessary to sustain NPES modernization/tech refresh.</div> <div>FY 2024 Base Plans: -Produce updated NPES-wide Government Furnished Information (GFI) required by the shipbuilder to make platform compatible changes to the power, cooling, and cabling systems for the TI-26 configuration. -Initiate Environmental Qualification Testing of the electronics assemblies and Structurally Integrated Enclosure bays containing TI-26 pedigree hardware. -Perform land based critical item-level testing of the flight critical Ship Control interfaces with all NPES GFE equipment. -Perform engineering trades studies associated with potential Class design NPES changes in support of Block VI technical baseline definition.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div>		13.680 -	12.303 -	14.096 -	0.000 -	14.096 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604558N / New Design SSN				Project (Number/Name) 1950 / New Design SSN Combat Sys Dev					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase from FY 2023 to FY 2024 accounts for the increased engineering work scope associated with TI-26 development and Block VI NPES design definition.														
Accomplishments/Planned Programs Subtotals										35.154	31.365	38.572	0.000	38.572
C. Other Program Funding Summary (\$ in Millions)														
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost			
• SCN/2013: Virginia Class Submarine	6,339.647	6,864.537	10,513.684	-	10,513.684	10,163.748	8,739.108	8,483.697	7,688.725	10,147.368	167,990.662			
• O&M,N/0204283N: Sub Ops & Safety	8.191	8.624	9.319	-	9.319	9.564	9.742	9.794	9.747	Continuing	Continuing			
• OPN/0942: Virginia Class Support Equipment	22.669	32.300	32.076	-	32.076	43.597	52.098	39.771	40.568	Continuing	Continuing			
Remarks														
D. Acquisition Strategy														
The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach has facilitated a smoother transition from design to manufacturing and has reduced the number of changes typically encountered during construction of the lead and early follow-on ships. In September 1997, Congress passed a law allowing General Dynamics Electric Boat (GDEB) and Northrop Grumman Newport News (NGNN), now Huntington Ingalls Industries - Newport News Shipbuilding (HII-NNS), to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, GDEB remained the design yard for the VIRGINIA Class Submarine and HII-NNS became a part of the IPPD process. The Program Office is currently managing two Multi-Year Procurement (MYP) contracts. One for the Block IV (FY14-18) ships and one for the Block V (FY19-23) ships. All Block I, II and III ships, as well as the first three Block IV ships (SSNs 774-794) have been delivered. The remaining seven Block IV ships are awarded and under construction. The program's fourth MYP (Block V) contract, incorporates Acoustic Superiority (AS) modifications and Virginia Payload Module (VPM).														

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604558N / New Design SSN

Project (Number/Name)

1950 / New Design SSN Combat Sys Dev

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Unique Virginia Class Improvements	Various	Various : Various	101.270	4.578	Feb 2022	5.155	Feb 2023	7.404	Feb 2024	-		7.404	Continuing	Continuing	Continuing
Tech Insertion/Advanced Processing Build (TI/APB) Integration	Various	Lockheed Martin : Manassas, VA	22.872	5.400	Nov 2021	4.629	Nov 2022	6.308	Nov 2023	-		6.308	Continuing	Continuing	Continuing
Photonics	C/CPIF	Kollmorgen : Northampton, MA	64.094	0.000		0.000		0.000		-		0.000	0.000	64.094	-
Large Vertical Array South Dakota Improvement Program	Various	Lockheed Martin : Manassas, VA	20.308	3.500	Oct 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Advanced Array Studies and Modeling	Various	Lockheed Martin : Manassas, VA	0.000	0.000		3.000	Oct 2022	5.257	Oct 2023	-		5.257	0.000	8.257	-
Platform Integration	SS/CPFF	Electric Boat : Groton, CT	75.143	4.900	Nov 2021	4.200	Nov 2022	1.920	Nov 2023	-		1.920	Continuing	Continuing	Continuing
Photonics	C/CPIF	Lockheed Martin : Manassas, VA	0.500	0.986	Dec 2021	0.845	Dec 2022	1.006	Dec 2023	-		1.006	Continuing	Continuing	Continuing
Virtualization Enabling Architecture Development	Various	Various : TBD	19.598	4.613	Nov 2021	3.954	Nov 2022	6.034	Nov 2023	-		6.034	Continuing	Continuing	Continuing
Technical Direction Agent	WR	NUWC : Newport, RI	338.956	5.861	Nov 2021	5.026	Nov 2022	6.205	Nov 2023	-		6.205	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Carderock, MD	15.759	1.300	Nov 2021	1.114	Nov 2022	1.211	Nov 2023	-		1.211	Continuing	Continuing	Continuing
Acoustic Intercept & Sonar	C/CPFF	Progeny Applied : Manassas, VA	1.960	0.000		0.000		0.000		-		0.000	0.000	1.960	-
High Frequency & Sonar Sensors	C/CPFF	Applied Research Lab : University of Texas	1.640	0.000		0.000		0.000		-		0.000	0.000	1.640	-
Systems Engineering	WR	SSC : Charleston, SC	13.997	1.980	Nov 2021	1.697	Nov 2022	1.353	Nov 2023	-		1.353	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC : Keyport, WA	15.935	0.575	Nov 2021	0.493	Nov 2022	0.686	Nov 2023	-		0.686	Continuing	Continuing	Continuing
Miscellaneous	Various	Various : Various	148.167	1.461	Jan 2022	1.252	Jan 2023	1.188	Jan 2024	-		1.188	Continuing	Continuing	Continuing
<b>Subtotal</b>			840.199	35.154		31.365		38.572		-		38.572	Continuing	Continuing	N/A

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PE 0604558N: *New Design SSN* **UNCLASSIFIED** Volume 3 - 932

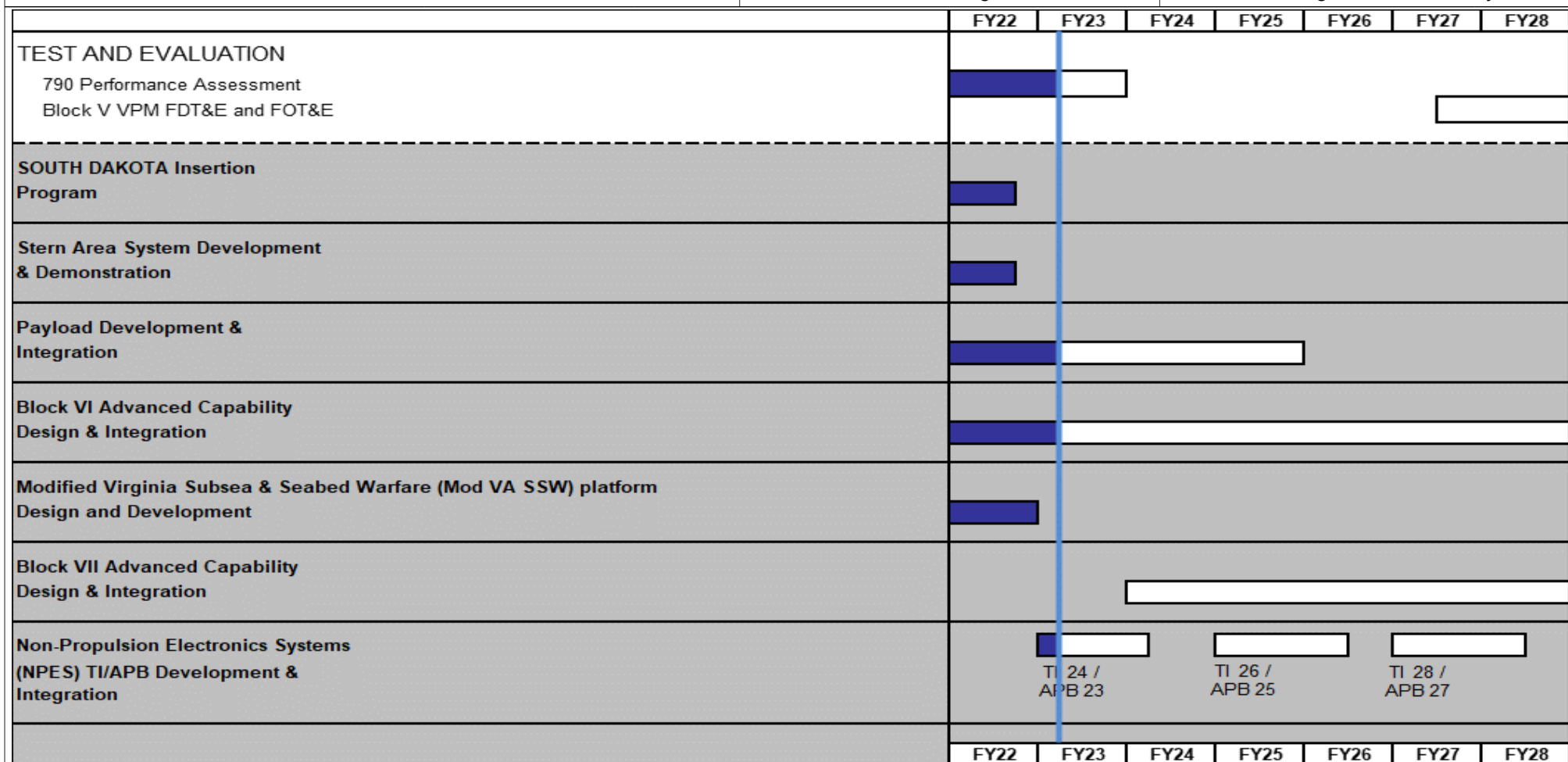
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604558N / <i>New Design SSN</i>	<b>Project (Number/Name)</b> 1950 / <i>New Design SSN Combat Sys Dev</i>
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as of 22 Feb 2023

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604558N / <i>New Design SSN</i>	<b>Project (Number/Name)</b> 1950 / <i>New Design SSN Combat Sys Dev</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 1950</i></b>				
TEST & EVALUATION: U/R 790 Performance Assessment	1	2022	4	2023
SOUTH DAKOTA Improvement Program	1	2022	2	2022
Stern Area System Development & Demonstration	1	2022	2	2022
Payload Development & Integration	1	2022	4	2025
Block VI Advanced Capability Design & Integration	1	2022	4	2028
Modified Virginia Subsea & Seabed Warfare (Mod VA SSW) platform Design and Development	1	2022	4	2022
NPES TI24/APB 23 Development & Integration	1	2023	1	2024
TEST & EVALUATION: FDTE and FOTE Block V VPM	3	2027	3	2028
NPES TI26/APB25 Development & Integration	1	2025	2	2026
Block VII Advanced Capability Design & Integration	1	2024	4	2028
NPES TI28/APB27 Development & Integration	1	2027	2	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604558N / New Design SSN				Project (Number/Name) 3062 / Submarine Multi-Mission Team Trainer			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3062: Submarine Multi-Mission Team Trainer	53.106	7.364	8.325	8.502	-	8.502	8.518	8.672	8.806	8.907	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shore based Combat System Team Trainers capable of training personnel in all aspects of submarine approach, attack and surveillance operations in a controlled, simulated environment. The Combat Control System (CCS) AN/BYG-1 and sonar system AN/BQQ-10 are installed on SSN, SSBN and SSGN class submarines. These tactical systems are planned for future upgrades with the next hardware and software revisions which will provide enhanced War Fighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) phased upgrades are also being installed with future revisions. The Advanced Processing Builds (APB) and Technical Insertion (TI) sensors, which feed technology insertion into the CCS/Acoustic development, directly impact the trainers.

The Submarine Multi-Mission Team Trainer (SMMTT) supports operator, employment, strike, and Battle Group training for enlisted and officer pipelines. The SMMTT provides operators and combat teams the opportunity to train ashore, prior to, and between deployments. The shore based training provides a means of maintaining team proficiency in stand alone or in combined team mode prior to ship deployment.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Submarine Multi-Mission Team Trainer	7.364	8.325	8.502	0.000	8.502
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shore based Combat System Team Trainers capable of training personnel in all aspects of submarine approach, attack and surveillance operations in a controlled, simulated environment.					
<b>FY 2023 Plans:</b> Develop implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays. These efforts include visualization of new sensor developments and simulations to match advancements in tactical systems supported by SMMTT. The SMMTT baseline includes integration of WSQ-9, Low Cost Conformal Array (LCCA), Large Vertical Array (LVA), Large Aperture Bow (LAB) Array and Torpedo Reference Model simulation. FY2023 continues Development Security Operations (DEVSECOPS) implementation of latest Advanced Processor Build (APB) and Technical Insertion (TI) into the Submarine Attack Center baseline. This effort					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023							
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604558N / New Design SSN		Project (Number/Name) 3062 / Submarine Multi-Mission Team Trainer							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
<p>includes new sensor developments and simulations to match advancements in tactical systems supported in Submarine Attack Centers. This effort updates Virtual/New Targets, Improved Payloads and New Electronic Warfare sensors. This effort will follow the delivery of tactical software to the Fleet on a quarterly basis as required by the Fleet.</p> <p><b>FY 2024 Base Plans:</b> Develop implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays. These efforts include visualization of new sensor developments and simulations to match advancements in tactical systems supported by SMMTT. The SMMTT baseline includes integration of WSQ-9, Low Cost Conformal Array (LCCA), Large Vertical Array (LVA), Large Aperture Bow (LAB) Array and Torpedo Reference Model simulation. FY2024 continues Development Security Operations (DEVSECOPS) implementation of latest Advanced Processor Build (APB) and Technical Insertion (TI) into the Submarine Attack Center baseline. This effort includes new sensor developments and simulations to match advancements in tactical systems supported in Submarine Attack Centers. This effort develops and increases number of Virtual/New Targets, Improved Payloads and Electronic Warfare entities in support of TYCOMS Training requirement, Undersea and Extended Battle Problems. This effort will follow the delivery of tactical software to the Fleet on a quarterly basis as required by the Fleet.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$0.177M from FY 2023 to FY 2024 develops and increases number of Virtual/New Targets, Improved Payloads and Electronic Warfare entities available during a training scenario per TYCOM Training requirement, Undersea and Extended Battle Problems.</p>											
Accomplishments/Planned Programs Subtotals				7.364	8.325	8.502	0.000	8.502			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/5661: Submarine Training Device Mods	75.813	80.591	76.954	-	76.954	80.983	82.747	84.365	86.056	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604558N / <i>New Design SSN</i>	Project (Number/Name) 3062 / <i>Submarine Multi-Mission Team Trainer</i>	

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Remarks											

D. Acquisition Strategy

The SMMTT program software development is accounted for in this RD TEN line. All production kits are procured in OPN BLI 5661.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604558N / New Design SSN				Project (Number/Name) 3062 / Submarine Multi-Mission Team Trainer					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	Reqn	NSWC/CD : Bethesda, MD	34.774	0.936	Dec 2021	1.000	Dec 2022	1.040	Dec 2023	-		1.040	Continuing	Continuing	Continuing
Component Development	C/CPFF	ARL UT : UT Austin, TX	3.929	0.410	Jan 2022	0.462	Jan 2023	0.471	Jan 2024	-		0.471	Continuing	Continuing	Continuing
Component Development	Reqn	NUWC/NPT : Newport, RI	14.403	5.718	Oct 2021	6.013	Oct 2022	6.120	Oct 2023	-		6.120	Continuing	Continuing	Continuing
Component Development	C/CPFF	ARL Penn : Phildelphia, PA	0.000	0.300	Jan 2022	0.850	Jan 2023	0.871	Jan 2024	-		0.871	Continuing	Continuing	Continuing
Subtotal			53.106	7.364		8.325		8.502		-		8.502	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			53.106	7.364		8.325		8.502		-		8.502	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy											Date: March 2023																	
Appropriation/Budget Activity 1319 / 5											R-1 Program Element (Number/Name) PE 0604558N / New Design SSN								Project (Number/Name) 3062 / Submarine Multi-Mission Team Trainer									
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Interface Design Updates			▲				△				△				△				△			△				△		
Software Development Updates (SIM/STIM)				▲				△				△				△				△				△			△	
Software Builds				▲				△				△				△				△				△			△	
APB Upgrades	▲				△				△				△				△				△				△			
H/W Tech Insertion	▲							△				△				△				△				△			△	
DEVSECOPS		▲	▲	▲	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	
Torpedo Modeling Development			▲				△				△				△				△				△			△		
Develop New Targets									△			△				△				△				△			△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604558N / New Design SSN	Project (Number/Name) 3062 / Submarine Multi-Mission Team Trainer	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3062</b>				
Interface design updates: Interface Design Updates	3	2022	3	2028
Software Development Updates: Software Development Updates (SIM/STIM)	4	2022	4	2028
Software Builds: Software Builds	4	2022	4	2028
Advanced Processing Build(APB) Upgrades: Advanced Processing Build (APB) Upgrades	1	2022	1	2028
Hardware Tech Insertion Updates: Hardware Tech Insertion Updates	1	2022	4	2028
DEVSECOPS: DEVSECOPS	2	2022	4	2028
Torpedo Modeling Development: Torpedo Modeling Development	3	2022	3	2028
Develop New Targets: Develop New Targets	1	2024	4	2028



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604558N / New Design SSN				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	0.000	8.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.500
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This FY23 RDT&E Congressional add for Advanced Submarine Control (ASC) using Precision Maneuvering Unit (PMU) technology targets performance and reliability improvements, as well as decreasing total ownership cost, to the Virginia Class Submarine Secondary Propulsion Unit (SPU) design. Improvements aim to create a PMU to replace SPU's as the secondary propulsion system.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> Precision maneuvering units	0.000	8.500
<b><i>FY 2022 Accomplishments:</i></b> N/A		
<b><i>FY 2023 Plans:</i></b> Transition of prototype technology to support insertion into future VIRGINIA Class construction baselines.		
<b>Congressional Adds Subtotals</b>	0.000	8.500

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604558N / New Design SSN				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Precision Maneuvering Unit (PMU) Development	TBD	TBD : TBD	0.000	0.000		8.500	Mar 2023	0.000		-		0.000	0.000	8.500	-
Subtotal			0.000	0.000		8.500		0.000		-		0.000	0.000	8.500	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		8.500		0.000		-		0.000	0.000	8.500	N/A
Remarks															

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PE 0604558N: *New Design SSN*  
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<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604558N / <i>New Design SSN</i>	<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604558N / New Design SSN	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 9999</b>				
Precision Maneuvering Unit (PMU) Development: Precision Maneuvering Unit (PMU) Development	2	2023	4	2023

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	778.268	60.806	58.741	71.516	-	71.516	71.895	70.473	69.390	70.793	Continuing	Continuing
0236: SSN Comb Cont Sys Imprvmnt (ENG)	778.268	60.806	58.741	71.516	-	71.516	71.895	70.473	69.390	70.793	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The AN/BYG-1 is the combat control system common across all submarine platforms which incorporates tactical control, weapon/payload control and Tactical Local Area Network (TacLAN) functions into a single procurement program. AN/BYG-1 allows the submarine to rapidly update the ship-safety tactical picture, integrates the common tactical picture into the battlegroup, improves torpedo interfaces, and provides tactical TOMAHAWK and Harpoon capability. AN/BYG-1 systems will be continuously updated with hardware enhancements to address Commercial Off The Shelf (COTS) obsolescence, and provide capability improvements through software upgrades. Hardware updates are referred to as Tech Insertion (TI) kits and are differentiated by year of development (i.e. TI-20, TI-22, TI-24, etc.). The TI upgrades provide the baseline for all future AN/BYG-1 procurements. AN/BYG-1 is part of the Submarine Warfare Federated Tactical Systems (SWFTS), a family of interdependent systems that conduct cooperative system development and installations.

Project Unit 0236: This program develops Commercial-Off-The-Shelf (COTS) based software and hardware upgrades for AN/BYG-1, the Multi-tube Weapons Simulator (MTWS), and the Common Weapon Launcher (CWL) in order to integrate improved tactical and payload control capabilities for all submarine classes. This program also develops new payload capabilities for the Submarine Launched Unmanned Aerial System (SLUAS).

SLUAS incorporates unmanned aerial vehicles, vehicle encapsulating canisters, vehicle command and control capabilities, and vehicle stowage into submarines. SLUAS extends the sensor range of the submarine, serving as a key enabler of Over-The-Horizon (OTH) weapons employment.

Provides funding for the development of the CWL; Legacy Launchers; MTWS; Information Assurance system; Onboard Team Trainer (OBTT); and Common Infrastructure Services (CIS) subsystem. This includes integration of OBTT - Master Controller (OBTT - MC) & Inter-Subsystem Monitoring Tool (ISMT) efforts as well as other common services within SWFTS.

FY24 continues funding for development of TI-22 and TI-24. Cybersecurity efforts continue to grow due to increasing interconnection complexity, more Internet Protocol based traffic in future baselines, and development of Cyber Safe Controls. Integration efforts for additional submarine payloads including Contender and Maritime Strike Tomahawk (MST) continue in FY24. FY24 also continues efforts to support classified payloads.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604562N / Submarine Tactical Warfare System			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	62.115	58.741	69.358	-	69.358
Current President's Budget	60.806	58.741	71.516	-	71.516
Total Adjustments	-1.309	0.000	2.158	-	2.158
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.309	0.000			
• Program Adjustments	0.000	0.000	0.493	-	0.493
• Rate/Misc Adjustments	0.000	0.000	1.665	-	1.665
<b>Change Summary Explanation</b>					
The FY24 funding request was increased due to the need to accelerate TI-24 Hardware Development. Acceleration is required due to supply chain delays for the delivery of COTS hardware. As reflected in the PDOCS for BLI 5420, supply chain delays have increased from between 6 and 12 months to as much as 18 months. As a result of the delays, TI-24 development must be completed sooner than originally planned in order to procure hardware sooner than originally planned. This approach preserves the installation schedules of each TI-24 platform.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System				Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0236: SSN Comb Cont Sys Imprvmnt (ENG)	778.268	60.806	58.741	71.516	-	71.516	71.895	70.473	69.390	70.793	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The AN/BYG-1 is the combat control system common across all submarine platforms which incorporates tactical control, weapon/payload control and Tactical Local Area Network (TacLAN) functions into a single procurement program. AN/BYG-1 allows the submarine to rapidly update the ship-safety tactical picture, integrates the common tactical picture into the battlegroup, improves torpedo interfaces, and provides tactical TOMAHAWK and Harpoon capability. AN/BYG-1 systems will be continuously updated with hardware enhancements to address Commercial Off The Shelf (COTS) obsolescence, and provide capability improvements through software upgrades. Hardware updates are referred to as Tech Insertion (TI) kits and are differentiated by year of development (i.e. TI-20, TI-22, TI-24, etc.). The TI upgrades provide the baseline for all future AN/BYG-1 procurements. AN/BYG-1 is part of the Submarine Warfare Federated Tactical Systems (SWFTS), a family of interdependent systems that conduct cooperative system development and installations.

Project Unit 0236: This program develops Commercial-Off-The-Shelf (COTS) based software and hardware upgrades for AN/BYG-1, the Multi-tube Weapons Simulator (MTWS), and the Common Weapon Launcher (CWL) in order to integrate improved tactical and payload control capabilities for all submarine classes. This program also develops new payload capabilities for the Submarine Launched Unmanned Aerial System (SLUAS).

SLUAS incorporates unmanned aerial vehicles, vehicle encapsulating canisters, vehicle command and control capabilities, and vehicle stowage into submarines. SLUAS extends the sensor range of the submarine, serving as a key enabler of Over-The-Horizon (OTH) weapons employment.

Provides funding for the development of the CWL; Legacy Launchers; MTWS; Information Assurance system; Onboard Team Trainer (OBTT); and Common Infrastructure Services (CIS) subsystem. This includes integration of OBTT - Master Controller (OBTT - MC) & Inter-Subsystem Monitoring Tool (ISMT) efforts as well as other common services within SWFTS.

FY24 continues funding for development of TI-22 and TI-24. Cybersecurity efforts continue to grow due to increasing interconnection complexity, more Internet Protocol based traffic in future baselines, and development of Cyber Safe Controls. Integration efforts for additional submarine payloads including Contender and Maritime Strike Tomahawk (MST) continue in FY24. FY24 also continues efforts to support classified payloads.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> AN/BYG-1 Software Development	22.275	18.670	15.077	0.000	15.077
<b>Articles:</b>	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System		Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>FY 2023 Plans:</b> Continue development of TI-22/APB-23.						
<b>FY 2024 Base Plans:</b> Continue development of TI-22/APB-23 and commence development of TI-24/APB-23.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> -3.593M decrease from FY23 to FY24 for AN/BYG-1 Software Development because of deferred AN/BYG-1 re-architecture efforts due to supply chain delays affecting the delivery of COTS hardware.						
<b>Title:</b> AN/BYG-1 TI-22 Hardware Development <b>Articles:</b>		8.632 -	9.521 -	5.121 -	0.000 -	5.121 -
<b>FY 2023 Plans:</b> Complete development, integration, and test of AN/BYG-1 TI-22.						
<b>FY 2024 Base Plans:</b> N/A						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease is due to completion of development, integration and test of majority of AN/BYG-1 (TI-22).						
<b>Title:</b> AN/BYG-1 TI-20 Hardware Development <b>Articles:</b>		4.924 -	0.000 -	0.000 -	0.000 -	0.000 -
<b>FY 2023 Plans:</b> N/A						
<b>FY 2024 Base Plans:</b> N/A						
<b>FY 2024 OCO Plans:</b>						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System		Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
Title: AN/BYG-1 TI-24 Hardware Development		0.000	3.356	23.581	0.000	23.581
Articles:		-	-	-	-	-
FY 2023 Plans:						
Accelerate development, integration and test of AN/BYG-1 TI-24						
FY 2024 Base Plans:						
Continue development, integration and test of AN/BYG-1 TI-24.						
FY 2024 OCO Plans:						
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						
The FY24 funding request was increased due to the need to accelerate TI-24 Hardware Development. Acceleration is required due to supply chain delays for the delivery of COTS hardware. As reflected in the PDOCS for BLI 5420, supply chain delays have increased from between 6 and 12 months to as much as 18 months. As a result of the delays, TI-24 development must be completed sooner than originally planned in order to procure hardware sooner than originally planned. This approach preserves the installation schedules of each TI-24 platform. In addition, AN/BYG-1 was funded to accelerate the Resilient Cluster Enclave (RCE) development to be included with TI-24 as a risk mitigator for TI-26 Common Computing Environment (CCE) expansion across the Submarine Warfare Federated Tactical System (SWFTS). The RCE is critical to maintaining Ship Safety/Self Protect (SS/SP) functionality within a CCE and improves cyber resilience via a dedicated failsafe. The CCE permits computing resources to be shared among the SWFTS system-of-systems (i.e. cloud computing) and the RCE is a parallel CCE for just SS/SP functions to ensure these mission critical functions are maintained following a primary CCE failure.						
Title: Testing		3.168	3.238	3.302	0.000	3.302
Articles:		-	-	-	-	-
FY 2023 Plans:						
Complete APB-19 OT and commence APB-21 DT.						
FY 2024 Base Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System		Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Complete APB-21 DT and commence APB 21 OT and APB-23 DT. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to inflation.						
<b>Title:</b> Payload Integration  <b>Articles:</b>  <b>FY 2023 Plans:</b> Continue software development efforts to support submarine payload integration of MK 48 APB5+/APB6, Contender, and Maritime Strike Tomahawk. Continue integration of Harpoon BLK 1C into Payload Control System.  Continue support of planning/prototyping for classified payloads. <b>FY 2024 Base Plans:</b> Continue software development efforts to support submarine payload integration of MK 48 APB5+/APB6, Contender, and Maritime Strike Tomahawk. Continue integration of Harpoon BLK 1C into Payload Control System.  Continue support of planning/prototyping for classified payloads. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to inflation.		6.467 -	6.940 -	7.079 -	0.000 -	7.079 -
<b>Title:</b> CyberSecurity  <b>Articles:</b>  <b>FY 2023 Plans:</b> Continue development of CyberSecurity Toolkit and Information Assurance (IA) certification Testing on BYG-1 TI-22. Continue Risk Management Framework (RMF) accreditations for various systems. <b>FY 2024 Base Plans:</b>		7.169 -	8.621 -	8.793 -	0.000 -	8.793 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System		Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue development of CyberSecurity Toolkit and IA certification Testing on BYG-1 TI-22. Commence development of CyberSecurity Toolkit and IA Certification Testing on BYG-1 TI-24. Continue RMF accreditations for various systems.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to inflation.						
<b>Title:</b> Unmanned Aerial System (UAS)  <b>Articles:</b>		2.239 -	2.332 -	2.379 -	0.000 -	2.379 -
<b>FY 2023 Plans:</b> Continue Unmanned Aerial System development and integration efforts for 3 inch Submarine launched UAS.  <b>FY 2024 Base Plans:</b> Conclude Middle Tier Acquisition of 3 inch submarine launched UAS. Begin introduction of obsolescence-refreshed SLUAS 3 inch UAS.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to inflation.						
<b>Title:</b> Common Infrastructure Services (CIS)  <b>Articles:</b>		5.932 -	6.063 -	6.184 -	0.000 -	6.184 -
<b>FY 2023 Plans:</b> Continue integration for Common Infrastructure Services to include Onboard Team Trainer - Master Controller & Inter-Subsystem Monitoring Tool efforts as well as other common services within Submarine Warfare Federated Tactical Systems (SWFTS).  <b>FY 2024 Base Plans:</b> Continue integration for Common Infrastructure Services to include Onboard Team Trainer - Master Controller & Inter-Subsystem Monitoring Tool efforts as well as other common services within SWFTS.  <b>FY 2024 OCO Plans:</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023							
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System		Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to inflation.											
Accomplishments/Planned Programs Subtotals				60.806	58.741	71.516	0.000	71.516			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/5420: SSN Combat Control Systems	128.117	128.874	133.063	-	133.063	146.469	142.675	145.318	148.775	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
This budget line integrates software (APBs) developed by the advanced development community.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System				Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/BYG-1 TECH INSERTION	C/CPIF	GENERAL DYNAMICS (GDMS) : FAIR LAKES, VA	132.487	8.832	Oct 2021	6.945	Oct 2022	10.597	Oct 2023	-		10.597	Continuing	Continuing	Continuing
AN/BYG-1 TECH INSERTION	C/CPFF	PROGENY (PCS) : MANASSAS, VA	35.340	8.839	Oct 2021	6.958	Oct 2022	10.597	Oct 2023	-		10.597	Continuing	Continuing	Continuing
GOVERNMENT ENGINEERING	WR	NUWC : NEWPORT, RI	98.964	4.489	Oct 2021	4.769	Oct 2022	7.379	Oct 2023	-		7.379	Continuing	Continuing	Continuing
CYBERSECURITY	C/CPFF	PROGENY : MANASSAS, VA	64.733	7.206	Oct 2021	7.897	Oct 2022	11.709	Oct 2023	-		11.709	Continuing	Continuing	Continuing
UNMANNED AERIAL SYSTEM	WR	NUWC : NEWPORT, RI	5.615	1.667	Oct 2021	1.802	Oct 2022	2.612	Oct 2023	-		2.612	Continuing	Continuing	Continuing
UNMANNED AERIAL SYSEM	C/CPFF	PROGENY (PCS) : MANASSAS, VA	2.333	0.474	Oct 2021	0.583	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			339.472	31.507		28.954		42.894		-		42.894	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOFTWARE INTEGRATION	C/CPIF	GENERAL DYNAMICS (GDMS) : FAIRLAKES, VA	118.687	7.529	Oct 2021	7.680	Oct 2022	7.299	Oct 2023	-		7.299	Continuing	Continuing	Continuing
SOFTWARE INTEGRATION	WR	NUWC : NEWPORT, RI	77.969	4.650	Oct 2021	4.743	Oct 2022	5.005	Oct 2023	-		5.005	Continuing	Continuing	Continuing
SOFTWARE INTEGRATION	C/CPFF	LOCKHEED MARTIN (LM-MSS) : MANASSAS, VA	33.136	3.695	Oct 2021	3.768	Oct 2022	3.582	Oct 2023	-		3.582	Continuing	Continuing	Continuing
SOFTWARE INTEGRATION	C/CPFF	PROGENY (PCS) : MANASSAS, VA	24.008	4.627	Oct 2021	4.720	Oct 2022	4.486	Oct 2023	-		4.486	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System				Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SOFTWARE DEVELOPMENT	Various	VARIOUS : Not Specified	63.347	2.429	Oct 2021	2.478	Oct 2022	2.355	Oct 2023	-		2.355	Continuing	Continuing	Continuing
HARPOON PLATFORM INTEGRATION	C/CPFF	PROGENY : MANASSAS, VA	1.010	0.512	Oct 2021	0.522	Oct 2022	0.000		-		0.000	0.000	2.044	-
Subtotal			318.157	23.442		23.911		22.727		-		22.727	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NUWC : NEWPORT, RI	42.022	1.014	Oct 2021	1.014	Oct 2022	1.777	Oct 2023	-		1.777	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPIF	GENERAL DYNAMICS : FAIRLAKES, VA	13.155	0.775	Oct 2021	0.775	Oct 2022	0.775	Oct 2023	-		0.775	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPIF	GENERAL DYNAMICS : PITTSFIELD, MA	7.245	0.763	Oct 2021	0.763	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPAF	PROGENY : MANASSAS, VA	4.287	0.507	Oct 2021	0.507	Oct 2022	0.507	Oct 2023	-		0.507	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	COMOPTEVFOR : NORFOLK, VA	20.250	0.844	Oct 2021	0.844	Oct 2022	0.844	Oct 2023	-		0.844	Continuing	Continuing	Continuing
Subtotal			86.959	3.903		3.903		3.903		-		3.903	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PROGRAM MANAGEMENT SUPPORT	C/CPFF	VARIOUS : Not Specified	33.680	1.954	Oct 2021	1.973	Oct 2022	1.992	Oct 2023	-		1.992	Continuing	Continuing	Continuing
Subtotal			33.680	1.954		1.973		1.992		-		1.992	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604562N / Submarine Tactical Warfare System					Project (Number/Name) 0236 / SSN Comb Cont Sys Imprvmnt (ENG)					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			778.268	60.806		58.741		71.516		-		71.516	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

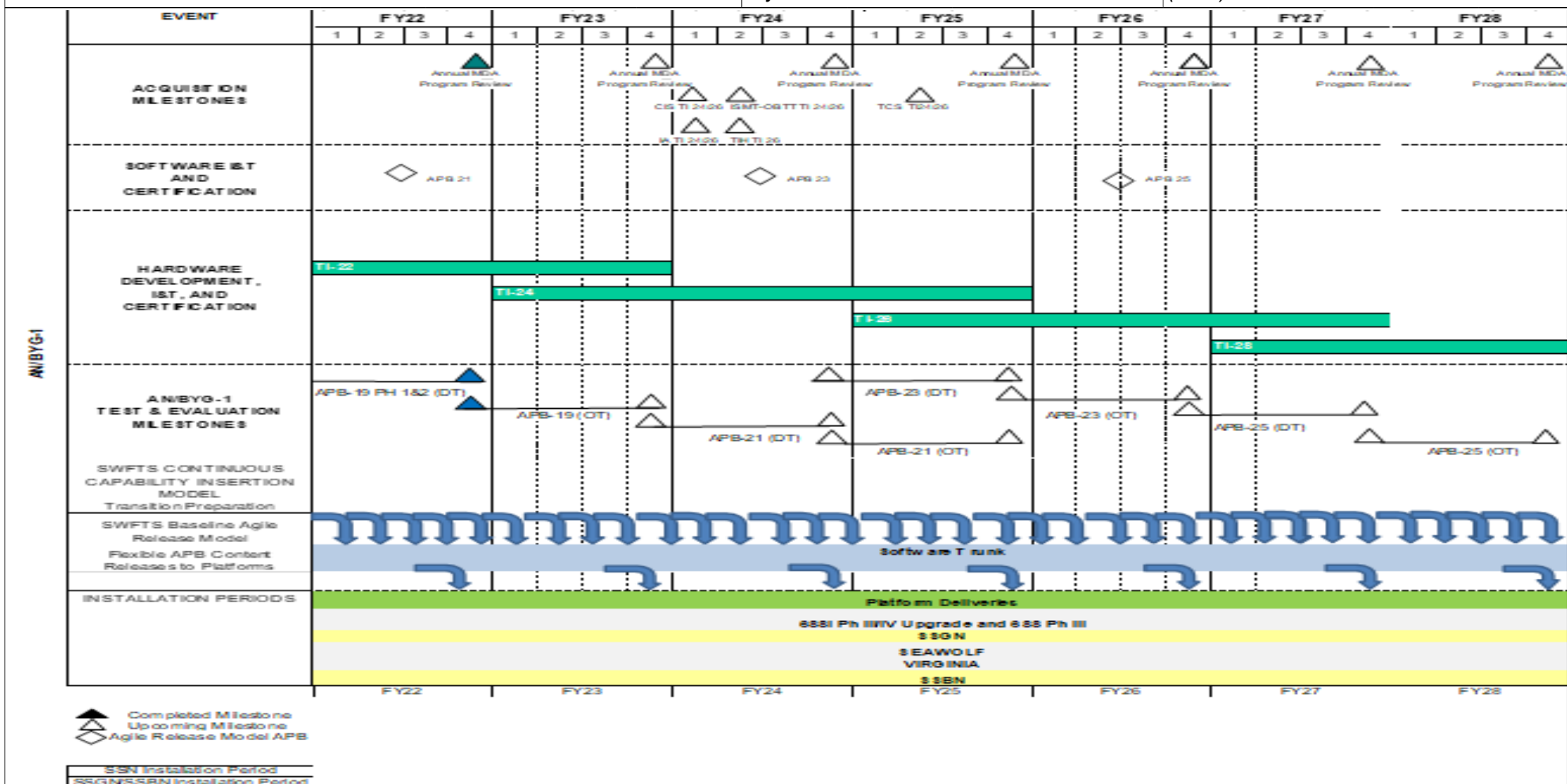
Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604562N / Submarine Tactical Warfare  
System

Project (Number/Name)

0236 / SSN Comb Cont Sys Imprvmnt  
(ENG)

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604562N / <i>Submarine Tactical Warfare System</i>	<b>Project (Number/Name)</b> 0236 / <i>SSN Comb Cont Sys Imprvmnt (ENG)</i>	

**Schedule Details**

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
<b>Page 1</b>				
Acq Milestones: Annual MDA Program Review - FY22	4	2022	4	2022
Acq Milestones: Annual MDA Program Review - FY23	4	2023	4	2023
Acq Milestones: Annual MDA Program Review - FY24	4	2024	4	2024
Acq Milestones: Annual MDA Program Review - FY25	4	2025	4	2025
Acq Milestones: Annual MDA Program Review - FY26	4	2026	4	2026
Acq Milestones: Annual MDA Program Review - FY27	4	2027	4	2027
Acq Milestones: Annual MDA Program Review - FY28	4	2028	4	2028
Software I&T, Certification: Software I&T, Certification: APB-21	2	2022	3	2022
Software I&T, Certification: Software I&T, Certification: APB-23	2	2024	3	2024
Software I&T, Certification: Software I&T, Certification: APB-25	2	2026	3	2026
Hardware Development, I&T Certification: Hardware Development, I&T Certification: TI-22	1	2022	4	2023
Hardware Development, I&T Certification: Hardware Development, I&T Certification: TI-24	1	2023	4	2025
Hardware Development, I&T Certification: Hardware Development, I&T Certification: TI-26	1	2025	4	2027
Hardware Development, I&T Certification: Hardware Development, I&T Certification: TI-28	1	2027	4	2028
Test & Evaluation Milestones: AN/BYG-1: APB-19 DT	3	2022	2	2023
Test & Evaluation Milestones: AN/BYG-1: APB-19 OT	4	2022	4	2023
Test & Evaluation Milestones: AN/BYG-1: APB-21 DT	4	2023	4	2024
Test & Evaluation Milestones: AN/BYG-1: APB-21 OT	4	2024	4	2025

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## Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

### R-1 Program Element (Number/Name)

PE 0604562N / Submarine Tactical Warfare System

**Project (Number/Name)**0236 / SSN Comb Cont Sys Imprvmnt  
(ENG)

Events by Sub Project	Quarter	Year	Quarter	Year
Test & Evaluation Milestones: AN/BYG-1: APB-23 DT	4	2024	3	2025
Test & Evaluation Milestones: AN/BYG-1: APB-23 OT	4	2025	2	2026
Test & Evaluation Milestones: AN/BYG-1: APB-25 DT	4	2026	2	2027
Test & Evaluation Milestones: AN/BYG-1: APB-25 OT	3	2027	4	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604567N I Ship Contract Design/ Live Fire T&E							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	912.268	52.878	60.791	22.462	-	22.462	27.543	10.618	9.320	9.199	Continuing	Continuing
1803: Ship Contract Design	146.915	3.009	2.837	3.112	-	3.112	3.938	3.605	3.664	3.470	Continuing	Continuing
2465: LHA(R) FLT Design and Total Ship Integration	280.843	7.306	12.237	19.350	-	19.350	23.605	7.013	5.656	5.729	Continuing	Continuing
3108: CVN 80 Total Ship Integration	138.305	24.094	26.311	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	188.710
3179: CVN-79 Total Ship Integration	260.905	14.331	15.418	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	290.654
4007: CVN 21 LFT&E	85.300	4.138	3.988	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	93.426
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 333, 223												
A. Mission Description and Budget Item Justification												
This Program Element (PE) directly supports the Navy's Shipbuilding Plan by providing for the development of engineering, programmatic and acquisition documentation including ship specifications (including performance specifications) and contractual documentation associated with acquisition of Navy ships. This PE also supports the Congressionally mandated Live Fire Test and Evaluation (LFT&E) program for new ship designs.												
Contract Design has traditionally been the engineering development of the technical and contractual definition of the ship design (including ship specifications and drawings) to a level of detail sufficient for shipbuilders to make a sound estimate of the construction cost and schedule. Additionally, the contract design package developed under this PE has provided the technical baseline from which the Navy selects the shipbuilder who then develops the detail design package required to support the construction and eventual delivery of the ship. This PE also supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions, and supports engineering planning and ship affordability studies.												
Under Acquisition Reform for new design ships, traditional distinct phasing of the design process has been replaced with a continuous concurrent engineering Integrated Product and Process Development (IPPD) process extending through and after contract award. This serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, system programs, and suppliers. Government/Industry Integrated Product Team(s) (IPTs) will utilize the IPPD process to develop the design in an Integrated Product and Data Environment (IPDE). The design approach is part of an acquisition strategy that is based on commercial practices and incorporates a phased technical definition.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604567N / Ship Contract Design/ Live Fire T&E			
CVN 78 Class efforts consisting of Project Units 3179, 3108 and 4007 were moved to PE 0604112N / Project Unit 2208 in FY 2024 and later, enabling Major Defense Acquisition Program (MDAP) transparency of the CVN 78 Class.					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	54.829	60.791	58.149	-	58.149
Current President's Budget	52.878	60.791	22.462	-	22.462
Total Adjustments	-1.951	0.000	-35.687	-	-35.687
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.951	0.000			
• Program Adjustments	0.000	0.000	-36.250	-	-36.250
• Rate/Misc Adjustments	0.000	0.000	0.563	-	0.563
<b>Change Summary Explanation</b>					
FY 24 PROJ PU 1803: Reduced (-\$1.2M) due to Program Adjustments					
FY 24 PROJ PU 2465: Increased (+\$13.5M) for LHA 8 testing efforts and reduced (-\$1M) due to Program Adjustments; Net adjustment (+12.5M)					
FY 24 PROJ PU 3108/3179/4007: Transfer from PE 0604567N in FY 2024 and later to PE 0604112N PU 2208 (-\$40.1M)					
FY 24 PROJ PU 3108/3179/4007: Program Adjustments (-\$6.9M)					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>				Project (Number/Name) 1803 / <i>Ship Contract Design</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1803: <i>Ship Contract Design</i>	146.915	3.009	2.837	3.112	-	3.112	3.938	3.605	3.664	3.470	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

DDG Modernization:

The major effort is the engineering development of the technical and contractual definition of the ship's design (e.g. ship specifications and drawings), with sufficient details for the planning yard to make a sound estimate of cost and schedule. It also serves as the technical definition from which the planning yard develops the detailed design and testing package required to build and test the ship. It provides the Navy with a digital, ship design knowledge base, including lessons learned, required to ensure that a proper development, analysis and evaluation can be conducted of any current or future planned.

Another area this project funds is the development of specific Navy ship criteria and standards for newly developed technologies. Additionally, as new laws are passed, new safety regulations and environmental criteria are developed and other legal/Congressional requirements identified, this project funds the translation into Navy ship design criteria and standards. This project also funds the translation of the traditional Ship Specifications into performance-based criteria, which supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to ship alterations. This project also supports ship survivability studies, superstructure integrity analysis, developmental and operational testing, gun weapon system software integration and next generation Machinery Control System (MCS) software integration.

Expeditionary Sea Base (ESB) (formerly MLP AFSB)

Prior year funding included the performance specification development and Dynamic Interface Testing for various airframes as part of the ESB Special Operations Forces (SOF) Backfit.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Ship Contract Design	3.009	2.837	3.112	0.000	3.112
<b>Articles:</b>	-	-	-	-	-
<b><i>FY 2023 Plans:</i></b> Continue ship design and alteration development for service life extension and Hull Mechanical & Electrical (HM&E) network upgrades in CG 47 and for DDG 51 Flt IIA ship design to include development of structural reliability and other alterations to include machinery control systems improvements in FY 2023.					
<b><i>FY 2024 Base Plans:</i></b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023							
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>		<b>Project (Number/Name)</b> 1803 / <i>Ship Contract Design</i>							
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>					
DDG 51 Flt IIA ship design to include continued development of structural reliability and other alterations to include machinery control systems improvements in FY 2024. Funding will support continued research and development efforts associated with DDGM 2.0 and back-fit of SPY-6(v)4 on the DDG-51 Class. Funds will also support continued lab upgrades for HM&E systems associated with DDGM.  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Developing DDG MOD 2.0 and Engineering Lab for FLT 3.											
<b>Accomplishments/Planned Programs Subtotals</b>		3.009	2.837	3.112	0.000	3.112					
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b><u>Line Item</u></b>	<b><u>FY 2022</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024 Base</u></b>	<b><u>FY 2024 OCO</u></b>	<b><u>FY 2024 Total</u></b>	<b><u>FY 2025</u></b>	<b><u>FY 2026</u></b>	<b><u>FY 2027</u></b>	<b><u>FY 2028</u></b>	<b><u>Cost To Complete</u></b>	<b><u>Total Cost</u></b>
• OPN 0900: <i>DDG Mod</i>	535.667	744.341	628.532	-	628.532	927.280	855.780	942.398	958.412	9,631.876	19,383.298
• OPN 0960: <i>CG Mod</i>	138.926	59.054	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3,936.983
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
Continuing systems and software development for both development models and production machinery control units at Land Based Engineering Sites.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 1803 / Ship Contract Design					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CG Mod Electronics Systems Eng	C/CPAF	Lockheed : Martin, Moorestown, NJ	17.413	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DON Energy Initiative - OEM	C/FPIF	L-3 Maritime Systems : Leesburg, VA	34.857	0.000		0.000		0.000		-		0.000	0.000	34.857	-
DON Energy Initiative	WR	NSWC/SSES : Philadelphia, PA	3.629	0.000		0.000		0.000		-		0.000	0.000	3.629	-
Engineering Development and Design	Various	COTF/NAVAIR/NSWCCD/NSWCDD/NSWCPC/NSWCPCPD/NSWCSPH/NSWCSPHES : DC/MD/PA/CA	1.085	0.000		0.000		0.000		-		0.000	0.000	1.085	-
Preliminary and Contract Design	C/FPIF	NASSCO : San Diego, CA	6.500	0.000		0.000		0.000		-		0.000	0.000	6.500	-
Hybrid Electric Drive	C/CPIF	L-3 Maritime Systems : Leesburg, VA	6.911	0.000		0.000		0.000		-		0.000	0.000	6.911	-
Hybrid Electric Drive	C/CPAF	Rolls Royce : Walpole, MA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
Hybrid Electric Drive	C/CR	General Atomics : San Diego, CA	0.040	0.000		0.000		0.000		-		0.000	0.000	0.040	-
Hybrid Electric Drive	C/CPAF	Herren Engineering : Alexandria, VA	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	-
Hybrid Electric Drive	C/CPAF	Syntek : Arlington, VA	0.099	0.000		0.000		0.000		-		0.000	0.000	0.099	-
Hybrid Electric Drive	WR	NSWC/SSES : Philadelphia, PA	0.750	0.000		0.000		0.000		-		0.000	0.000	0.750	-
Hybrid Electric Drive	Various	Not Specified : Not Specified	8.500	0.000		0.000		0.000		-		0.000	0.000	8.500	-
Subtotal			80.484	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604567N / Ship Contract Design/ Live Fire T&E						<b>Project (Number/Name)</b> 1803 / Ship Contract Design			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
DDG/CGM Program / Engineering Spt	WR	NSWC/DD : Dahlgren, VA	4.376	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDGM Program/ Engineering Spt	Various	SUPSHIP/BATH : Bath, ME	3.331	0.000		0.000		1.900	May 2024	-		1.900	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	C/CPAF	CSC/BAE : Hampton, VA	4.713	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	WR	SPAWARSSYSCEN : Charleston, SC	2.004	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CGM Program / Engineering Spt	WR	NRL : Washington, DC	0.617	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CGM Program / Engineering Spt	C/CPAF	JJMA/ALION : Washington, DC	2.947	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	C/CPAF	Lockheed Martin : Moorestown, NJ	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
DDG/CGM Program / Engineering Spt	WR	NSWC/PHD : Port Hueneme, CA	2.889	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Logistics Support	C/CPFF	CSC : Washington DC	0.085	0.000		0.000		0.000		-		0.000	0.000	0.085	-
CGM/DDG Program / Engineering Spt	WR	COMPTVEFOR : Norfolk, VA	0.420	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDGM/HED Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	4.900	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DDGM Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	7.316	0.605	Jan 2022	0.437	Jan 2023	1.212	May 2024	-		1.212	0.000	9.570	-
HED Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
HED	C/CPAF	L-3 Maritime Systems : Leesburg, VA	1.048	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CG Program / Engineering Spt	WR	NSWC/BETHESDA : Bethesda, MD	11.193	0.223	Jan 2022	0.291	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E					Project (Number/Name) 1803 / Ship Contract Design				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CG Program / Engineering Spt	Various	SUPSHIP/ PASCAGOULA : Pascagoula, MS	5.635	0.308	Jun 2022	0.434	Jun 2023	0.000		-		0.000	Continuing	Continuing	Continuing
DDG/CGM Program / Engineering Spt	C/CPFF	John Hopkins University : Laurel, MD	2.355	0.351	Apr 2022	0.428	Apr 2023	0.000		-		0.000	0.000	3.134	-
ESB	Various	Various : Various	5.276	0.000		0.000		0.000		-		0.000	0.000	5.276	-
NAVSEA Boundary Defense Capability	Various	Various : Various	1.995	0.000		0.000		0.000		-		0.000	0.000	1.995	-
CG Program / Engineering Spt	WR	NSWC/SSES : Philadelphia, PA	4.831	1.522	Jan 2022	1.247	Jan 2023	0.000		-		0.000	0.000	7.600	-
Subtotal			66.431	3.009		2.837		3.112		-		3.112	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			146.915	3.009		2.837		3.112		-		3.112	Continuing	Continuing	N/A
Remarks															
DDG 51 Flt IIA ship design to include continued development of structural reliability and other alterations to include machinery control systems improvements in FY 2024. Funding will support continued research and development efforts associated with DDGM 2.0 and back-fit of SPY-6(v)4 on the DDG-51 Class. Funds will also support continued lab upgrades for HM&E systems associated with DDGM. Engineering Support NSWC Philadelphia (1.212M) and BIW - DDGM Program /Engineering Support for (1.9M) with a 3rd qtr award.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E			Project (Number/Name) 1803 / Ship Contract Design

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 1803																												
Ship Contract Design: CGM Baseline 4 Mod Design																												
Ship Contract Design: CG Class Design																												
Ship Contract Design: DDG Technical Insertion 16 Mod Design																												
Ship Contract Design: DDG FLT IIA Mod Design																												
Ship Contract Design: CG Deliveries (CG 59,61,62,63-73)																												
Ship Contract Design: DDGM Deliveries (DDG 61,80,81,84,87)																												
Ship Contract Design: DDG Class Design																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 1803 / Ship Contract Design	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1803</b>				
Ship Contract Design: CGM Baseline 4 Mod Design	1	2022	4	2024
Ship Contract Design: CG Class Design	1	2022	4	2027
Ship Contract Design: DDG Technical Insertion 16 Mod Design	1	2022	4	2023
Ship Contract Design: DDG FLT IIA Mod Design	1	2022	2	2024
Ship Contract Design: CG Deliveries (CG 59,61,62,63-73)	1	2022	4	2023
Ship Contract Design: DDGM Deliveries (DDG 61,80,81,84,87)	1	2022	3	2023
Ship Contract Design: DDG Class Design	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2465: LHA(R) FLT Design and Total Ship Integration	280.843	7.306	12.237	19.350	-	19.350	23.605	7.013	5.656	5.729	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 333												

**A. Mission Description and Budget Item Justification**

This project provides the contract design, development, and testing efforts for the Amphibious Assault Ship General Purpose Replacement Program - LHA(R). The LHA(R) is a ship construction program designed to: (1) provide a functional replacement for the Amphibious Assault Ships which reached the end of their extended service lives (2) be a key platform in the Amphibious Readiness Group (ARG) of the future and (3) provide for an affordable and sustainable amphibious ship development program. LHA(R) ships will provide forward presence and power projection as an integral part of Joint, inter-agency, and multi-national maritime expeditionary forces. Additionally, LHA(R) will be designed to operate for sustained periods in transit to and operations in an Amphibious Objective Area to include the embarkation, deployment, and landing of a Marine Landing Force in an assault with landing craft, helicopters and tilt rotors (MV-22) supported by Joint Strike Fighters (F-35B).

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> LHA (R) FLT 0 Design and Total Ship Integration - LHA 6	1.487	0.060	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Complete the report for the LHA 6 JSF/F-35B capacity Key Performance Parameter (KPP) Follow-On Test and Evaluation (FOT&E) event.					
<b>FY 2024 Base Plans:</b> N/A					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> There are no further LHA 6 test events or activities scheduled after FY 2023.					
<b>Title:</b> LHA (R) FLT 1 Design and Total Ship Integration - LHA 8	5.819	12.177	19.350	0.000	19.350
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E		Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>LHA 8 Initiate Enterprise Air Search Radar (EASR)/AN-SPY-6(V)2 Defensive Capability Study</div> <div>LHA 8 Initiate Close-In Weapons System (CIWS)-Rolling Air Frame Missile (RAM) Block 1 Integration Study</div> <div>LHA 8 Initiate Ship Self Defense System (SSDS)/AN-SPY-6(V) 2 Defensive Capability Study</div> <div>LHA 8 Complete Landing Spot 9 Night Illumination evaluation</div> <div>LHA 8 Continue research and systems engineering for replacing Fuel at Sea (FAS) equipment no longer obtainable</div> <div>LHA 8 Continue Dynamic Interface-Virtual Environment (DIVE) Modeling and Simulation</div> <div>LHA 8 Continue Reliability, Maintainability, and Availability (RM&amp;A) analyses</div> <div>LHA 8 Continue development of the Vulnerability Assessment Report (VAR)</div> <div>LHA 8 Continue Operational Test &amp; Evaluation (OT&amp;E) preparation for Operational Assessment</div> <div>LHA 8 Continue Cyber Security Developmental Test &amp; Evaluation (DT&amp;E) efforts</div> <div>LHA 8 Continue Live Fire Test &amp; Evaluation (LFT&amp;E) efforts</div> <div>FY 2024 Base Plans:</div> <div>LHA 8 Initiate Lead Ship Operational Test (OT) Campaign (Air Warfare Ship Self Defense) Test and Evaluation (T&amp;E) events</div> <div>LHA 8 Continue research and systems engineering for replacing FAS equipment no longer obtainable</div> <div>LHA 8 Continue DIVE Modeling and Simulation</div> <div>LHA 8 Continue RM&amp;A analyses</div> <div>LHA 8 Continue development of the VAR</div> <div>LHA 8 Continue OT&amp;E preparation for Operational Assessment. LHA 8 Continue Cyber Security DT&amp;E efforts</div> <div>LHA 8 Continue LFT&amp;E efforts</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>FY 2023 to FY 2024 increase reflects the additional funds required to initiate Lead Ship OT Campaign (Air Warfare Ship Self Defense) T&amp;E events.</div>						
Accomplishments/Planned Programs Subtotals		7.306	12.237	19.350	0.000	19.350

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• SCN/3041: LHA (R) Ships	68.637	1,393.770	1,830.149	-	1,830.149	150.218	367.400	3,479.047	0.000	0.000	18,405.554
Remarks											
D. Acquisition Strategy											
LHA 6 Advance Procurement (AP) and Long Lead Time Material (LLTM) was awarded on a sole source basis to Huntington Ingalls Inc., formerly Northrop Grumman Shipbuilding, on 15 July 2005; LHA 6 Detail Design and Construction (DD&C) was awarded on 1 June 2007. The AP and LLTM efforts were subsumed by the Fixed Price Incentive, Firm Target DD&C contract.											
LHA 7 AP and LLTM was awarded on a sole source basis to Huntington Ingalls Inc., formerly Northrop Grumman Shipbuilding, on 30 June 2010; LHA 7 DD&C was awarded on 31 May 2012. The AP and LLTM efforts were subsumed by the Fixed Price Incentive, Firm Target DD&C contract.											
LHA 8 Planning, Advanced Engineering and Procurement of LLTM for an LHA Replacement (LHA(R)) Flight 1 Amphibious Assault Ship was awarded on a competitive basis to Huntington Ingalls Inc. on 30 June 2016. The option for LHA 8 DD&C contract was awarded on 16 June 2017. The Planning, Advanced Engineering and Procurement of LLTM efforts were subsumed into this Fixed Price Incentive, Firm Target DD&C contract option.											
LHA 9 Planning, Advanced Engineering and Procurement of LLTM was awarded on a sole source basis to Huntington Ingalls Inc. on 30 April 2020; the DD&C contract option was awarded on 27 October 2022 and subsumed the AP and LLTM efforts into this Fixed Price Incentive, Firm Target DD&C contract option.											
The 2023 Appropriations Act added \$289M AP funds in support of the procurement of LHA 10 - a FY 2027 ship.											

## UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship Design	WR	NSWC : Various	97.905	0.000		0.000		0.000		-		0.000	0.000	97.905	-
Ship Design	C/CPFF	HII : Pascagoula, MS	5.009	0.000		0.000		0.000		-		0.000	0.000	5.009	-
Ship Design	C/CPFF	Various : Various	44.087	0.000		0.000		0.000		-		0.000	0.000	44.087	-
Special Studies	WR	NSWC : Panama City, FL	4.800	0.000		0.000		0.000		-		0.000	0.000	4.800	-
Subtotal			151.801	0.000		0.000		0.000		-		0.000	0.000	151.801	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Engineering Services	Various	NSWC : Various	11.958	2.262	Dec 2021	8.387	Dec 2022	5.750	Dec 2023	-		5.750	Continuing	Continuing	Continuing
Subtotal			11.958	2.262		8.387		5.750		-		5.750	Continuing	Continuing	N/A
Remarks															
The increase from FY 2022 to FY 2023 supports engineering efforts to replace the obsolete FAS system and funds efforts to illuminate Landing Spot 9 for Joint Strike Fighter (JSF) F-35B unaided night landings.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	NSWC, USS Secure : Various	5.677	1.858	Dec 2021	2.034	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	Various : Various	24.237	1.926	Dec 2021	0.437	Dec 2022	13.500	Dec 2023	-		13.500	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	WR	NSWC : Various	69.894	1.175	Dec 2021	1.286	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			99.808	4.959		3.757		13.500		-		13.500	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604567N / Ship Contract Design/ Live Fire T&E						<b>Project (Number/Name)</b> 2465 / LHA(R) FLT Design and Total Ship Integration			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Remarks</b> FY 2023 to FY 2024 increase reflects the additional funds required to initiate Lead Ship OT Campaign (Air Warfare Ship Self Defense) T&E events. OT&E and FOT&E combined onto one line item.															
<b>Management Services (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Management	C/CPFF	Various : Various	16.502	0.085	Dec 2021	0.093	Dec 2022	0.100	Dec 2023	-		0.100	Continuing	Continuing	Continuing
Travel	Various	NAVSEA Travel : Washington, DC	0.763	0.000		0.000		0.000		-		0.000	0.000	0.763	-
Defense Acquisition Workforce	Various	Various : Various	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011	-
<b>Subtotal</b>			17.276	0.085		0.093		0.100		-		0.100	Continuing	Continuing	N/A
			<b>Prior Years</b>	<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			280.843	7.306		12.237		19.350		-		19.350	Continuing	Continuing	N/A
<b>Remarks</b>															



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

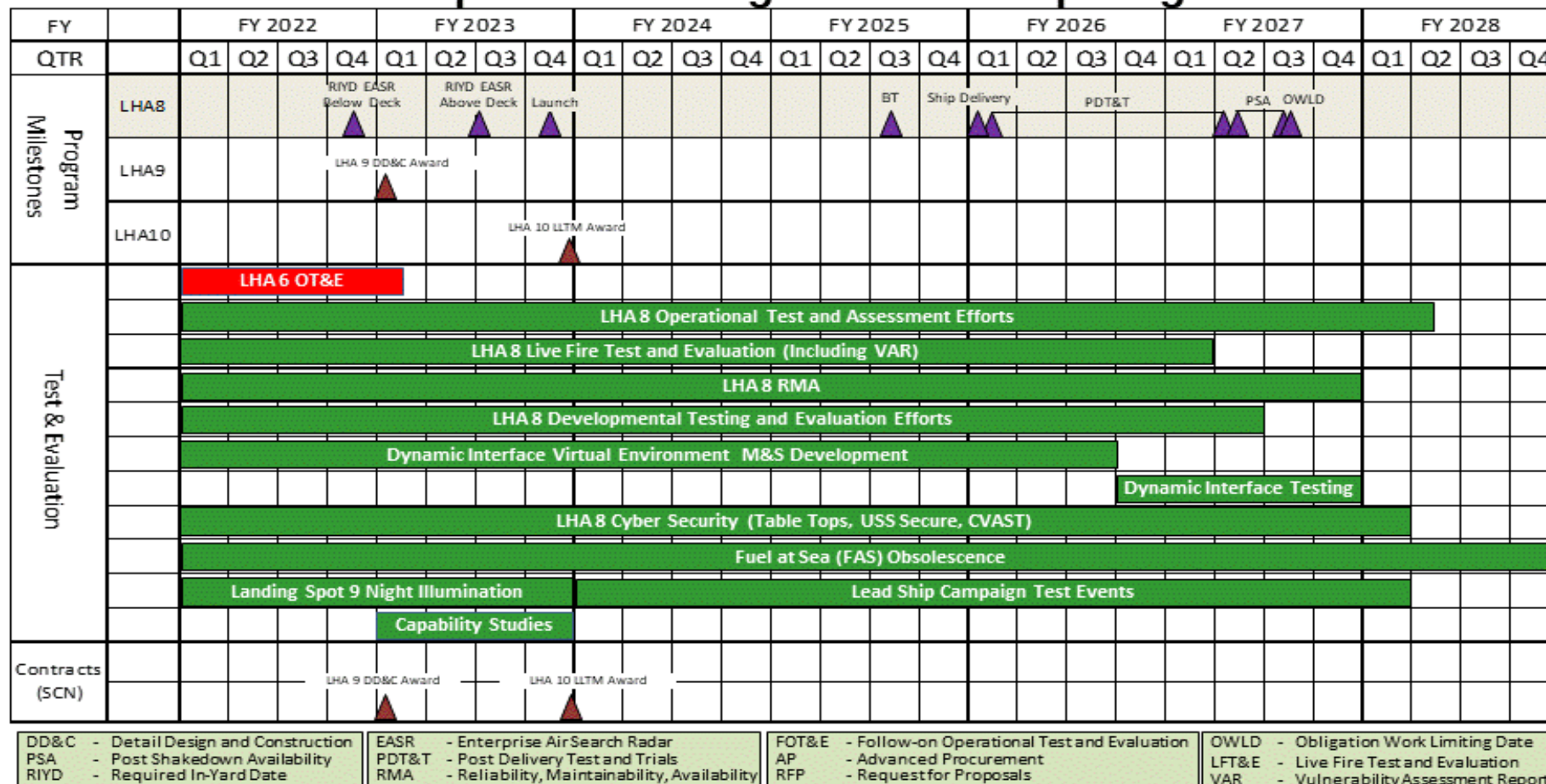
R-1 Program Element (Number/Name)

PE 0604567N / Ship Contract Design/ Live Fire T&E

Project (Number/Name)

2465 / LHA(R) FLT Design and Total Ship Integration

## LHA Replacement Design and Total Ship Integration



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 2465 / LHA(R) FLT Design and Total Ship Integration

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2465				
LHA (R) FLT Design and Total Ship Integration	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3108 / CVN 80 Total Ship Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3108: CVN 80 Total Ship Integration	138.305	24.094	26.311	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	188.710
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 223												

**A. Mission Description and Budget Item Justification**

Development and related testing of CVN 78 Class aircraft carrier specific technologies, the infusion of the ship technology base into existing and future aircraft carriers, and the potential realization of subsystem design capabilities not currently feasible. This project also funds the Contract Design efforts for the CVN 80. This project transitions the minimum sustaining technologies required to address obsolescence, critical survivability shortfalls as identified in CVN 78 Class testing, future requirements, and technologies which did not mature in time to support the CVN 78 or CVN 79. All systems developed in this project have the potential to support emerging requirements and other promising system technologies for insertion into new aircraft carrier designs. The emphasis is directed toward developing ship hull, mechanical, propulsion, electrical, aviation, warfare systems, and combat support systems, sub-systems and components to maintain aircraft carrier affordability, manpower requirements, survivability, and operational capabilities and to meet the requirements of existing and pending regulations and statutes critical to the operation of future aircraft carriers. This project also encompasses those tasks required to support CVN 80 procurement, including, but not limited to engineering support, programmatic and program support, modeling and simulation, manpower and program related studies, and design support systems, such as the Integrated Digital Environment.

This PU's efforts moved to PE 0604112N PU 2208 for FY 2024 and later.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Enterprise Radar Suite (ERS)/ Warfare Systems Development and Integration	3.828	3.635	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Continue to conduct ship integration studies for GFI vetting, tracking and delivery. Continue conducting onboard and offboard EMI / EMC studies due to new the radar sensor suite. Continue analyzing / performing integrated topside design due to the new radar sensor suite and systems associated with Joint Strike Fighter (JSF) capabilities. Continue ERS integration testing with the combat system. Continue conducting system integration studies related to the Test and Evaluation Master Plan (TEMP); platform impacts & updates to Test and Evaluation Master Plan (TEMP); cybersecurity analysis. Continue conducting RMA and ILS studies, to include trade studies and identification of investment opportunities / requirements. Continue preparing / updating					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E		Project (Number/Name) 3108 / CVN 80 Total Ship Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
acquisition support documents and cost estimates. Continue operation of the Integrated Product Team to include vendor, shipbuilder and Government.  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 and later efforts moved to PE 0604112N PU 2208.						
Title: CVN 78 Class Design for Affordability (DFA) and Systems Integration  Articles:  FY 2023 Plans: Continue conducting and supporting feasibility and tradeoff studies on new and modified shipboard systems and equipment. Identify and resolve Government Furnished Equipment and Contractor Furnished Equipment obsolescence issues to support construction. Continue to technically resolve CVN 78 class system integration issues in support of CVN 80 and CVN 81 construction. Continue development of cost saving initiatives, business case analyses, and DFA initiatives to continue to drive affordability into the carrier program. Continue performing CVN 80-specific engineering calculations and technical analysis in the areas of technical performance measures; system component calculations; environmental safety and health, and human factors engineering; survivability and vulnerability; automation systems software; shock and vibration; and engineered components support. Support Integrated Enterprise Plan (IEP) initiatives including Affordability Process Improvement (API) initiatives, industrial base deep-dives, and cost reduction initiatives to support CVN 80 and CVN 81 construction.  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 and later efforts moved to PE 0604112N PU 2208.		20.266 -	22.676 -	0.000 -	0.000 -	0.000 -
Accomplishments/Planned Programs Subtotals		24.094	26.311	0.000	0.000	0.000

## UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3108 / CVN 80 Total Ship Integration	

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RD TEN / 0604112N: Project Units 2208, 4004, 9999	117.878	116.498	118.182	-	118.182	78.504	95.504	106.139	55.900	Continuing	Continuing
• SCN / 2001: Carrier Replacement Program	1,062.205	1,465.880	1,115.296	-	1,115.296	2,416.717	1,159.211	1,842.376	2,119.562	Continuing	Continuing
• SCN / 2004: CVN 81	1,287.719	1,052.024	800.492	-	800.492	666.045	1,922.144	2,011.766	1,724.982	0.000	12,929.104
• SCN / 5300: Completion of PR Shpblgdg Progr	291.000	461.700	624.600	-	624.600	0.000	0.000	0.000	0.000	0.000	1,377.300
• OPN / 5664: Surface Training Equipment	2.475	2.468	2.430	-	2.430	2.497	2.664	2.722	2.780	Continuing	Continuing
• OMN / 1B2B: CVN 78 Ford Class Training and Sustainment	5.176	5.601	6.064	-	6.064	6.167	6.245	6.281	6.253	Continuing	Continuing
• OMN / 1B5B: Ford Class PCU Housing	1.100	11.818	15.587	-	15.587	5.100	0.800	10.600	10.812	Continuing	Continuing

**Remarks****D. Acquisition Strategy**

The CVN 80 is the third ship of the CVN 78 Class of aircraft carriers designed to replace USS ENTERPRISE and the ships of the NIMITZ Class Carriers. The CVN 80 is a modified repeat of the CVN 78, which features a new nuclear propulsion and electrical generation / distribution system, electromagnetic aircraft launching system, advanced arresting gear system, electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and total ownership costs as compared to the NIMITZ Class. Additionally, the following war-fighting benefits will be realized: increased sortie generation rate, improved ship self-defense capability, increased launch and recovery capability / flexibility, increased operational availability, and increased flexibility to support future upgrades.

CVN 80 will use late integration of Government Furnished Equipment (GFE) to provide the latest combat system and C4I suite applications within the planned system baseline. CVN 80 will improve upon processes used on CVN 78 and CVN 79 to gain efficiencies during the CVN 80 Construction Preparation and Construction periods.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E						Project (Number/Name) 3108 / CVN 80 Total Ship Integration					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Advanced Design & Development	C/CPAF	HII : VA	70.820	10.342	Nov 2021	8.000	Nov 2022	0.000		-		0.000	0.000	89.162	-		
Advanced Design & Development	C/CPFF	GRYPHON (SEI&T) : IN	5.537	0.000		2.500	Nov 2022	0.000		-		0.000	0.000	8.037	-		
Advanced Design & Development	WR	NSWC DAHLGREN : VA	12.074	3.552	Nov 2021	2.500	Nov 2022	0.000		-		0.000	0.000	18.126	-		
Advanced Design & Development	WR	NSWC CARDEROCK : MD	6.652	1.500	Nov 2021	1.500	Nov 2022	0.000		-		0.000	0.000	9.652	-		
Advanced Design & Development	WR	NSWC PHILADELPHIA : PA	3.701	1.300	Nov 2021	2.000	Nov 2022	0.000		-		0.000	0.000	7.001	-		
Advanced Design & Development	C/CPFF	NAVSEA SEAPORT : VARIOUS	19.930	3.000	Nov 2021	3.000	Nov 2022	0.000		-		0.000	0.000	25.930	-		
Advanced Design & Development	C/BA	NAWCAD PAX RIVER : MD	5.563	1.000	Nov 2021	1.000	Nov 2022	0.000		-		0.000	0.000	7.563	-		
Advanced Design & Development	WR	SPAWAR : VARIOUS	3.047	0.900	Nov 2021	0.900	Nov 2022	0.000		-		0.000	0.000	4.847	-		
Advanced Design & Development	Various	NSRP : VARIOUS	2.505	1.500	Nov 2021	1.500	Nov 2022	0.000		-		0.000	0.000	5.505	-		
Advanced Design & Development	Various	MISCELLANEOUS : VARIOUS	8.164	1.000	Nov 2021	3.411	Nov 2022	0.000		-		0.000	0.000	12.575	-		
Prior Year AD&D No Longer Funded in the FYDP	Various	VARIOUS : VARIOUS	0.312	0.000		0.000		0.000		-		0.000	0.000	0.312	-		
Subtotal			138.305	24.094		26.311		0.000		-		0.000	0.000	188.710	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			138.305	24.094		26.311		0.000		-		0.000	0.000	188.710	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

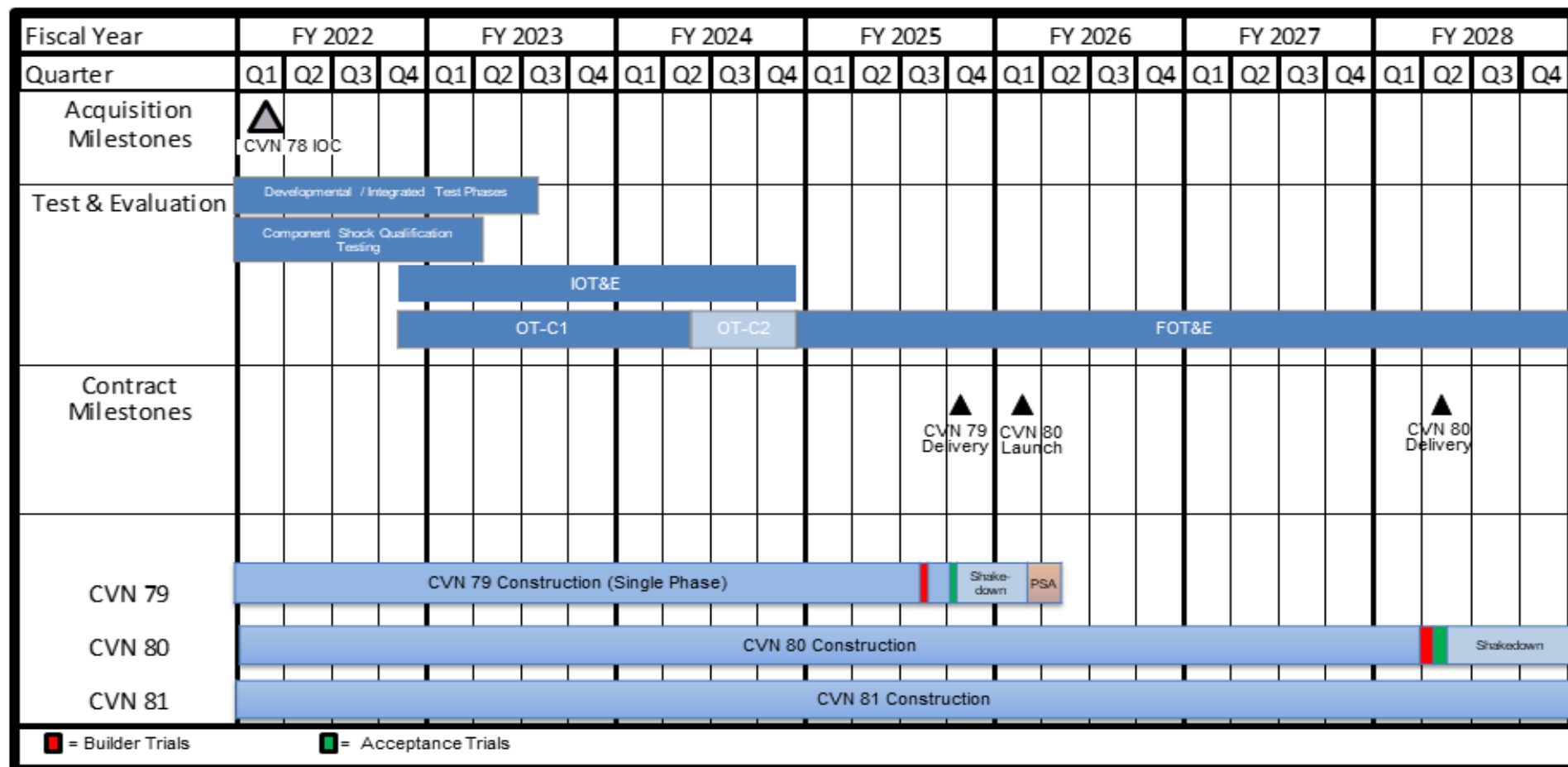
R-1 Program Element (Number/Name)

PE 0604567N / Ship Contract Design/ Live Fire T&E

Project (Number/Name)

3108 / CVN 80 Total Ship Integration

Gerald R. Ford Class Carriers



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3108 / CVN 80 Total Ship Integration

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3108				
CVN 80 Total Ship Integration	1	2022	4	2028



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3179 / CVN-79 Total Ship Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3179: CVN-79 Total Ship Integration	260.905	14.331	15.418	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	290.654
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 223												

**A. Mission Description and Budget Item Justification**

Development and related testing of CVN 78 Class aircraft carrier specific technologies, the infusion of the ship technology base into existing and future aircraft carriers, and the potential realization of subsystem design capabilities not currently feasible. This project also funds the Contract Design efforts for the CVN 79. This project transitions the minimum sustaining technologies required to address obsolescence, critical survivability shortfalls as identified in CVN 78 Class testing, future requirements, and technologies which did not mature in time to support the CVN 78. All systems developed in this project have the potential to support emerging requirements and other promising systems technologies for insertion into new aircraft carrier designs. The emphasis is directed toward developing ship hull, mechanical, propulsion, electrical, aviation, warfare systems, and combat support systems, sub-systems and components to maintain aircraft carrier affordability, manpower requirements, survivability, and operational capabilities and to meet the requirements of existing and pending regulations and statutes critical to the operation of future aircraft carriers. This project also encompasses those tasks required to develop the contract data package necessary to support CVN 79 procurement, including, but not limited to, engineering support, programmatic and program support, logistics support, modeling and simulation, manpower and program related studies, and design support systems, such as the Integrated Digital Environment. In addition, this project focuses on significant procurement and life cycle cost reduction compared to the first ship of the class. Cost reductions are sought, developed and implemented in the areas of design, labor and material.

This PU's efforts moved to PE 0604112N PU 2208 for FY 2024 and later.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> CVN-79 Total Ship Integration	14.331	15.418	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
Perform technical analysis and calculations in support of validating Technical Performance Measures (TPMs), System/Component, Environmental Safety and Health Qualification, and Human Factors Engineering, Ship/ System/Component Survivability and Vulnerability Qualification, System/Component Shock and Vibration Qualification, and other miscellaneous system related calculations. Manage fact-of-life obsolescence changes on government-furnished equipment systems, challenges encountered on contractor-furnished equipment and material analysis. Refine system integration and testing strategies for implementation on CVN 79 testing including lessons learned on CVN 78. Continue to develop and implement a tailored Integrated Test Plan for					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 3179 / CVN-79 Total Ship Integration				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
CVN 79 and CVN 80 leveraging the Submarine Integration and Test Support System (SIATSS) used by Virginia Class Submarine program to manage Alteration Installation Team (AIT) - conducted testing.													
FY 2024 Base Plans: N/A													
FY 2024 OCO Plans: N/A													
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 and later efforts moved to PE 0604112N PU 2208.													
Accomplishments/Planned Programs Subtotals									14.331	15.418	0.000	0.000	0.000
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• RD TEN / 0604112N: Project Units 2208, 4004, 9999	117.878	116.498	118.182	-	118.182	78.504	95.504	106.139	55.900	Continuing	Continuing		
• SCN / 2001: Carrier Replacement Program	1,062.205	1,465.880	1,115.296	-	1,115.296	2,416.717	1,159.211	1,842.376	2,119.562	Continuing	Continuing		
• SCN / 2004: CVN 81	1,287.719	1,052.024	800.492	-	800.492	666.045	1,922.144	2,011.766	1,724.982	0.000	12,929.104		
• SCN / 5300: Completion of PY Shpbldg Progr	291.000	461.700	624.600	-	624.600	0.000	0.000	0.000	0.000	0.000	1,377.300		
• OPN / 5664: Surface Training Equipment	2.475	2.468	2.430	-	2.430	2.497	2.664	2.722	2.780	Continuing	Continuing		
• OMN / 1B2B: CVN 78 Ford Class Training and Sustainment	5.176	5.601	6.064	-	6.064	6.167	6.245	6.281	6.253	Continuing	Continuing		
• OMN / 1B5B: Ford Class PCU Housing	1.100	11.818	15.587	-	15.587	5.100	0.800	10.600	10.812	Continuing	Continuing		
Remarks													
D. Acquisition Strategy													
The CVN 78 is the first ship of the CVN 78 Class of aircraft carriers designed to replace USS ENTERPRISE and the ships of the NIMITZ Class. The CVN 78 class will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system (EMALS), advanced arresting gear (AAG)													

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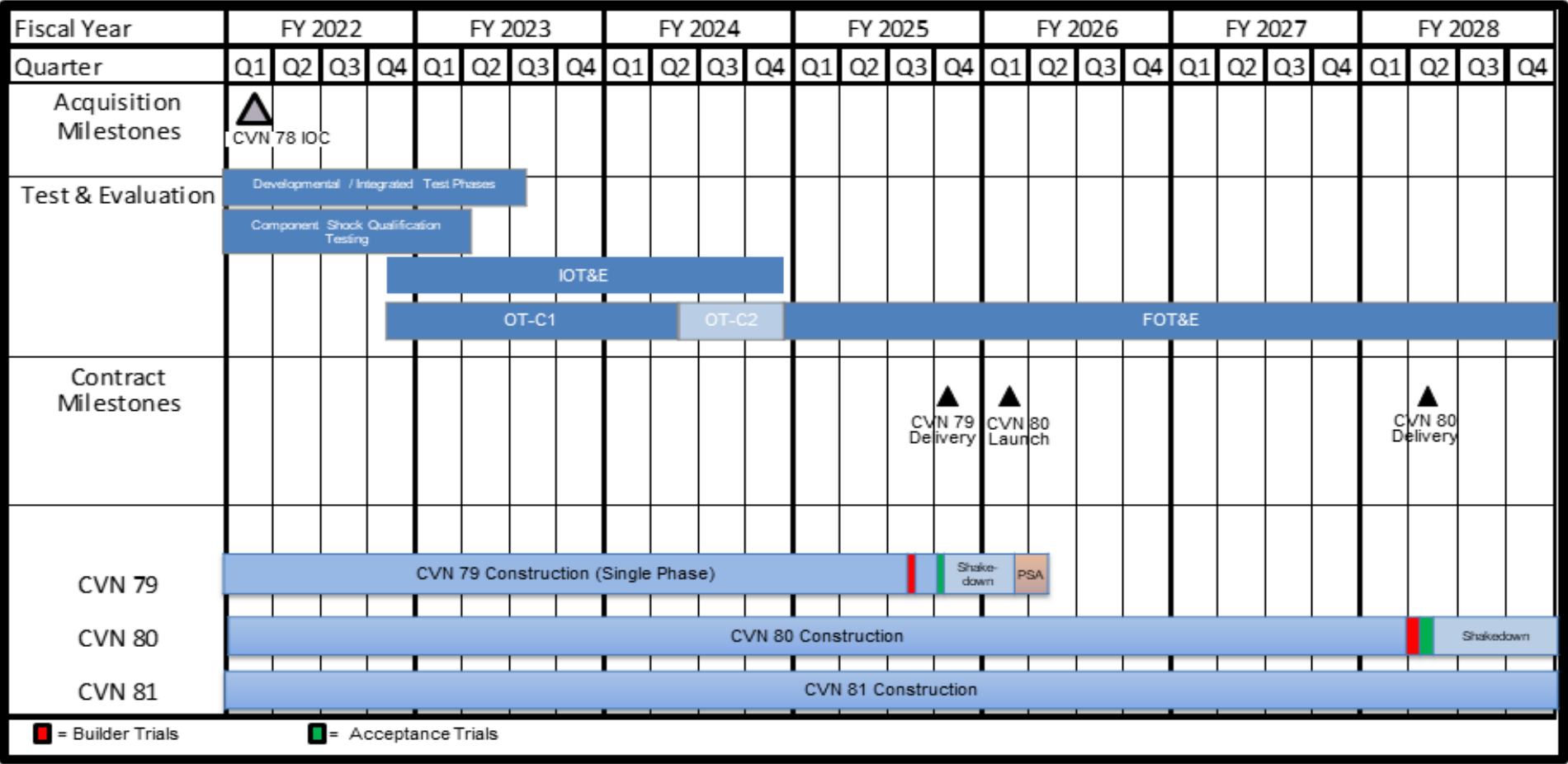
Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3179 / CVN-79 Total Ship Integration
<p>system, all electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and total ownership costs as compared to the NIMITZ Class. Additionally, the following war fighting benefits will be realized: increased sortie generation rate, improved ship self-defense capability, increased launch and recovery capability / flexibility, increased operational availability, and increased flexibility to support future upgrades.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E						Project (Number/Name) 3179 / CVN-79 Total Ship Integration			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Total Ship Integration	C/CPAF	HII : VA	122.605	13.331	Nov 2021	15.418	Nov 2022	0.000		-		0.000	0.000	151.354	-
Total Ship Integration	MIPR	NIST : Various	0.000	1.000	Nov 2021	0.000		0.000		-		0.000	0.000	1.000	-
Prior Year Total Ship Integration No Longer Funded in the FYDP	Various	VARIOUS : VARIOUS	129.279	0.000		0.000		0.000		-		0.000	0.000	129.279	-
Subtotal			251.884	14.331		15.418		0.000		-		0.000	0.000	281.633	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	VARIOUS : VARIOUS	8.840	0.000		0.000		0.000		-		0.000	0.000	8.840	-
Subtotal			8.840	0.000		0.000		0.000		-		0.000	0.000	8.840	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Management Services No Longer Funded in the FYDP	Various	VARIOUS : VARIOUS	0.181	0.000		0.000		0.000		-		0.000	0.000	0.181	-
Subtotal			0.181	0.000		0.000		0.000		-		0.000	0.000	0.181	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			260.905	14.331		15.418		0.000		-		0.000	0.000	290.654	N/A
Remarks															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																	Date: March 2023							
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E										Project (Number/Name) 3179 / CVN-79 Total Ship Integration				

Gerald R. Ford Class Carriers



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 3179 / CVN-79 Total Ship Integration

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3179				
CVN 79 Total Ship Integration	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 4007 / CVN 21 LFT&E			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
4007: CVN 21 LFT&E	85.300	4.138	3.988	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	93.426
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 223												

**A. Mission Description and Budget Item Justification**

This project encompasses Live Fire Test and Evaluation (LFT&E) efforts for the CVN 78 Class. Title 10, US Code, Section 2366, CVN 21 Operational Requirements Document (ORD) and the CVN 78 Class Test and Evaluation Master Plan (TEMP) 1610 prescribe requirements for LFT&E. The purpose of LFT&E is to evaluate covered systems in a realistic combat environment before proceeding beyond low-rate initial production. Since the application of the survivability testing required by 10 USC 2366 to a CVN 78 Class ship would be unreasonably expensive and impractical, the Secretary of Defense waived the live fire testing requirement in 2004 and submitted a certification of that determination to Congress. The CVN 78 Class LFT&E Management Plan details the testing, modeling and simulation, and engineering analyses that are being used to determine whether CVN 78 Class ships will be able to survive and carry out their missions against the threat weapons identified in the Surface Ship Capstone System Threat Assessment Report (CSTAR) that are likely to be encountered in combat. The results of these tests and analyses are documented in periodic Vulnerability Assessment Reports (VARs).

The CVN 78 Class VAR 3 was completed in the summer of 2007 and the CVN 78 Class VAR 4 is scheduled to be completed in FY 2018.

This PU's efforts moved to PE 0604112N PU 2208 for FY 2024 and later.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> CVN 21 LFT&E	4.138	3.988	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b><i>FY 2023 Plans:</i></b> Execute the CVN 78 Total Ship Survivability Trial (TSST) with continued maturation of the TSST drill guides and implementation sheets. Complete procurement of materials for execution of the TSST to include smoke machines, smoke, Uninterruptible Power Supply (UPS) batteries, etc. Complete cold checks of CVN 78 systems in support of TSST planning. Execute Hot Checks a few months prior to execution. Continue survivability modeling improvements, analyses and documentation for the final Selected Acquisition Report (SAR).					
<b><i>FY 2024 Base Plans:</i></b> N/A					
<b><i>FY 2024 OCO Plans:</i></b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604567N / <i>Ship Contract Design/ Live Fire T&amp;E</i>		<b>Project (Number/Name)</b> 4007 / CVN 21 LFT&E	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A					
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> FY 2024 and later efforts moved to PE 0604112N PU 2208.					
<b>Accomplishments/Planned Programs Subtotals</b>	4.138	3.988	0.000	0.000	0.000

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RD TEN / 0604112N: <i>Project Units 2208, 4004, 9999</i>	117.878	116.498	118.182	-	118.182	78.504	95.504	106.139	55.900	Continuing	Continuing
• SCN / 2001: <i>Carrier Replacement Program</i>	1,062.205	1,465.880	1,115.296	-	1,115.296	2,416.717	1,159.211	1,842.376	2,119.562	Continuing	Continuing
• SCN / 2004: <i>CVN 81</i>	1,287.719	1,052.024	800.492	-	800.492	666.045	1,922.144	2,011.766	1,724.982	0.000	12,929.104
• SCN / 5300: <i>Completion of PY Shpbldg Progr</i>	291.000	461.700	624.600	-	624.600	0.000	0.000	0.000	0.000	0.000	1,377.300
• OPN / 5664: <i>Surface Training Equipment</i>	2.475	2.468	2.430	-	2.430	2.497	2.664	2.722	2.780	Continuing	Continuing
• OMN / 1B2B: <i>CVN 78 Ford Class Training and Sustainment</i>	5.176	5.601	6.064	-	6.064	6.167	6.245	6.281	6.253	Continuing	Continuing
• OMN / 1B5B: <i>Ford Class PCU Housing</i>	1.100	11.818	15.587	-	15.587	5.100	0.800	10.600	10.812	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The CVN 78 is the first ship of the CVN 78 Class of aircraft carriers designed to replace USS ENTERPRISE and the ships of the NIMITZ Class. The CVN 78 will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system (EMALS), advanced arresting gear (AAG) system, all electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and total ownership costs as compared to the NIMITZ Class. Additionally, the following war fighting benefits will be realized: increased sortie generation rate, improved ship self-defense capability, increased launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.

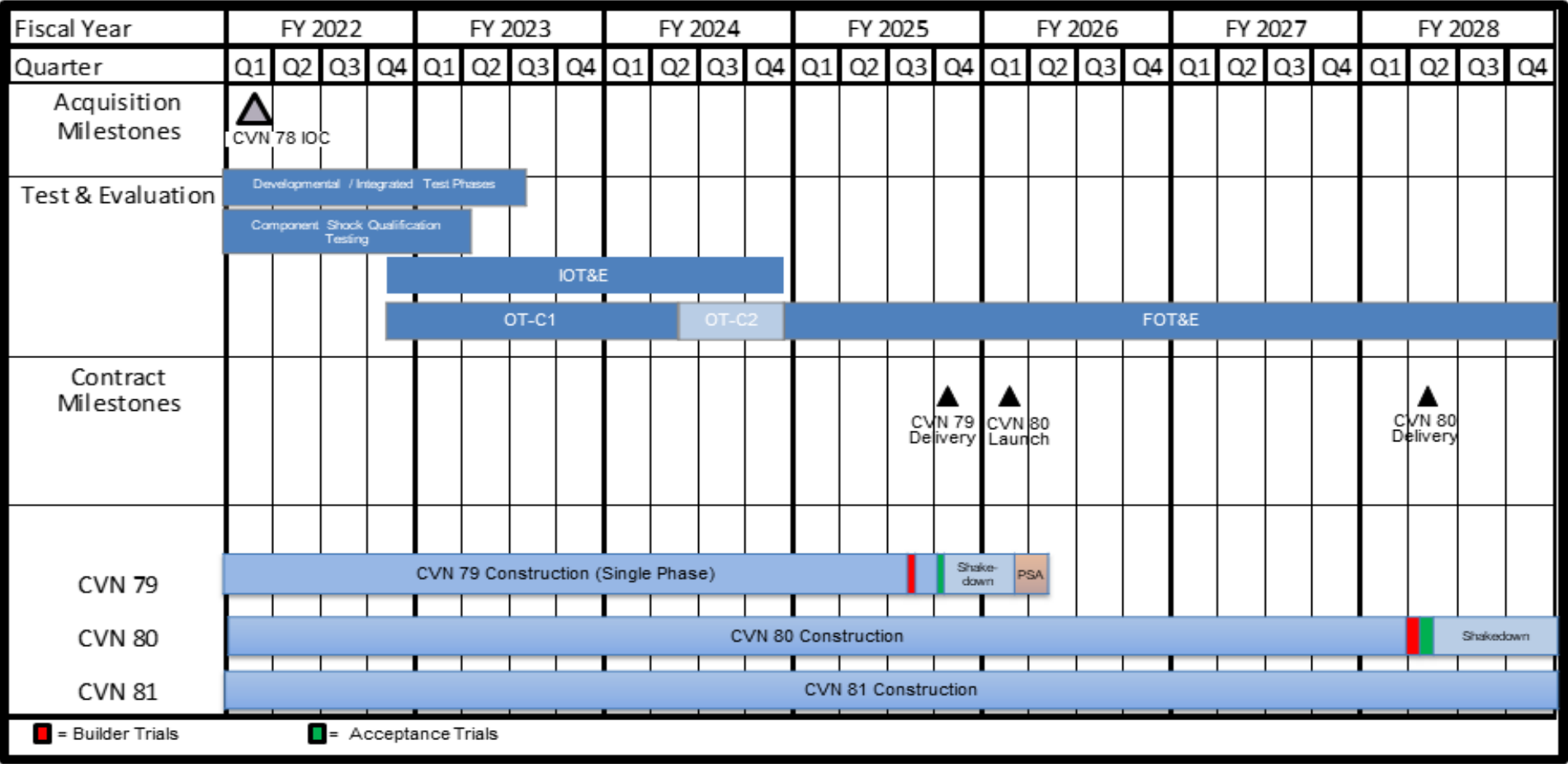


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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E				Project (Number/Name) 4007 / CVN 21 LFT&E					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation (LFT&E)	WR	NSWC Carderock : MD	70.923	3.251	Nov 2021	2.276	Nov 2022	0.000		-		0.000	0.000	76.450	-
Live Fire Test & Evaluation (LFT&E)	C/CPAF	HII : VA	13.239	0.887	Nov 2021	0.750	Nov 2022	0.000		-		0.000	0.000	14.876	-
Live Fire Test & Evaluation (LFT&E)	WR	NSWC Dahlgren : VA	0.834	0.000		0.426	Nov 2022	0.000		-		0.000	0.000	1.260	-
Live Fire Test & Evaluation (LFT&E)	WR	NAWCAD PAX RIVER : MD	0.093	0.000		0.233	Oct 2022	0.000		-		0.000	0.000	0.326	-
Live Fire Test & Evaluation (LFT&E)	WR	NSWC Philadelphia : PA	0.000	0.000		0.303	Oct 2022	0.000		-		0.000	0.000	0.303	-
Prior Year Live Fire Test & Evaluation Not Funded FYDP (PYLFT&E)	Various	VARIOUS : VARIOUS	0.201	0.000		0.000		0.000		-		0.000	0.000	0.201	-
Subtotal			85.290	4.138		3.988		0.000		-		0.000	0.000	93.416	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Management Services No Longer Funded in the FYDP	Various	VARIOUS : VARIOUS	0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	-
Subtotal			0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			85.300	4.138		3.988		0.000		-		0.000	0.000	93.426	N/A
Remarks															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																	Date: March 2023							
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E								Project (Number/Name) 4007 / CVN 21 LFT&E						

Gerald R. Ford Class Carriers



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604567N / Ship Contract Design/ Live Fire T&E	Project (Number/Name) 4007 / CVN 21 LFT&E

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4007				
CVN 21 LFT&E	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	27.584	4.267	4.177	4.279	-	4.279	4.014	4.100	4.182	4.268	Continuing	Continuing
3360: Common Processing System (CPS)	9.649	1.453	1.497	1.576	-	1.576	1.433	1.463	1.494	1.525	Continuing	Continuing
3361: Common Display System (CDS)	17.935	2.814	2.680	2.703	-	2.703	2.581	2.637	2.688	2.743	Continuing	Continuing

## **A. Mission Description and Budget Item Justification**

Common Processing System (CPS) and Common Display System (CDS) programs support developing computing infrastructure in a competitively sourced environment. The Common Display System (CDS) & Common Processing System (CPS) provide technical replacements for obsolete display and processing equipment (such as AN/UYQ-70) for multiple warfare systems aboard Surface Combatants and Large Deck class ships.

CPS equipment suite provides computer processing and memory, data storage and extraction, network systems, and Input/Output (I/O) interfaces to host software applications of Navy combat systems. These upgrades support AEGIS Modernization, AEGIS new construction, AEGIS Ashore, Ship Self Defense System (SSDS) MK2 modernization and new construction for all large deck platforms, Surface Electronic Warfare Improvement Program (SEWIP), and other Navy programs. Funding provides for technical management and Engineering Change Proposals (ECP) development for the common baseline. Funding also supports future tech refresh development efforts. Procurement and development funds provided by user programs support program unique requirements.

CDS suite consists of the Technology Insertion (TI) 16 MOD 1 configuration, a follow-on to previous designs beginning with the TI 12 variant. The Navy's TI 16 MOD 1 display and peripheral solutions include Common Display System (CDS) consoles, Thin Client Displays (TCDs), Multi-Mission Displays (MMDs), and peripheral equipment. Upgrades that include these support AEGIS modernization, AEGIS new construction, AEGIS Ashore, DDG-1000, Ship Self Defense System (SSDS) MK 2, Gun Weapon System (GWS), SEWIP, and other Navy programs. Funding provides for technical management and Engineering Change Proposals (ECP) development for the common baseline along with future tech refresh development efforts. Procurement and development funds provided by user programs support program unique requirements.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604574N / Navy Tactical Computer Resources			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	4.290	4.177	4.179	-	4.179
Current President's Budget	4.267	4.177	4.279	-	4.279
Total Adjustments	-0.023	0.000	0.100	-	0.100
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.023	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.100	-	0.100
Change Summary Explanation					
No significant changes.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources				Project (Number/Name) 3360 / Common Processing System (CPS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3360: Common Processing System (CPS)	9.649	1.453	1.497	1.576	-	1.576	1.433	1.463	1.494	1.525	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
CPS equipment suite provides computer processing and memory, data storage and extraction, network systems, and Input/Output (I/O) interfaces to host software applications of Navy combat systems. These upgrades support AEGIS Modernization, AEGIS new construction, AEGIS Ashore, Ship Self Defense System (SSDS) MK2 modernization and new construction for all large deck platforms, Surface Electronic Warfare Improvement Program (SEWIP), and other Navy programs. Funding provides for technical management and Engineering Change Proposals (ECP) development for the common baseline. Funding also supports future tech refresh development efforts. Procurement and development funds provided by user programs support program unique requirements.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Common Processing System (CPS)  Articles:  FY 2023 Plans: Continue system-engineering support of CPS development efforts required to support various Combat and Weapon System Configurations. Development efforts include but are not limited to continued qualification of cabinets along with associated parts and procurement of testing equipment, both of which impact SSDS, SEWIP, and other Navy programs. Address obsolescence issues as they are identified within the CPS equipment suite and future tech refresh development efforts.  FY 2024 Base Plans: Continue system-engineering support of CPS development efforts required to support various Combat and Weapon System Configurations. Development efforts include but are not limited to continued qualification of cabinets along with associated parts and procurement of testing equipment, both of which impact SSDS, SEWIP, and other Navy programs. Address obsolescence issues as they are identified within the CPS equipment suite and future tech refresh development efforts.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement:								1.453	1.497	1.576	0.000	1.576
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources		Project (Number/Name) 3360 / Common Processing System (CPS)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY24 increase is based on inflation and rate adjustments.						
Accomplishments/Planned Programs Subtotals		1.453	1.497	1.576	0.000	1.576
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						
D. Acquisition Strategy						
CPS Contract Award.						



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources				Project (Number/Name) 3360 / Common Processing System (CPS)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC : PHD	0.712	0.141	Oct 2021	0.145	Oct 2022	0.174	Oct 2023	-		0.174	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Dahlgren	5.043	0.698	Oct 2021	0.725	Oct 2022	0.758	Oct 2023	-		0.758	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	TBD : TBD	2.441	0.000		0.000		0.000		-		0.000	0.000	2.441	-
Subtotal			8.196	0.839		0.870		0.932		-		0.932	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Services	Various	Various : Various	1.453	0.614	Oct 2021	0.627	Oct 2022	0.644	Oct 2023	-		0.644	Continuing	Continuing	Continuing
Subtotal			1.453	0.614		0.627		0.644		-		0.644	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			9.649	1.453		1.497		1.576		-		1.576	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604574N / Navy Tactical Computer Resources

Project (Number/Name)

3360 / Common Processing System (CPS)

RDT&E/N/BA-5					PE0604574N / Navy Tactical Computer Resources																3360 / Common Processing System (CPS)															
Fiscal Year	2022				2023				2024				2025				2026				2027				2028											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Common Processing System (CPS) TI12 H Sustainment Contract																																				
Common Processing System (CPS) TI 16 (MK6 MOD 1)																																				
Common Processing System (CPS) TI 16 (MK6 MOD X)																																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources	Project (Number/Name) 3360 / Common Processing System (CPS)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3360				
Common Processing System (CPS): TI12H Sustainment Contract	1	2022	4	2024
Common Processing System (CPS): TI16 (MK6 MOD1) Production Contract	1	2022	3	2025
Common Processing System (CPS): TI16 (MK6 MOD X) Production Contract	2	2025	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources				Project (Number/Name) 3361 / Common Display System (CDS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3361: Common Display System (CDS)	17.935	2.814	2.680	2.703	-	2.703	2.581	2.637	2.688	2.743	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

CDS suite consists of the Technology Insertion (TI) 16 MOD 1 configuration, a follow-on to previous designs beginning with the TI 12 variant. The Navy's TI 16 MOD 1 display and peripheral solutions include Common Display System (CDS) consoles, Thin Client Displays (TCDs), Multi-Mission Displays (MMDs), and peripheral equipment. Upgrades that include these support AEGIS modernization, AEGIS new construction, AEGIS Ashore, DDG-1000, Ship Self Defense System (SSDS) MK 2, Gun Weapon System (GWS), SEWIP, and other Navy programs. Funding provides for technical management and Engineering Change Proposals (ECP) development for the common baseline along with future tech refresh development efforts. Procurement and development funds provided by user programs support program unique requirements.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Common Display System (CDS)	2.814	2.680	2.703	0.000	2.703
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> Continue system engineering support of CDS development efforts required to support various Combat and Weapon System Configurations. Development efforts include but are not limited to drawing updates and upgrade of equipment design, both of which impact SSDS, SEWIP, and other Navy programs. Address obsolescence's issues as they are identified within the CDS equipment suite. Support engineering analysis of issues identified within field configuration to develop resolution plan to improve reliability, readiness, or reduce operating costs, and future tech refresh development efforts.					
<b>FY 2024 Base Plans:</b> Continue system engineering support of CDS development efforts required to support various Combat and Weapon System Configurations. Development efforts include but are not limited to drawing updates and upgrade of equipment design, both of which impact SSDS, SEWIP, and other Navy programs. Address obsolescence's issues as they are identified within the CDS equipment suite. Support engineering analysis of issues identified within field configuration to develop resolution plan to improve reliability, readiness, or reduce operating costs, and future tech refresh development efforts.					
<b>FY 2024 OCO Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604574N / Navy Tactical Computer Resources		<b>Project (Number/Name)</b> 3361 / Common Display System (CDS)	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>
N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase is based on inflation and rate adjustments.					
<b>Accomplishments/Planned Programs Subtotals</b>		2.814	2.680	2.703	0.000
<b>C. Other Program Funding Summary (\$ in Millions)</b>					
N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b>					
CDS Contract award.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources				Project (Number/Name) 3361 / Common Display System (CDS)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC : PHD	1.130	0.398	Oct 2021	0.412	Oct 2022	0.445	Oct 2023	-		0.445	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Dahlgren	9.854	1.137	Oct 2021	1.027	Oct 2022	0.894	Oct 2023	-		0.894	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	General Dynamics : Fairfax, VA	2.495	0.506	Oct 2021	0.515	Oct 2022	0.506	Oct 2023	-		0.506	0.000	4.022	-
Systems Engineering	C/CPIF	DRS Technologies : Gaithersburg, MD	2.620	0.628	Oct 2021	0.401	Oct 2022	0.528	Oct 2023	-		0.528	0.000	4.177	-
Systems Engineering	C/CPIF	TBD : TBD	1.370	0.145	Oct 2021	0.140	Oct 2022	0.145	Oct 2023	-		0.145	0.000	1.800	-
Subtotal			17.469	2.814		2.495		2.518		-		2.518	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Services	Various	Various : Various	0.466	0.000		0.185	Oct 2022	0.185	Oct 2023	-		0.185	Continuing	Continuing	Continuing
Subtotal			0.466	0.000		0.185		0.185		-		0.185	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			17.935	2.814		2.680		2.703		-		2.703	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources		Project (Number/Name) 3361 / Common Display System (CDS)	

RDT&E/N/BA-5					PE 0604574N / Navy Tactical Computer Resources																3361 / Common Display System (CDS)																
Fiscal Year	2022				2023				2024				2025				2026				2027				2028												
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4									
Common Display System (CDS) TI12 H Sustainment Contract					Sustainment Contract																																
Common Display System (CDS) TI 16 (MK6 MOD 1)					Sustainment Contract																																
Common Display System (CDS) TI 16 (MK6 MOD X)									Contract Award																												

Production Contract

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604574N / Navy Tactical Computer Resources	Project (Number/Name) 3361 / Common Display System (CDS)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3361</b>				
Common Display System (CDS): TI12H Sustainment Contract	1	2022	3	2026
Common Display System (CDS): TI16 (MK6 MOD1) Production Contract	1	2022	3	2025
Common Display System (CDS): TI16 (MK6 MOD X) Production Contract	2	2024	4	2028



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification: PB 2024 Navy</b>	<b>Date: March 2023</b>
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0604601N / <i>Mine Development</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	271.218	37.054	60.793	104.731	-	104.731	119.530	110.199	106.369	67.790	Continuing	Continuing
0267: <i>Mine Improvements</i>	236.836	16.574	30.468	45.234	-	45.234	70.262	68.707	61.224	21.739	Continuing	Continuing
2993: <i>Encapsulated Effector</i>	34.382	20.480	30.325	59.497	-	59.497	49.268	41.492	45.145	46.051	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Project 0267 adjustments are associated with the development of the Long Range Aerial Delivered Maritime Mine (LRADMM). Project 2993 adjustments are associated with sensor upgrades to allow the Hammerhead system to prosecute additional targets.

The Mines Improvement PE provides resources to develop naval mine systems used to establish and maintain control of essential sea areas. Naval mines are used to deny sea areas or inflict damage on adversary shipping to hinder, disrupt, and deny adversary operations. Naval mining is employed to reduce the adversary's threat to friendly forces and preserve access. Mining complements and performs an essential part of other warfare areas; particularly strike, anti-submarine, and anti-surface warfare. Resources are utilized for developing and deploying improvements to the portfolio of naval mines. Different lines of effort are focused on specific aspects of the mission sequence, to enable offensive, defensive, and protective maritime mining across all water depths and phases of conflict. Major lines of effort include:

- 1) Development of maritime mines to enable safe standoff distances, including integration with aircraft and undersea unmanned systems
- 2) Adding command and control of deployed minefields
- 3) Improving target detection against modern threat vessels

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	37.758	60.793	62.032	-	62.032
Current President's Budget	37.054	60.793	104.731	-	104.731
Total Adjustments	-0.704	0.000	42.699	-	42.699
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.704	0.000			
• Program Adjustments	0.000	0.000	10.000	-	10.000
• Rate/Misc Adjustments	0.000	0.000	32.699	-	32.699

**Change Summary Explanation**

FY 2022: reflects a net decrease of \$0.704M for SBIR assessments.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604601N / Mine Development	
FY 2023: No adjustments FY 2024: reflects an increase of \$7.211M for Quickstrike ER testing. There is also an increase of \$24.970M to fund Long Range Aerial Delivered Maritime Mine (LRADMM) and an increase of \$10M to fund Hammerhead sensor improvements. \$0.518M for misc adjustments.		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604601N / Mine Development				Project (Number/Name) 0267 / Mine Improvements			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0267: Mine Improvements	236.836	16.574	30.468	45.234	-	45.234	70.262	68.707	61.224	21.739	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

FY 2024 reflects an increase associated with the development of the Long Range Aerial Delivered Maritime Mine (LRADMM).

Naval mines are used to deter or control adversary movements, including surface ships and submarines. Funding supports the capability to maintain effectiveness of mines facing new threat targets with increasing emphasis on major regional conflicts and great power competition. The three major project areas are:

- 1) Aerial delivery development efforts address capabilities required by a Joint Emergent Operational Needs Statement (JEONS). QS-ER adds GPS-guidance and glide flight gear to the Quickstrike (QS) series to reduce risk to delivery aircraft by introducing precision placement and mid-range standoff. LRADMM adds long range stand-off distance and maintains the precision placement capability.
- 2) Clandestine Delivered Mine MK68 (CDM MOD 0) provides a required capability by converting legacy mining systems for delivery by Extra Large Unmanned Undersea Vehicles (XLUUV) and/or surface platform in support of a JEONS. This capability allows access to contested environments and reduces risk by using unmanned platforms. Upgrades to CDM incorporate the programmable Targe Detection Device (DD) MK-71, adds remote control arming (MOD 1), and reversible arming (MOD 2) functions through future upgrades for increased operational flexibility and safety for emplaced minefields. Additional efforts include transitioning an explosive section design into the CDM program that is in development under the Compact Encapsulated Effector (C- ENCAP) effort that is managed by the Office of Naval Research (ONR).
- 3) Quickstrike Mod 3 improves effectiveness of existing mines against modern threats by using a programmable TDD MK-71. Quickstrike Mod 3 utilizes modeling and analysis to improve target detection and response by developing optimized mine settings and firing algorithms. Minefield planning improvements include new targeting algorithms, mine settings, and corresponding damage data for weapon/target pairs into existing minefield planning software.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Product Development	10.776	21.889	38.788	0.000	38.788
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
Quickstrike Mod 3:					
- Continue modeling and generating operational data for target detection algorithm for minefield planning improvements, based on updated fleet priority targets.					
- Establish improved target detecting device requirements documents, to include additional sensing modalities and improved performance.					
Quickstrike-ER:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023					
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604601N / Mine Development		Project (Number/Name) 0267 / Mine Improvements				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Complete Operational Flight Profile (OFP) and Wing Kit TDP</p> <p>- Complete Non-Functional Wing kit test articles fabrication</p> <p>- Initiate development Functional Wing Kit test articles</p> <p>- Complete Universal Load Adapter test articles fabrication</p> <p>CDM:</p> <p>- Complete development of safe and arming device in support of CDM reversible arming</p> <p>- Provide support for explosive section design (C-ENCAP Future Naval Capability (FNC))</p> <p>- Complete ACOMMs system development</p> <p><b>FY 2024 Base Plans:</b></p> <p>Quickstrike Mod 3:</p> <p>-Continue target detection algorithm development for minefield planning improvements, based on updated fleet priority targets.</p> <p>- Deliver Air Cushioned Vehicle (ACV) detection algorithm</p> <p>Quickstrike-ER:</p> <p>- Complete Functional Wing Kit Test Articles</p> <p>- Award LRIP Option 1 and commence bomb and wing kit production</p> <p>- Complete initial BLU-117 production</p> <p>- Complete Load Adapter Production</p> <p>Long Range Aerial Delivered Maritime Mine (LRADMM):</p> <p>- Develop design and performance specifications and statement of work</p> <p>- Award LRADMM Contract</p> <p>- New explosive fill development for LRADMM warhead.</p> <p>CDM:</p> <p>- Begin integration of explosive section for FNC effort to CDM</p> <p>- Receive approval from Weapons System Explosive Safety Review Board (WSESRB) for CDM MOD 1 fielding</p> <p>- Commence CDM MOD 1 Kit Assembly</p> <p><b>FY 2024 OCO Plans:</b></p>								

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604601N / Mine Development		Project (Number/Name) 0267 / Mine Improvements		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 increase associated with completion of QS-ER wing kit development in FY 24.						
Title: Management  <div>Articles:</div>		1.029 -	0.872 -	0.621 -	0.000 -	0.621 -
FY 2023 Plans: - Continue to provide programmatic and financial support for CDM programs.						
FY 2024 Base Plans: - Continue to provide programmatic and financial support for CDM and QS programs.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: No significant change.						
Title: Test and Evaluation  <div>Articles:</div>		4.769 -	7.707 -	5.825 -	0.000 -	5.825 -
FY 2023 Plans: Quickstrike Mod 3: - TDD MK 71 Target Detection Algorithm testing and evaluation.						
Quickstrike-ER: - Complete Operational Demonstration 4 - Continue mine component qualification, load adapter qualification, safety and operational flight-testing for certification aboard B-52.						
CDM: - Begin CDM MOD 1 test and evaluation.						
FY 2024 Base Plans: Quickstrike Mod 3: - Conduct B-52 and B-1 Flight Certification events for QS MK62/MK63						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy							<b>Date:</b> March 2023				
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604601N / <i>Mine Development</i>			<b>Project (Number/Name)</b> 0267 / <i>Mine Improvements</i>				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>							<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Quickstrike-ER: - Complete MK64 MOD 5/B-52 Flight certification test events - Conduct Quick Reaction Assessment (QRA)/Developmental Test (DT)  CDM: - Complete CDM MOD 1 test and evaluation.  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> No significant change.											
<b>Accomplishments/Planned Programs Subtotals</b>							16.574	30.468	45.234	0.000	45.234
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• WPN 3231: <i>Maritime Mines</i>	8.567	9.282	58.800	-	58.800	77.765	79.150	81.382	83.572	0.000	485.420
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
In order to meet accelerated timelines, the QS-ER wing kit is being developed under a sole source contract with Boeing. QS-ER leak resistant bomb bodies are being developed and will be procured through an active NAVAIR contract vehicle. QS MOD 3 and CDM mine kits, including target detecting devices, adapters, and other hardware components are procured via various small contract vehicles or developed internally by the Government. All QS and CDM software is developed and maintained by Government activities.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604601N / Mine Development				Project (Number/Name) 0267 / Mine Improvements					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CDM: Primary Hardware Development	WR	NSWC PC : Panama City, FL	124.625	1.290	Oct 2021	4.770	Oct 2022	2.314	Oct 2023	-		2.314	Continuing	Continuing	Continuing
CDM: Primary Hardware Development	WR	NSWC IH : Indian Head, MD	16.668	0.130	Oct 2021	4.328	Oct 2022	3.125	Oct 2023	-		3.125	Continuing	Continuing	Continuing
CDM: Primary Hardware Development	C/CPFF	JHU/APL : Baltimore, MD	10.209	0.260	Nov 2021	0.500	Nov 2022	0.688	Nov 2023	-		0.688	Continuing	Continuing	Continuing
CDM: System Safety	WR	NUWC NPT : Newport, RI	0.549	0.410	Oct 2021	0.100	Oct 2022	0.000		-		0.000	0.000	1.059	-
QS Mod 3: Ancillary Hardware Development	Various	Various : Various	8.956	1.185	Oct 2021	2.139	Oct 2022	0.000		-		0.000	Continuing	Continuing	Continuing
QS Mod 3: Software Development	WR	NSWC PC : Panama City, FL	30.366	1.724	Oct 2021	1.200	Oct 2022	0.750	Oct 2023	-		0.750	Continuing	Continuing	Continuing
QS-ER: Hardware Development	WR	NSWC IH : Indian Head, MD	6.031	0.420	Oct 2021	0.000		0.000		-		0.000	0.000	6.451	-
QS-ER: Hardware Development	WR	NSWC PC : Panama City, FL	4.078	4.747	Oct 2021	0.000		0.000		-		0.000	0.000	8.825	-
QS-ER: Hardware Development	C/CPFF	Boeing : St. Charles, MO	9.780	0.000		7.267	Oct 2022	6.941	Oct 2023	-		6.941	Continuing	Continuing	Continuing
QS-ER: Hardware Development	WR	Eglin AFB : Okaloosa, FL	1.250	0.200	Oct 2021	0.440	Oct 2022	0.000		-		0.000	0.000	1.890	-
QS-ER: Hardware Development	WR	NUWC NPT : Newport, RI	0.240	0.200	Oct 2021	0.164	Oct 2022	0.000		-		0.000	0.000	0.604	-
QS-ER: Hardware Development	C/CPAF	NAVAIR : Pax River, MD	3.000	0.210	Oct 2021	0.981	Oct 2022	0.000		-		0.000	0.000	4.191	-
LRADMM: Hardware Development	C/CPFF	Various : Various	0.000	0.000		0.000		16.000	Jun 2024	-		16.000	0.000	16.000	-
LRADMM: Engineering Support	WR	NSWC PC : Panama City, FL	0.000	0.000		0.000		4.000	Oct 2023	-		4.000	0.000	4.000	-
LRADMM: Engineering Support	WR	NSWC IH : Indian Head, MD	0.000	0.000		0.000		4.970	Oct 2023	-		4.970	0.000	4.970	-
Subtotal			215.752	10.776		21.889		38.788		-		38.788	Continuing	Continuing	N/A

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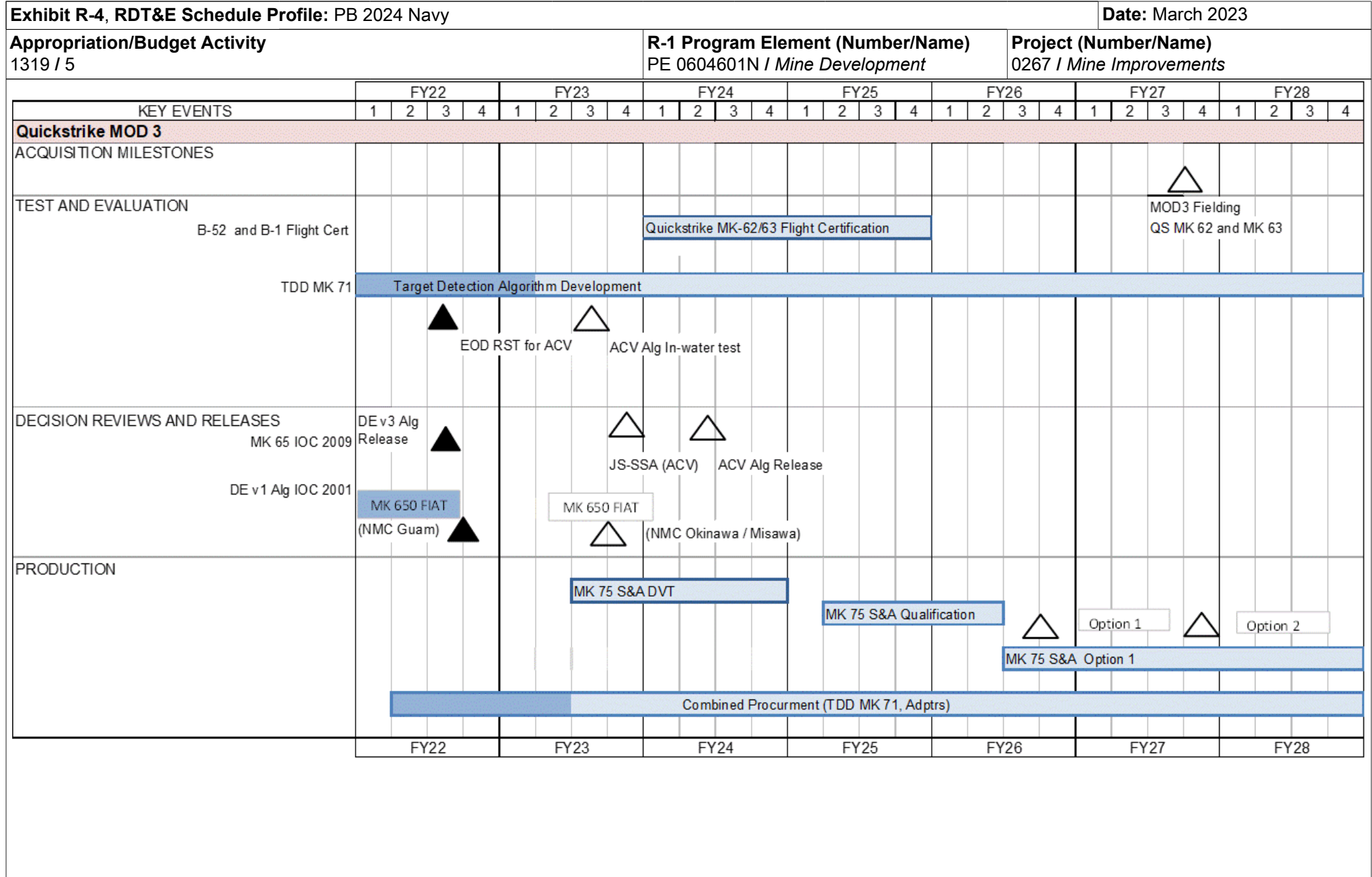
Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604601N / Mine Development				Project (Number/Name) 0267 / Mine Improvements					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
QS-ER: Engineering Support	C/CPFF	JHU/APL : Baltimore, MD	0.860	0.000	Oct 2021	0.000		0.000		-		0.000	0.000	0.860	-
Subtotal			0.860	0.000		0.000		0.000		-		0.000	0.000	0.860	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC IH-CDM : Indian Head, MD	3.159	2.619	Oct 2021	1.900	Oct 2022	1.995	Oct 2023	-		1.995	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC PC-QSM3 : Panama City, FL	10.867	1.294	Oct 2021	1.700	Oct 2022	2.730	Oct 2023	-		2.730	0.000	16.591	-
Developmental Test & Evaluation (DT&E)	WR	Eglin, AFB-QSER : Eglin AFB, FL	1.344	0.428	Oct 2021	2.667	Oct 2022	0.400	Oct 2023	-		0.400	0.000	4.839	-
Developmental Test & Evaluation (DT&E)	WR	Tinker AFB-QSER : Oklahoma City, OK	2.000	0.428	Oct 2021	1.440	Oct 2022	0.700	Oct 2023	-		0.700	0.000	4.568	-
Subtotal			17.370	4.769		7.707		5.825		-		5.825	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CDM: Program Management Support	C/CPAF	Various : Various	2.585	0.760	Oct 2021	0.641	Oct 2022	0.390	Oct 2023	-		0.390	Continuing	Continuing	Continuing
QS-ER: Program Management Support	C/CPAF	Various : Various	0.269	0.269	Oct 2021	0.231	Oct 2022	0.231	Oct 2023	-		0.231	0.000	1.000	-
Subtotal			2.854	1.029		0.872		0.621		-		0.621	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			236.836	16.574		30.468		45.234		-		45.234	Continuing	Continuing	N/A



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy							Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604601N / Mine Development		Project (Number/Name) 0267 / Mine Improvements			
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Remarks									

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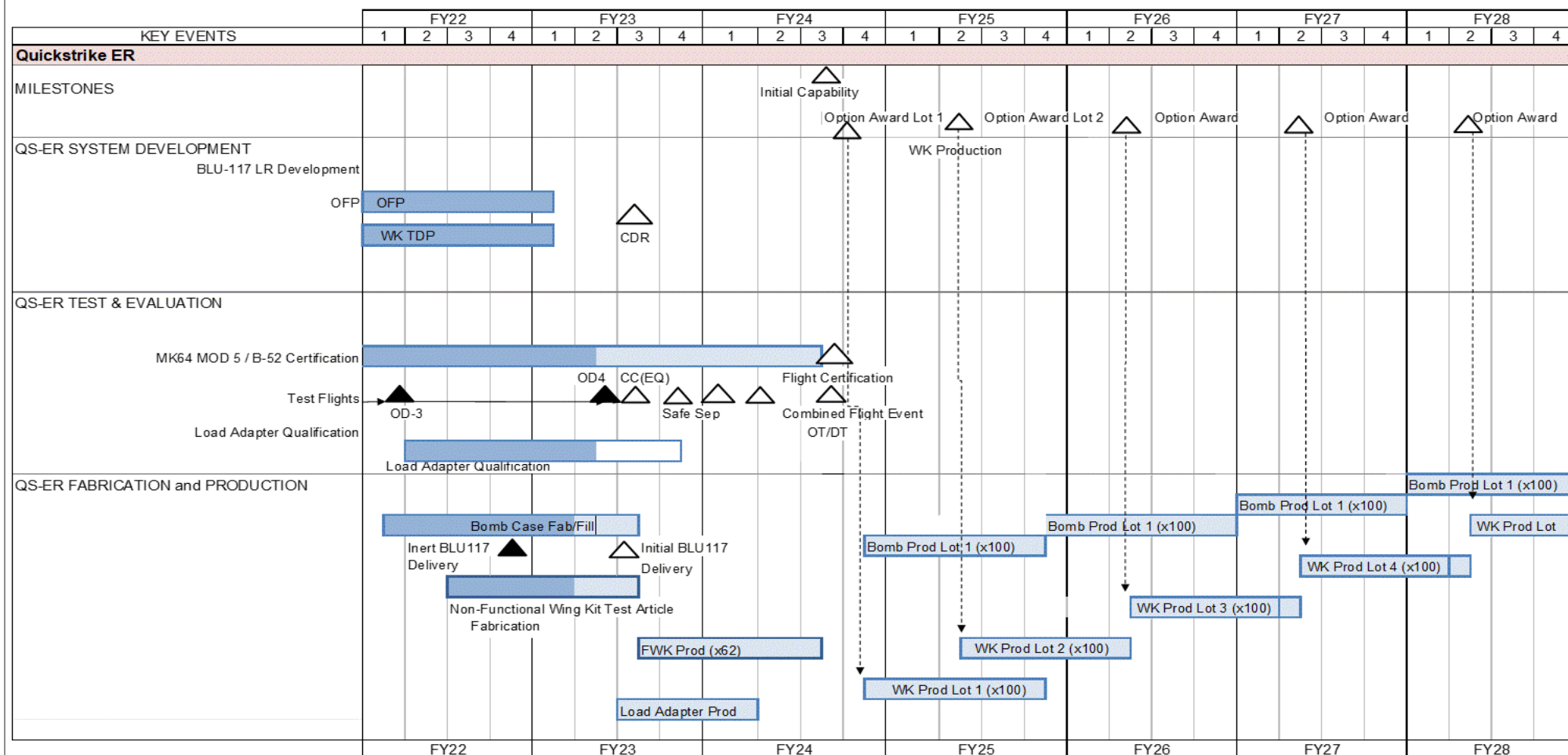
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604601N / Mine Development

Project (Number/Name)  
0267 / Mine Improvements



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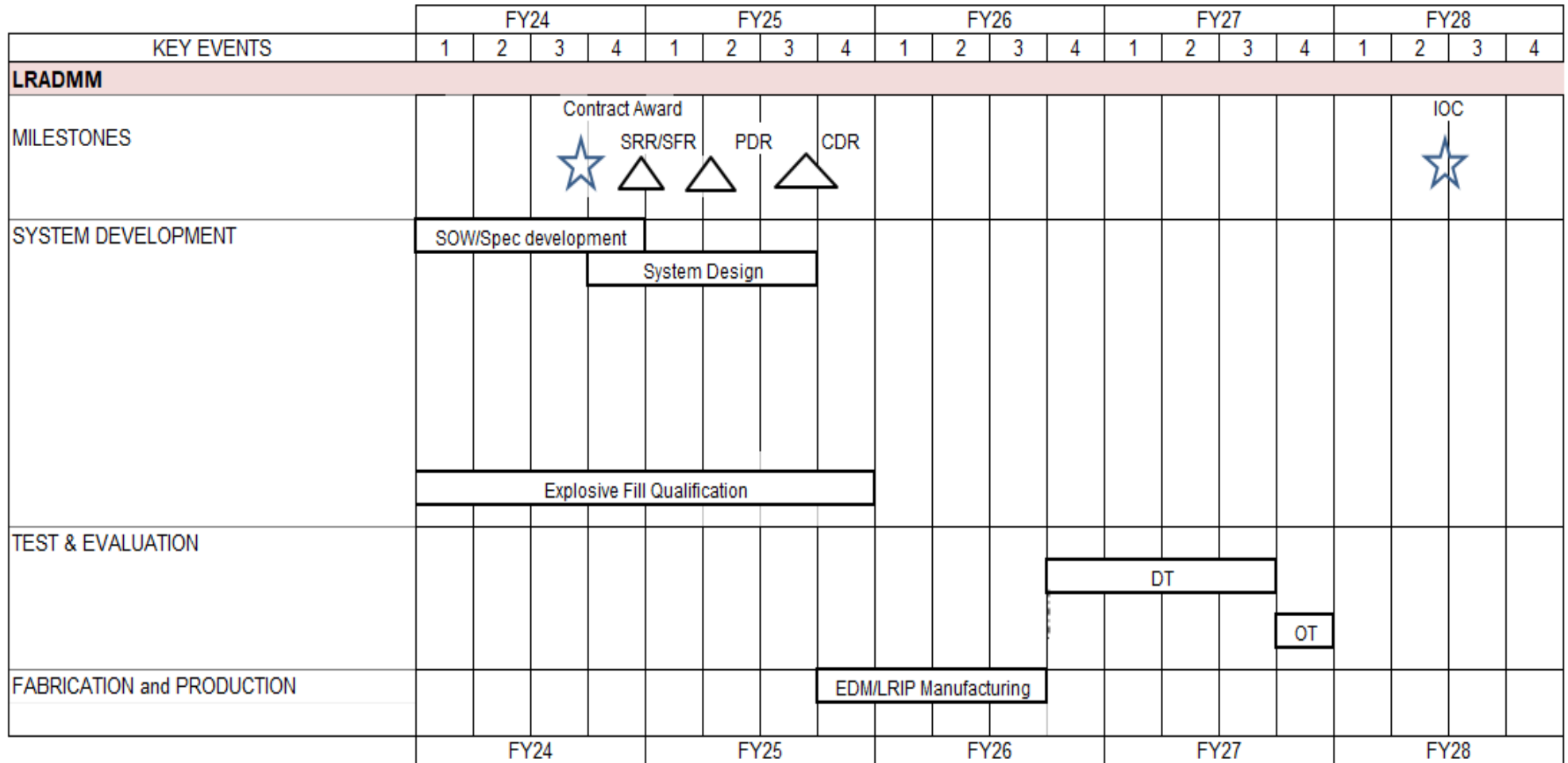
**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**  
1319 / 5

**R-1 Program Element (Number/Name)**  
PE 0604601N / *Mine Development*

**Project (Number/Name)**  
0267 / *Mine Improvements*



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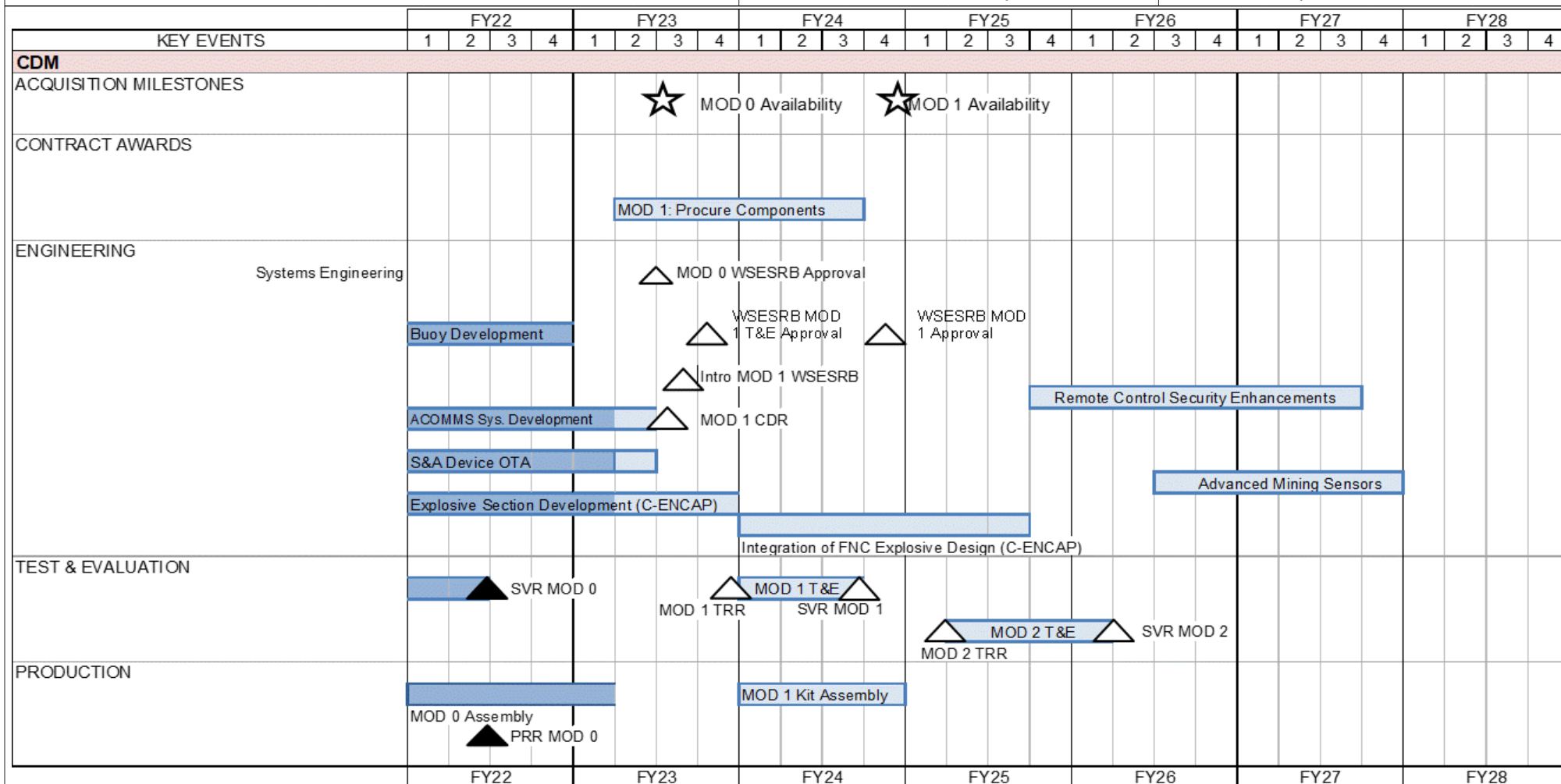
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604601N / Mine Development

Project (Number/Name)  
0267 / Mine Improvements



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604601N / Mine Development

Project (Number/Name)

0267 / Mine Improvements

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Quickstrike</b>				
Acquisition: Quickstrike Mod 3: QS MK 62 & MK 63 Fielding	4	2027	4	2027
Acquisition: Quickstrike Extended Range: Initial Capability	3	2024	3	2024
Acquisition: Quickstrike Extended Range: Non-Functional Wing Kit Fabrication	3	2022	3	2023
Acquisition: Quickstrike Extended Range: Functional Wing Kit Fabrication	3	2023	3	2024
Acquisition: Quickstrike Extended Range: Load Adapter Fabrication	3	2023	4	2024
Acquisition: Quickstrike Extended Range: Incremental WK Production Lots	4	2024	4	2028
System Development: Quickstrike Mod 3: Incremental Algorithm Releases	2	2022	2	2024
System Development: Quickstrike Extended Range: QS-ER System Development Events	1	2022	2	2023
System Development: Quickstrike Extended Range: WK TDP	1	2022	1	2023
Testing & Evaluation: Quickstrike Mod 3: Flight Certification	1	2024	4	2024
Testing & Evaluation: Quickstrike Mod 3: TDD MK 71 Test & Evaluation	1	2022	4	2028
Testing & Evaluation: Quickstrike Mod 3: EOD RST for Air Cushion Vehicle	3	2022	3	2022
Testing & Evaluation: Quickstrike Extended Range: MK 64 Mod 5 / B-52 Certification	1	2022	3	2024
Testing & Evaluation: Quickstrike Extended Range: Incremental Test Flight Events	1	2022	3	2024
Testing & Evaluation: Quickstrike Extended Range: Adapter Qualification	2	2022	4	2023
Testing & Evaluation: Quickstrike Extended Range: Quick Reaction Assessment	3	2024	3	2024
<b>LRADMM</b>				
Acquisition: Award LRADMM Contract	3	2024	3	2024
System Development: Explosive Fill Qualification	1	2024	4	2025
<b>Clandestine Mining</b>				
Acquisition Milestones: System Development: Explosive Fill Qualification	1	2024	4	2025

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604601N / Mine Development

## Project (Number/Name)

0267 / Mine Improvements

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestones: Clandestine Mining: MOD 0 Availability	3	2023	3	2023
Acquisition Milestones: Clandestine Mining: MOD 1 Availability	4	2024	4	2024
Acquisition Milestones: Procure MOD 1 Components	2	2023	3	2024
Acquisition Milestones: MOD 0 PRR	2	2022	2	2022
Acquisition Milestones: MOD 0 Assembly	1	2022	1	2023
Acquisition Milestones: MOD 1 Assembly	1	2024	4	2024
System Development: MOD 0 WSESRB Approval	3	2023	3	2023
System Development: MOD 1 ACOMMs Systems Development	1	2022	2	2023
System Development: WSESRB MOD 1 T&E Approval	2	2023	2	2023
System Development: WSESRB MOD 1 Approval	2	2024	2	2024
System Development: Intro MOD 1 WSESRB	1	2023	1	2023
System Development: Remote Control Security Enhancements	4	2025	3	2027
System Development: Integration of FNC Explosive Design (C-ENCAP)	1	2024	3	2025
System Development: Advanced Mining Sensors	3	2026	4	2027
Testing & Evaluation: Clandestine Mining: Testing MOD 0	1	2022	2	2022
Testing & Evaluation: Systems Verification Review MOD 0	2	2022	2	2022
Testing & Evaluation: Clandestine Mining Testing MOD 1	3	2023	1	2024
Testing & Evaluation: Systems Verification Review MOD 1	1	2024	1	2024
Testing & Evaluation: Clandestine Mining: Testing MOD 2	2	2025	1	2026
Testing & Evaluation: Systems Verification Review MOD 2	1	2026	1	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604601N / <i>Mine Development</i>				Project (Number/Name) 2993 / <i>Encapsulated Effector</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2993: <i>Encapsulated Effector</i>	34.382	20.480	30.325	59.497	-	59.497	49.268	41.492	45.145	46.051	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

FY 2024 adjustment of \$10M is associated with sensor upgrades to allow the Hammerhead system to prosecute additional targets.

The Encapsulated Effector, aka Hammerhead, program complements existing shallow-water mines by providing maritime mining capability in deeper water depths. Based on the urgency of the requirement, the Hammerhead program utilizes Section 804 authority to streamline acquisition of an initial capability. The system uses existing kinetic payloads to engage enemy targets, and provides a wide area of coverage per each weapon. The program uses a self-contained, propelled weapon to engage the target when a target is detected. The system uses modern sensing and processing technology to enable accurate targeting at increased range and maintains minefield resilience even as weapons are expended against targets. The result is expanded operating areas to restrict or deny adversary access to the intended area while using fewer weapons than traditional mines. Additional efforts include transitioning an encapsulation system with different end effectors under the Compact Encapsulated Effector (C-ENCAP) future naval capability (FNC) that is managed by the Office of Naval Research (ONR).

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Product Development	17.349	25.919	46.386	0.000	46.386
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Conduct Preliminary Design Review to allocate system functions to system design.</li> <li>- Conduct Critical Design Review establishing the initial product baseline.</li> <li>- Begin fabrication of the Hammerhead prototypes in support of contractor and developmental testing.</li> <li>- Continue torpedo software and hardware updates to enable underwater launch.</li> <li>- Begin surface launch development and integration.</li> </ul>					
<b>FY 2024 Base Plans:</b> <ul style="list-style-type: none"> <li>- Begin development and integration of Future Naval Capability (FNC) End Effector and Encapsulation System</li> <li>- Begin development of sensor upgrades to prosecute additional targets</li> <li>- Begin software updates to support prosecution of additional targets</li> <li>- Delivery of Government prototypes to support of Quick Reaction Assessment and Developmental Testing</li> <li>- Conduct Test Readiness Review</li> <li>- Conduct Systems Verification Review</li> </ul>					
<b>FY 2024 OCO Plans:</b>					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604601N / Mine Development	Project (Number/Name) 2993 / Encapsulated Effector			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 increase associated with Compact Encapsulated Effector (C-ENCAP) Future Naval Capabilities (FNC) effort and sensor upgrades to prosecute additional targets						
Title: Support  Articles:		0.100 -	0.100 -	0.580 -	0.000 -	0.580 -
FY 2023 Plans: - Continue engineering support of Hammerhead mine design and development.						
FY 2024 Base Plans: - Continue engineering support of Hammerhead mine design and development. - Begin engineering support of FNC End Effector and Encapsulation System (C-ENCAP)						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 increase supports additional systems engineering support for FNC and sensor upgrade efforts (MOD 2).						
Title: Management  Articles:		0.223 -	0.640 -	0.640 -	0.000 -	0.640 -
FY 2023 Plans: - Continue to provide programmatic and financial support.						
FY 2024 Base Plans: - Continue to provide programmatic and financial support.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: N/A						
Title: Test and Evaluation  Articles:		2.808 -	3.666 -	11.891 -	0.000 -	11.891 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604601N / <i>Mine Development</i>		<b>Project (Number/Name)</b> 2993 / <i>Encapsulated Effector</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p><b><i>FY 2023 Plans:</i></b>  - Conduct contractor testing and continue weapon software and hardware testing. Effort includes test assets and range support to verify weapon modifications.</p> <p><b><i>FY 2024 Base Plans:</i></b>  - Complete contractor testing  - Conduct Developmental Testing  - Conduct Quick Reaction Assessment  - Begin regression tests</p> <p><b><i>FY 2024 OCO Plans:</i></b>  N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b>  FY 2023 to FY 2024 increase associated with developmental testing, QRA</p>					
<b>Accomplishments/Planned Programs Subtotals</b>		20.480	30.325	59.497	0.000
<b>C. Other Program Funding Summary (\$ in Millions)</b>					
N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b>					
<p>The Hammerhead program leveraged Navy warfare center expertise to perform requirements analysis and engineering architecture design to develop system requirements. The system requirements and interface requirements documents are used by the prime contractor to develop, test, integrate, and produce Hammerhead mines. The contractor is responsible for the final design to optimize producibility, manufacture engineering design models to be used during testing, and test planning and execution to gather the required data to support a production decision. Hammerhead will utilize existing lightweight torpedo inventory and incorporate modifications to enable underwater launch. The program follows an evolutionary acquisition approach by providing incremental performance updates to the system.</p>					

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604601N / Mine Development

Project (Number/Name)

2993 / Encapsulated Effector

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC PC : Panama City, FL	9.006	3.404	Oct 2021	3.542	Oct 2022	9.497	Oct 2023	-		9.497	Continuing	Continuing	Continuing
Weapon Interfaces & Modifications	WR	NUWC NPT : Newport, RI	4.972	1.500	Oct 2021	1.052	Oct 2022	9.800	Oct 2023	-		9.800	Continuing	Continuing	Continuing
System Safety	WR	NUWC NPT : Newport, RI	0.723	0.100	Oct 2021	0.097	Oct 2022	0.300	Oct 2023	-		0.300	0.000	1.220	-
System Development & Integration	C/CPFF	GDMS : Various	15.390	12.345	Jan 2022	21.228	Jan 2023	22.372	Nov 2023	-		22.372	Continuing	Continuing	Continuing
Primary Hardware Development	Various	Various : Various	0.000	0.000		0.000		3.750	Jan 2024	-		3.750	0.000	3.750	-
Weapon Interfaces & Modifications	Reqn	PSU-ARL : PSU-ARL	0.000	0.000		0.000		0.250	Jan 2024	-		0.250	0.000	0.250	-
Primary Hardware Development	Reqn	JHU-APL : JHU-APL	0.000	0.000		0.000		0.417	Jan 2024	-		0.417	0.000	0.417	-
<b>Subtotal</b>			30.091	17.349		25.919		46.386		-		46.386	Continuing	Continuing	N/A

## Support (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	TBD	ISPA Technology : Panama City, FL	0.170	0.100	Nov 2021	0.100	Nov 2022	0.580	Nov 2023	-		0.580	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.170	0.100		0.100		0.580		-		0.580	Continuing	Continuing	N/A

## Test and Evaluation (\$ in Millions)

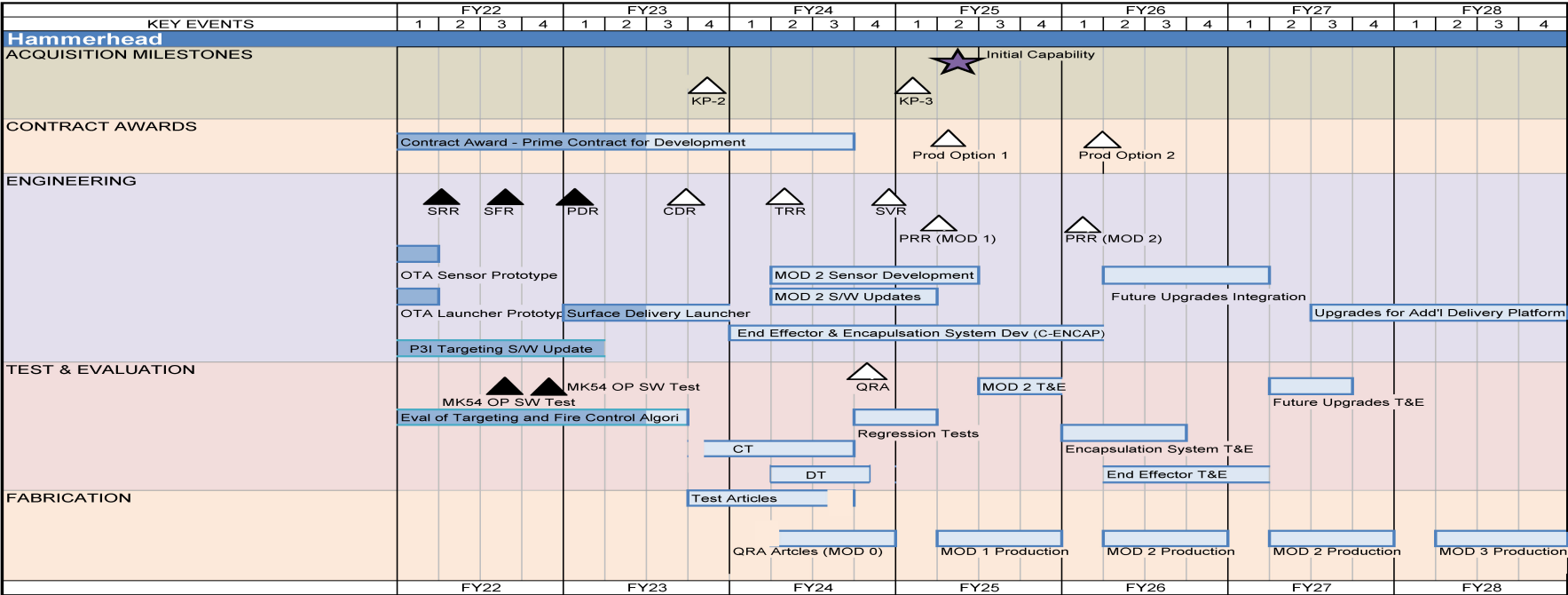
				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC PC : Panama City, FL	2.630	1.058	Oct 2021	1.564	Oct 2022	9.687	Oct 2023	-		9.687	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NUWC NPT : Newport, RI	0.145	0.125	Oct 2021	0.170	Oct 2022	0.204	Oct 2023	-		0.204	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604601N / Mine Development				Project (Number/Name) 2993 / Encapsulated Effector					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NUWC KPT : Keyport, WA	1.050	1.625	Oct 2021	1.932	Oct 2022	2.000	Oct 2023	-		2.000	Continuing	Continuing	Continuing
Subtotal			3.825	2.808		3.666		11.891		-		11.891	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Management Support	Various	Various : Various	0.296	0.223	Oct 2021	0.640	Oct 2022	0.640	Oct 2023	-		0.640	Continuing	Continuing	Continuing
Subtotal			0.296	0.223		0.640		0.640		-		0.640	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			34.382	20.480		30.325		59.497		-		59.497	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy						Date: March 2023					
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)			
1319 / 5				PE 0604601N / Mine Development				2993 / Encapsulated Effector			



ACRONYMS					
CDR	Critical Design Review	LRIP	Low Rate Initial Production	RFP	Request for Proposal
CT	Contractor Test	ONR	Office of Naval Research	RPP	Request for Prototyping Proposal
DT	Developmental Test	OTA	Other Transaction Authority	S/W	Software
DRRP	Draft RPP	P3I	Pre-planned Product Improvement	SFR	System Functional Review
H/W	Hardware	PDR	Preliminary Design Review	SRR	System Requirements Review
KP	Knowledge Point	QRA	Quick Reaction Assessment		

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604601N / <i>Mine Development</i>	<b>Project (Number/Name)</b> 2993 / <i>Encapsulated Effector</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Encapsulated Effector</i></b>				
Acquisition Milestones: Knowledge Point 2	4	2023	4	2023
Acquisition Milestones: Knowledge Point 3	1	2025	1	2025
Acquisition Milestones: Initial Capability	2	2025	2	2025
Engineering: Surface Delivery Launch	1	2023	4	2023
Engineering: Preliminary Design Review	1	2023	1	2023
Engineering: TRR	2	2024	2	2024
Engineering: SVR	4	2024	4	2024
Engineering: SRR	2	2022	2	2022
Engineering: SFR	3	2022	3	2022
Engineering: PRR	1	2025	1	2025
Engineering: Critical Design Review	3	2023	3	2023
Engineering: End Effector & Encapsulation System Development	1	2024	1	2026
Engineering: MOD 1 Sensor Development	2	2024	2	2025
Engineering: MOD 1 Software Updates	2	2024	1	2025
Engineering: Future Technology Upgrade	2	2026	1	2027
Engineering: Upgrades for Additional Delivery Platform	3	2027	4	2028
Engineering: PRR MOD 0	1	2025	1	2025
Engineering: PRR MOD 1	1	2026	1	2026
Test and Evaluation: MK54 OP SW Test	3	2022	4	2022
Test and Evaluation: Targeting & Fire Control Algorithm Evaluation	1	2022	3	2023
Test and Evaluation: Contractor Testing (CT)	4	2023	3	2024
Test and Evaluation: Developmental Testing (DT)	2	2024	4	2024

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604601N / <i>Mine Development</i>	<b>Project (Number/Name)</b> 2993 / <i>Encapsulated Effector</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test and Evaluation: Quick Reaction Assessment	4	2024	4	2024
Test and Evaluation: Encapsulation System Testing	1	2026	3	2026
Test and Evaluation: End Effector System Testing	2	2026	1	2027
Test and Evaluation: Regression Tests	4	2024	1	2025
Test and Evaluation: MOD 1 T&E	3	2025	4	2025
Test and Evaluation: Future Technology Upgrade T&E	2	2027	3	2027
Fabrication: Test Articles	4	2023	2	2024
Fabrication: QRA Articles (MOD 0)	2	2024	4	2024
Fabrication: MOD 0 Production	2	2025	4	2025
Fabrication: MOD 1 Production	2	2026	4	2026
Fabrication: MOD 1 Production Part 2	2	2027	4	2027
Fabrication: MOD 2 Production	2	2028	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0604610N / <i>Lightweight Torpedo Development</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	643.848	92.274	135.500	229.668	-	229.668	224.086	121.631	76.150	71.654	Continuing	Continuing
1412: <i>HAAWC</i>	19.868	0.199	2.726	18.340	-	18.340	21.303	19.330	15.630	9.946	Continuing	Continuing
2234: <i>Lightweight Hybrid Torpedo</i>	412.916	12.071	12.244	13.997	-	13.997	15.458	14.793	15.093	15.400	Continuing	Continuing
3418: <i>Advanced Anti-Submarine Lightweight Torpedo</i>	211.064	80.004	120.530	197.331	-	197.331	187.325	87.508	45.427	46.308	Continuing	Continuing

## **A. Mission Description and Budget Item Justification**

The Lightweight Torpedo (LWT) program designs, integrates and tests the MK 54 LWT and supports an incremental developmental acquisition approach combining hardware and Advanced Processor Build (APB) software upgrades to enable rapid fielding of improvements to the fleet. The program will focus on common LWT and Heavyweight Torpedo (HWT) hardware and software architecture enhancements that will provide improvements to the array, warhead, propulsion, and APB software to address capability gaps against challenging adversary submarines and environments. Future APB software builds will utilize common torpedo software to deliver capability and tactics improvements to the MK 54 LWT. The program will also support development of enhanced weapon delivery methods, including the high altitude launch of the MK 54 from the P-8A Maritime Patrol and Reconnaissance Aircraft (MPRA) with the HAAWC Air Launch Accessory (ALA) and development of a common HAAWC capability compatible with the MK 54 MOD 2 Advanced LWT (ALWT).

The HAAWC development program provides the P-8A MPRA with the ability to release LWTs from high altitude to prosecute enemy submarine threats. Operational Testing (OT) was conducted at the end of FY 2020, and the Commander Operational Test & Evaluation Force (COMOPTEVFOR) report was issued in FY 2021, recommending fielding. Follow-on T&E (FOT&E) was conducted in FY 2022 with updated flight control software and the program delivered the HAAWC capability to the fleet in Q3 FY 2022 with Commander Patrol and Reconnaissance Group (CPRG) declaring Initial Operating Capability (IOC) in Q1 FY 2023. The current HAAWC design was developed to deploy the MK 54 MOD 0/1. The MK 54 MOD 2 is not compatible with HAAWC due to having different mass properties and outer mold line from the MK 54 MOD 0/1 LWT. The HAAWC development program will focus on development of a new HAAWC design, starting in FY 2024, that will be compatible, at a minimum, with the MK 54 MOD 2 ALWT, aligned with the MK 54 MOD 2 fleet delivery schedule and investigate the potential for a common HAAWC design for all MK 54 MODs.

The MK 54 MOD 1 provides significant performance improvements compared to MK 54 MOD 0 for challenging littoral, shallow water environments and adversary countermeasures. The MOD 1 program is split into 2 increments: Increment 1 focusing on the updated sonar hardware and associated APB 5 common software to provide an improved LWT to the Fleet to replace the MK 54 MOD 0s; Increment 2 is the APB 6 software (SW) only upgrade to fully take advantage of the improved sonar hardware developed under Increment 1, update the platform interface to reduce Fleet Operator workload, and provide new potential capabilities such as Salvo and terminal homing improvements. APB 6 will run on MOD 1 but also serves as the SW baseline for the MK 54 MOD 2 and the MOD 2 program will leverage development and testing under the MOD 1 Increment 2 program to reduce the scope of the test and evaluation required for the MOD 2.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604610N / Lightweight Torpedo Development				
The MK 54 MOD 2 improves the lethality and speed of the LWT by upgrading the Warhead and Propulsion system to counter challenging near-peer adversary submarines that are faster and deeper diving, leveraging the sonar hardware improvements developed under the MOD 1 program. The program awarded four Other Transaction Authority (OTA) agreements to industry partners in FY 2020 for the design of the Guidance and Control (G&C) section, Warhead, Stored Chemical Energy Propulsion System (SCEPS) afterbody sections, and All Up Round (AUR) system integrator. Industry partners are focused primarily on the development of torpedo hardware and support equipment while the USN maintains the responsibility of developing the software under the APB process and will develop specific software modules for the MK 54 MOD 2 variant. The program is working on awarding an OTA in FY 2023 for the completion of the development of the AUR and procuring up to 48 Proof of Manufacture (POM) AUR test assets to be used in Developmental and Operational Test and Evaluation. The AUR Industry partner will be responsible for managing the subsystem and system level qualification, AUR assembly, and platform integration.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		94.386	142.000	157.296	-	157.296
Current President's Budget		92.274	135.500	229.668	-	229.668
Total Adjustments		-2.112	-6.500	72.372	-	72.372
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-6.500			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-2.112	0.000			
• Program Adjustments		0.000	0.000	71.269	-	71.269
• Rate/Misc Adjustments		0.000	0.000	1.103	-	1.103
Change Summary Explanation						
Funding increases from FY 2023 to FY 2024 in Project Units 1412, 2234, and 3418 for the following:						
(1)PU 1412 HAAWC: Increase of \$15.614M for award to contractor for development of a new High Altitude Anti-Submarine Warfare Weapon Capability (HAAWC) that will be compatible with the MK 54 MOD 2 Advanced Lightweight Torpedo (ALWT) and aligned with MK 54 MOD 2 fleet delivery schedule.						
(2)PU 2234 Lightweight Hybrid Torpedo: Increase of \$1.753M for APB 6 SW development to implement the Enhanced Digital Fire Control Interface (eDFCI) in the torpedo and upgrade models in the WAF.						
(3)PU 3418 Advanced Lightweight Torpedo: Increase of \$76.801M for the procurement of material to support assembly, integration, and test of up to 48 AUR Proof of Manufacture (POM) hardware, which includes the G&C, WH, Fleet Exercise System (FES), and SCEPS afterbody subsystems required to support the in-water Developmental Test (DT) program that begins in FY 2025. Critical materials to support the subsystems, such as parts for SCEPS afterbody, that include the						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604610N / Lightweight Torpedo Development	
<p>Heat Exchanger System (feedwater components, boiler assembly, injectors) and Tail Section will be procured in FY 2024. Increase also required to support shift from land-based testing to in-water testing which requires additional support and equipment.</p> <p>Total Program Adjustments to FY 2024 funding \$72.372M:</p> <p>(1)PU 1412 HAAWC: Program Adjustment increase of \$14.898M for industry award to design and develop a High Altitude Anti-Submarine Warfare Weapon Capability (HAAWC) compatible with the MK 54 MOD 2 Advanced Lightweight Torpedo (ALWT), aligned with MK 54 MOD 2 fleet delivery schedule.</p> <p>(2)PU 2234 Lightweight Hybrid Torpedo: Program Adjustment reduction of \$1.885M to correct excess carryover from prior years and inflation realignment.</p> <p>(3)PU 3418 Advanced Lightweight Torpedo: Toal program adjustment increase of \$59.359M for MK 54 MOD 2 Phase II contract POM subsystem hardware procurements to support AUR builds and program testing requirements and rate adjustments.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 1412 / HAAWC			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1412: HAAWC	19.868	0.199	2.726	18.340	-	18.340	21.303	19.330	15.630	9.946	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The program will design, develop, and procure a High Altitude Anti-Submarine Warfare Weapon Capability (HAAWC) Air Launch Accessory (ALA) for the MK 54 MOD 2 Lightweight Torpedo (LWT). This capability will allow fixed-wing employment of the MK 54 MOD 2 torpedo in the same manner as the HAAWC allows for the MK 54 MOD 0/1 Torpedoes: at high altitude, with stand-off ranges, and the ability for precision guidance to the intended water entry point (WEP) without affecting the in-water operation of the torpedo. The HAAWC program will focus on development of a HAAWC that will be compatible with the MK 54 MOD 2 ALWT, aligned with the MK 54 MOD 2 fleet delivery schedule. The program will investigate the potential for a common HAAWC design for all MK 54 MODs.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> High Altitude Anti-Submarine Warfare Weapon Capability (HAAWC) Development  <b>Articles:</b>								0.199	2.726	18.340	0.000	18.340
								-	-	-	-	-
<b>FY 2023 Plans:</b> Continue HAAWC assessment and requirements review for MOD 2 Update specifications and create Statement of Work and other pre-solicitation documents Continue Market Research and Industry engagement Preparation of HAAWC development for use on MOD 2 solicitation for initial award												
<b>FY 2024 Base Plans:</b> Solicit Proposals and complete evaluation(s) for Award of development contract for HAAWC for MOD 2 Conduct Kick Off meeting and Integrated Baseline Review (IBR) Conduct Systems Requirement Review (SRR)												
<b>FY 2024 OCO Plans:</b> N/A												
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$15.614M for award to contractor for development of a new High Altitude Anti-Submarine Warfare Weapon Capability (HAAWC) that will be compatible with the MK 54 MOD 2 Advanced Lightweight Torpedo (ALWT) and aligned with MK 54 MOD 2 fleet delivery schedule.												
Accomplishments/Planned Programs Subtotals								0.199	2.726	18.340	0.000	18.340

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy							Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>			Project (Number/Name) 1412 / HAAWC		

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• WPN/3215: <i>MK-54 Torpedo Mods</i>	94.168	103.372	104.086	-	104.086	107.452	137.334	139.061	142.100	Continuing	Continuing

Remarks

LI 3215 FYDP funds MK 54 MOD 0, MK 54 MOD 1, MK 54 MOD 2, and HAAWC procurements.

D. Acquisition Strategy

The Engineering and Manufacturing Development (EMD) contract was completed by Boeing Company supports an incremental approach to delivering full HAAWC capability, Air Launch Accessory (ALA) assets and equipment, as well as associated engineering services and support. HAAWC compatible with MK 54 MOD 0/1 is in full rate production in a sole source follow on award to Boeing. The MK 54 MOD 2 compatible HAAWC developmental contract award is planned for FY 2024 based on technical studies and market research activities.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>					Project (Number/Name) 1412 / HAAWC				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development - HAAWC	C/CPFF	Boeing : St. Louis, MO	6.848	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware Development - HAAWC	WR	NSWC : Indian Head, MD	0.040	0.000		0.000		0.000		-		0.000	0.000	0.040	-
Hardware Development - HAAWC	WR	NSWC : Carderock, MD	0.015	0.000		0.000		0.000		-		0.000	0.000	0.015	-
Hardware Development - HAAWC	WR	NUWC : Newport, RI	0.107	0.199	Nov 2021	1.000	Nov 2022	0.000		-		0.000	0.000	1.306	-
Hardware Development - HAAWC	WR	NUWC : Keyport, WA	0.000	0.000		0.997	Nov 2022	0.000		-		0.000	0.000	0.997	-
Systems Engineering - HAAWC	WR	NAWC : Pax River, MD	1.226	0.000		0.544	Nov 2022	0.000		-		0.000	0.000	1.770	-
Systems Engineering - HAAWC	WR	NAWC : China Lake, CA	0.740	0.000		0.185	Nov 2022	0.000		-		0.000	0.000	0.925	-
Hardware Development - HAAWC for MK 54 MOD 2	C/CPFF	Contractor TBD : Location TBD	0.000	0.000		0.000		15.598	Jan 2024	-		15.598	0.000	15.598	-
Hardware Development - HAAWC for MK 54 MOD 2	WR	NUWC : Newport, RI	0.000	0.000		0.000		1.000	Nov 2023	-		1.000	0.000	1.000	-
Hardware Development - HAAWC for MK 54 MOD 2	WR	NUWC : Keyport, WA	0.000	0.000		0.000		1.000	Nov 2023	-		1.000	0.000	1.000	-
Hardware Development - HAAWC for MK 54 MOD 2	C/BA	NAWC : Pax River / China Lake	0.000	0.000		0.000		0.742	Nov 2023	-		0.742	0.000	0.742	-
Subtotal			8.976	0.199		2.726		18.340		-		18.340	Continuing	Continuing	N/A
Remarks															
Increase from FY 2023 to FY 2024 for industry award for hardware development of a High Altitude Anti-Submarine Warfare Weapon Capability (HAAWC) design that will be compatible with the MK 54 MOD 2. NUWC and NAWC will provide oversight of industry development contract.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>					Project (Number/Name) 1412 / HAAWC				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support - HAAWC	WR	NUWC : Keyport	1.373	0.000		0.000		0.000		-		0.000	0.000	1.373	-
Subtotal			1.373	0.000		0.000		0.000		-		0.000	0.000	1.373	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	C/CPFF	Boeing : St. Louis, MO	4.124	0.000		0.000		0.000		-		0.000	0.000	4.124	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NUWC : Keyport, WA	1.058	0.000		0.000		0.000		-		0.000	0.000	1.058	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NUWC : Newport, RI	1.488	0.000		0.000		0.000		-		0.000	0.000	1.488	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NAWC : China Lake, CA	0.425	0.000		0.000		0.000		-		0.000	0.000	0.425	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NAWC : Pax River, MD	0.825	0.000		0.000		0.000		-		0.000	0.000	0.825	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	OPTEVFOR : Norfolk, VA	1.504	0.000		0.000		0.000		-		0.000	0.000	1.504	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NAVAIR : China Lake, CA	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NSWC : Indian Head, MD	0.070	0.000		0.000		0.000		-		0.000	0.000	0.070	-
Subtotal			9.519	0.000		0.000		0.000		-		0.000	0.000	9.519	N/A

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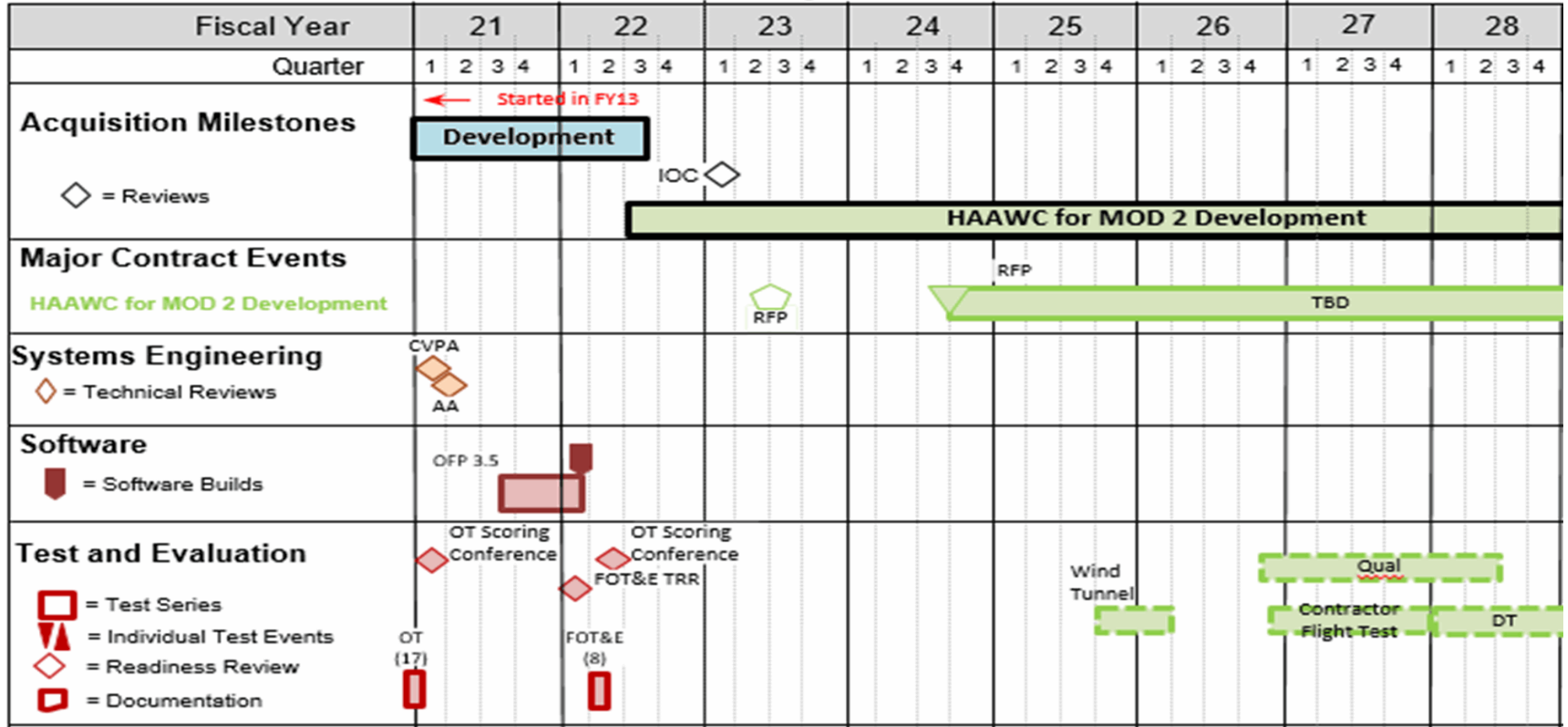
Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023						
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>					Project (Number/Name) 1412 / HAAWC							
					Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals					19.868	0.199		2.726		18.340		-		18.340	Continuing	Continuing	N/A

Remarks



Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>		Project (Number/Name) 1412 / HAAWC	

HAAWC Acquisition Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>	Project (Number/Name) 1412 / HAAWC

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1412</b>				
HAAWC Design/Development/Qualification: HAAWC IOC	3	2022	3	2022
HAAWC Design/Development/Qualification: HAAWC FOT&E	2	2022	2	2022
HAAWC Design/Development/Qualification: HAAWC on MK 54 MOD 2 Development	3	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 2234 / <i>Lightweight Hybrid Torpedo</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2234: <i>Lightweight Hybrid Torpedo</i>	412.916	12.071	12.244	13.997	-	13.997	15.458	14.793	15.093	15.400	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The program designs, integrates and tests the LWT MK 54. The LWT provides performance improvements in shallow water, counter-measure environments. The MK 54 MOD 1 program consists of two increments: (1) Increment 1 consisting of Advanced Processor Build (APB) 5 / Tech Insertion 1 (TI-1); and (2) Increment 2, consisting of APB-6 software upgrade. FY 2024 funding is for continued development of MK 54 MOD 1 Increment 2 APB 6 engineering builds, conducting in-water engineering test runs, and Weapons Analysis Facility (WAF) system testing. FY 2024 funding also for continued development of a Fleet Exercise Section (FES) instrumentation subsystem to be compatible with the MK 54 MOD 1 obsolescence upgraded hardware being produced under BLI 3215.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> MK 54 Pre-Planned Product Improvement  <b>Articles:</b>								12.071	12.244	13.997	0.000	13.997
								-	-	-	-	-
<b>FY 2023 Plans:</b> Continue Fleet Exercise Section (FES) development Continue Environmentally Centric Weapons Facility (EC WAF) Integration Continue APB 6 (INC 2) software development Conduct Engineering In Water Testing for APB 6 (INC 2)  <b>FY 2024 Base Plans:</b> Continue Fleet Exercise Section (FES) development Continue Environmentally Centric Weapons Facility (EC WAF) Integration Continue APB 6 (INC 2) software development Conduct Engineering In Water Testing for APB 6 (INC 2) Initiated Developmental Testing for APB 6 (INC 2) Conduct initial platform integration of APB 6 (INC 2) with launch platforms (P-8A, MH-60R, CRUDES)  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>			Project (Number/Name) 2234 / <i>Lightweight Hybrid Torpedo</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Increase of \$1.753M for APB 6 SW development to implement the Enhanced Digital Fire Control Interface (eDFCI) in the torpedo and upgrade models in the WAF.											
Accomplishments/Planned Programs Subtotals						12.071	12.244	13.997	0.000	13.997	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete Total Cost	
• WPN/3215: <i>MK-54 Torpedo Mods</i>	94.168	103.372	104.086	-	104.086	107.452	137.334	139.061	142.100	Continuing Continuing	
Remarks											
LI 3215 FYDP funds MK 54 MOD 0, MK 54 MOD 1, MK 54 MOD 2 and HAAWC procurements.											
D. Acquisition Strategy											
Leveraging a Phase III SBIR, a MK 54 MOD 1 LRIP contract was awarded to Progeny in 2016, for the delivery of MOD 1 assets to support Operational Testing (OT). EOC approved by MDA in Dec 2021 and IOC has been delayed to 2Q FY 2023 due to lack of target availability to conduct OT events. Continuing on with the SBIR contractor, a second LRIP contract was awarded to Progeny for MOD 1 kits in 2018, with an option for Full Rate Production in FY 2022. A new Sole Source FRP contract award is planned for FY 2023 and will incorporate the completion of the development and qualification of the FES that is compatible with the obsolescence upgrade that is being produced in the second LRIP contract and subsequent FRP contract(s). In conjunction with these MK 54 MOD 1 hardware procurements, APB software upgrades will provide significant torpedo performance improvements. APB 5 and APB 6 software development and testing is performed by NUWC Division Newport. The APB software maximizes commonality between HWTs and LWTs and the APB 6 variant that is being developed under MK 54 MOD 1 INCREMENT 2 is the baseline SW for the MK 54 MOD 2 ALWT.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 2234 / <i>Lightweight Hybrid Torpedo</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development - PRIOR YEAR	WR	NUWC : Newport/ Keyport	47.640	0.000		0.000		0.000		-		0.000	0.000	47.640	-
Hardware Development - MK 54 MOD 1	WR	NUWC : Newport	7.469	0.000		0.000		0.000		-		0.000	0.000	7.469	-
Hardware Development - MK 54 MOD 1	SS/FP	Progeny Systems : Not Specified	24.394	0.000		0.000		0.000		-		0.000	0.000	24.394	-
Hardware Development - HAAWC	WR	NSWCCD : Carderock, MD	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Hardware Development - HAAWC	C/CPAF	Boeing : St. Louis, MO	98.216	0.000		0.000		0.000		-		0.000	0.000	98.216	-
Hardware Development - HAAWC	WR	NSWCDD : Dahlgren, VA	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	-
Hardware Development - INSENSITIVE MUNITIONS	WR	NUWC : Newport	0.950	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware Development - INSENSITIVE MUNITIONS	WR	NSWC : Indian Head, MD	0.971	0.150	Nov 2021	0.150	Nov 2022	0.150	Nov 2023	-		0.150	Continuing	Continuing	Continuing
Hardware Development - INSENSITIVE MUNITIONS	WR	NUWC : Keyport	0.470	0.749	Nov 2021	0.196	Nov 2022	0.053	Nov 2023	-		0.053	Continuing	Continuing	Continuing
Hardware Development - MK 54 MOD 1	WR	NSWC : Indian Head, MD	6.950	0.000		0.000		0.000		-		0.000	0.000	6.950	-
Hardware Development - MK 54 MOD 1	MIPR	DMEA : McClellan, CA	0.520	0.000		0.000		0.000		-		0.000	0.000	0.520	-
Software Development - PRIOR YEAR	WR	NUWC : Newport/ Keyport	20.454	0.000		0.000		0.000		-		0.000	0.000	20.454	-
Software Development - MK 54 MOD 1	WR	NUWC : Newport	3.032	2.697	Nov 2021	2.862	Nov 2022	0.000		-		0.000	0.000	8.591	-
Software Development - MK 54 MOD 1	MIPR	MIT : Boston, MA	1.358	0.000		0.000		0.000		-		0.000	0.000	1.358	-
Software Development - MK 54 MOD 1	C/BA	ARL/PSU : State College, PA	1.441	0.814	Jan 2022	0.500	Jan 2023	0.000		-		0.000	0.000	2.755	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 2234 / <i>Lightweight Hybrid Torpedo</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering - VLA	SS/FP	Lockheed Martin: VLA : Akron, OH	7.606	0.000		0.000		0.000		-		0.000	0.000	7.606	-
Systems Engineering - HAAWC	WR	NSWC PMA 290 : Patuxent, MD	9.582	0.000		0.000		0.000		-		0.000	0.000	9.582	-
Systems Engineering - HAAWC	WR	NAWCWD : China Lake	6.606	0.000		0.000		0.000		-		0.000	0.000	6.606	-
Systems Enginnering - HAAWC	C/CPFF	John Hopkins University : Baltimore, MD	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
System Test & Evaluation - HAAWC	WR	NUWC : Newport/ Keyport	21.931	0.000		0.000		0.000		-		0.000	0.000	21.931	-
Hardware Development - ADV LWT	WR	NUWC : Newport	1.218	0.000		0.000		0.000		-		0.000	0.000	1.218	-
Hardware Development - ADV LWT	WR	NUWC : Keyport	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Hardware Development - ADV LWT	WR	NSWC : Indian Head, MD	0.270	0.000		0.000		0.000		-		0.000	0.000	0.270	-
Hardware Development - ADV LWT	WR	NAVSEA : Washington, DC	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
Hardware Development - ADV LWT	WR	NAVAIR : Pax River, MD	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
Software Development - APB 6	WR	NUWC : Newport	3.415	2.222	Nov 2021	1.947	Nov 2022	6.955	Dec 2023	-		6.955	0.000	14.539	-
Software Development - APB 6	C/CPFF	Sonalyt : Waterford, CT	0.704	0.000		0.000		0.000		-		0.000	0.000	0.704	-
Software Development - FCT program	C/BA	NUWC : Newport/ Keyport	1.150	0.000		0.000		0.000		-		0.000	0.000	1.150	-
Subtotal			267.197	6.632		5.655		7.158		-		7.158	Continuing	Continuing	N/A
Remarks															
Increase from FY 2023 to FY 2024 for APB 6 SW development to implement the Enhanced Digital Fire Control Interface (eDFCI) in the torpedo and upgrade models in the WAF.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 2234 / <i>Lightweight Hybrid Torpedo</i>					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	WR	NUWC : Newport/ Keyport	5.532	0.000		0.000		0.000		-		0.000	0.000	5.532	-
System Engineering Support	WR	NUWC : Newport/ Keyport	11.991	1.302	Nov 2021	1.328	Nov 2022	1.825	Nov 2023	-		1.825	0.000	16.446	-
Program Management Support	C/BA	ARL/PSU : State College, PA	0.441	0.000		0.000		0.000		-		0.000	0.000	0.441	-
Program Management Support	Various	NAVSEA : Not Specified	0.168	0.000		0.000		0.000		-		0.000	0.000	0.168	-
Systems Engineering	WR	NUWC : Newport/ Keyport	0.120	0.000		0.000		0.000		-		0.000	0.000	0.120	-
System Test and Evaluation	WR	NUWC : Newport/ Keyport	32.306	1.834	Nov 2021	1.870	Nov 2022	1.896	Nov 2023	-		1.896	0.000	37.906	-
System Test and Evaluation	WR	NSWC : Carderock, MD	0.008	0.000		0.000		0.000		-		0.000	0.000	0.008	-
System Test and Evaluation	WR	NSWC : Dahlgren, VA	0.069	0.000		0.000		0.000		-		0.000	0.000	0.069	-
System Test and Evaluation	WR	NAVFAC LANT : Washington, DC	0.056	0.000		0.000		0.000		-		0.000	0.000	0.056	-
Subtotal			50.691	3.136		3.198		3.721		-		3.721	0.000	60.746	N/A
Remarks FY 2024 increase for ABP 6 system engineering and Test and Evaluation to support Engineering In-Water Runs.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NSWC : Carderock	1.259	0.000		0.000		0.000		-		0.000	0.000	1.259	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 2234 / <i>Lightweight Hybrid Torpedo</i>					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NUWC : Newport/ Keyport	32.191	0.000		0.000		0.000		-		0.000	0.000	32.191	-
Operational Test & Evaluation (OT&E)	WR	NUWC : Keyport	18.108	1.763	Nov 2021	0.450	Nov 2022	1.964	Dec 2023	-		1.964	0.000	22.285	-
Operational Test & Evaluation (OT&E)	WR	NUWC : Newport	23.017	0.211	Nov 2021	1.651	Nov 2022	0.256	Dec 2023	-		0.256	0.000	25.135	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NSWC : Indian Head, MD	1.676	0.000		0.000		0.000		-		0.000	0.000	1.676	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	C/CPIF	ARL/PSU : State College, PA	2.029	0.000		0.000		0.000		-		0.000	0.000	2.029	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	Aberdeen Test Center : Aberdeen, MD	0.731	0.000		0.000		0.000		-		0.000	0.000	0.731	-
Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : Norfolk, VA	4.422	0.039	Nov 2021	1.000	Nov 2022	0.598	Dec 2023	-		0.598	0.000	6.059	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	OPTEVFOR : Norfolk, VA	4.240	0.000		0.000		0.000		-		0.000	0.000	4.240	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NSWC : Dalgren, VA	0.091	0.000		0.000		0.000		-		0.000	0.000	0.091	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NUWC : Keyport	0.618	0.000		0.000		0.000		-		0.000	0.000	0.618	-
Subtotal			88.382	2.013		3.101		2.818		-		2.818	0.000	96.314	N/A
Remarks Reduced requirement for T&E as focus shifts to APB 6 development and T&E planning for APB 6.															



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / Lightweight Torpedo Development				Project (Number/Name) 2234 / Lightweight Hybrid Torpedo					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	NAVSEA : Washington, DC	0.591	0.028	Nov 2021	0.028	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support	C/FPIF	NAVSEA : Washington, DC	5.467	0.262	Nov 2021	0.262	Nov 2022	0.300	Jan 2024	-		0.300	0.000	6.291	-
Program Management Support	C/CPFF	ARL/PSU : Philadephia, PA	0.588	0.000		0.000		0.000		-		0.000	0.000	0.588	-
Subtotal			6.646	0.290		0.290		0.300		-		0.300	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			412.916	12.071		12.244		13.997		-		13.997	Continuing	Continuing	N/A
Remarks															

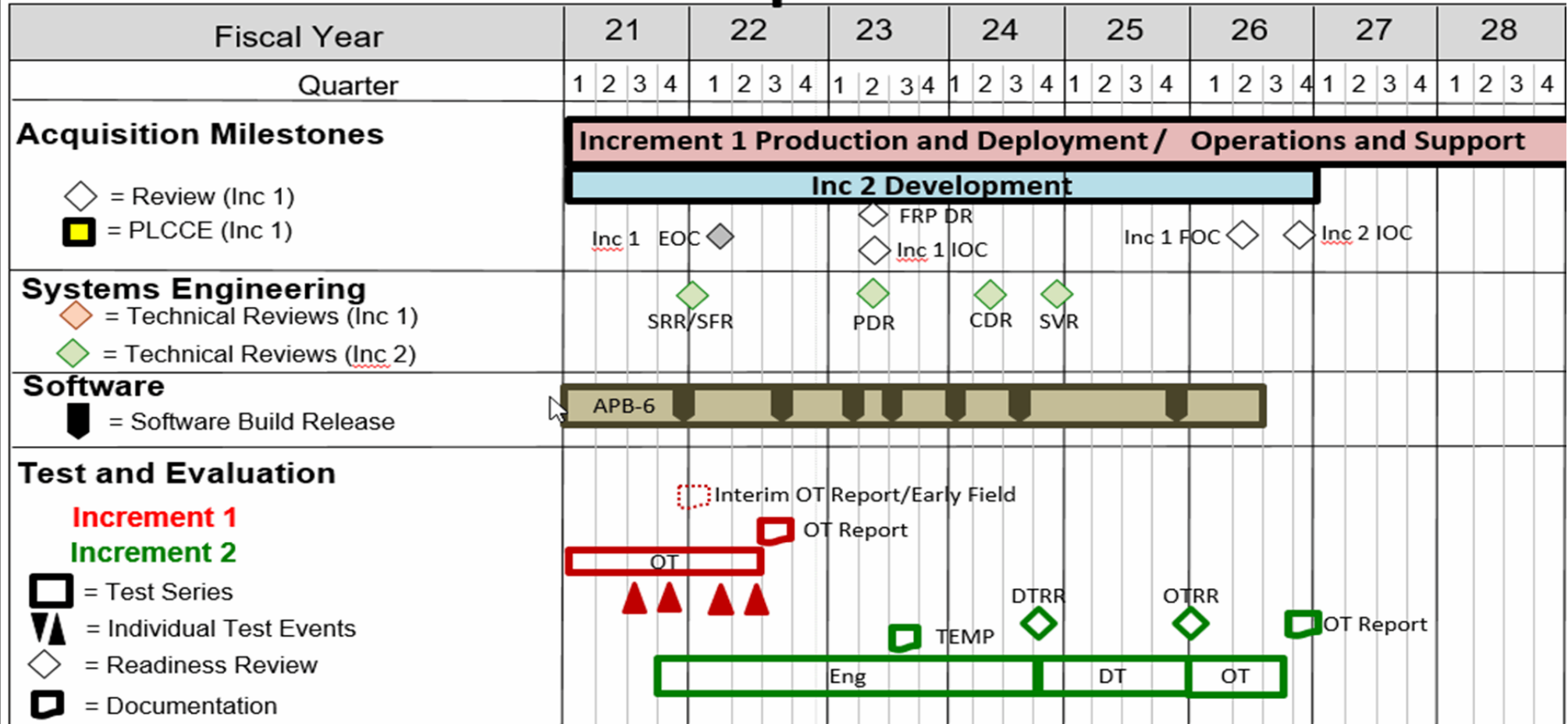
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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5R-1 Program Element (Number/Name)  
PE 0604610N / *Lightweight Torpedo Development*Project (Number/Name)  
2234 / *Lightweight Hybrid Torpedo*

# MK 54 MOD 1 Acquisition Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>	Project (Number/Name) 2234 / <i>Lightweight Hybrid Torpedo</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2234</b>				
MK 54 MOD 1 Inc 1: APB 5 / TI-1 Inc 1 OT	1	2022	2	2022
MK 54 MOD 1 Inc 1: APB 5 / TI-1 Inc 1 EOC	1	2022	1	2022
MK 54 MOD 1 Inc 1: APB 5 / TI-1 Inc 1 IOC	2	2023	2	2023
MK 54 MOD 1 Inc 2: APB 6 Tactical Software Development	1	2022	2	2026
MK 54 MOD 1 Inc 2: Engineering Testing	1	2022	3	2024
MK 54 MOD 1 Inc 2: DT	4	2024	4	2025
MK 54 MOD 1 Inc 2: OT	1	2026	3	2026
MK 54 MOD 1 Inc 2: APB 6 IOC	4	2026	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 3418 / <i>Advanced Anti-Submarine Lightweight Torpedo</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3418: <i>Advanced Anti-Submarine Lightweight Torpedo</i>	211.064	80.004	120.530	197.331	-	197.331	187.325	87.508	45.427	46.308	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The MK 54 MOD 2 (ALWT) is developing capability to improve the lethality and speed of the LWT by upgrading the Warhead and Propulsion system to counter challenging near- peer adversary submarines that are faster and deeper diving, leveraging the sonar hardware improvements developed under the MOD 1 program. The Analysis of Alternatives (AoA) (FY 2017) and Capability Development Document (CDD) (FY 2018) have been completed and approved. The program is leveraging UARCs and Government Agencies for requirements definition and early development, and the use of Other Transactional Authority (OTA)s for system and subsystem detailed design. The MOD 2 program will leverage development and testing under the MOD 1 Increment 2 program to reduce the scope of the test and evaluation required for the MOD 2.

FY 2024 funding will focus towards transitioning hardware development from the POD phase Other Transaction Authority (OTA) to the new All Up Round (AUR) Proof of Manufacture (POM) phase OTA, to develop and procure POM quantities, associated test spares, test sets and support equipment. FY 2024 funding will be used primarily for awarding subcontracts to the major subsystems (G&C, WH, FES, SCEPS Afterbody) for material procurements under the AUR POM contract that is planned for award in late FY 2023. Long Lead Materials are being procured in FY 2023 under the POD subsystem OTAs ahead of the POM effort to meet the aggressive schedule and the remaining critical materials to support the G&C, WH, FES, and SCEPS afterbody subsystems will be procured in FY 2024 under the AUR system OTA. The AUR/POM phase OTA is required to complete hardware development and provide the tests assets needed to execute engineering, qualification, developmental and operational test programs in preparation for the follow-on LRIP and deployment phases. The program will also execute a shift from land-based testing to in-water pre-engineering and engineering testing with the POD Hardware towards the end of FY 2024. Operational software development, modeling and simulation verification, platform integration, live warhead testing, and fleet exercise section development efforts will continue in FY 2024 to support engineering and qualification efforts.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> ALWT Development	80.004	120.530	197.331	0.000	197.331
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> -Conduct Subsystem Level Critical Design Reviews (CDR) -Continue MOD 2 APB software development -Continue Fleet Exercise Section (FES) development -Continue test set (Warhead/Engine/All up Round) development -Continue ship integration interface design					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>		Project (Number/Name) 3418 / <i>Advanced Anti-Submarine Lightweight Torpedo</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>-Continue hardware development for Warhead section, Guidance &amp; Control section, and Propulsion</div> <div>-Continue EC WAF modeling and simulation accreditation</div> <div>-Continue Propulsion Section Proof of Design testing and delivery</div> <div>-Continue Guidance and Control (G&amp;C) Section Proof of design testing and delivery</div> <div>-Continue Warhead section Proof of Design testing and delivery</div> <div>-Continue system test bed development</div> <div>-Continue MH-60R/P-8A Integration Interface Design (hardware updates and interface software development)</div> <div>-Continue Air Launch Accessory (ALA) Initial System Design</div> <div>-Continue to Procure Long Lead Material supporting Phase II Proof of Manufacture Design</div> <div>-Award AUR Phase II OTA for completing design and development</div> <div><b>FY 2024 Base Plans:</b></div> <div>-Conduct System Level Critical Design Review (CDR)</div> <div>-Continue MOD 2 APB software development</div> <div>-Complete Propulsion Section Proof of Design delivery</div> <div>-Complete Guidance and Control (G&amp;C) Section Proof of Design delivery</div> <div>-Complete Warhead section Proof of Design delivery</div> <div>-Contiue AUR Phase II OTA for completing AUR design and development</div> <div>-Continue Fleet Exercise Section (FES) development</div> <div>-Continue test set (Warhead/Engine/All up Round) development</div> <div>-Continue ship integration interface design</div> <div>-Continue hardware development for Warhead section, Guidance &amp; Control section, and Propulsion</div> <div>-Continue EC WAF modeling and simulation accreditation</div> <div>-Continue system test bed development</div> <div>-Continue MH-60R/P-8A Integration Interface Design (hardware updates and interface software development)</div> <div>-Continue Air Launch Accessory (ALA) Initial System Design</div> <div>-Conduct procurement non-Long Lead Material supporting Phase II Proof of Manufacture Design</div> <div>-Conduct initial in-water engineering runs</div> <div>-Conduct qualification testing</div> <div><b>FY 2024 OCO Plans:</b></div> <div>N/A</div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></div>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 3418 / <i>Advanced Anti-Submarine Lightweight Torpedo</i>					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase of \$76.801M for the procurement of material to support assembly, integration, and test of up to 48 AUR Proof of Manufacture (POM) hardware, which includes the G&C, WH, Fleet Exercise System (FES), and SCEPS afterbody subsystems required to support the in-water Developmental Test (DT) program that begins in FY 2025. Critical materials to support the subsystems, such as parts for SCEPS afterbody, that include the Heat Exchanger System (feedwater components, boiler assembly, injectors) and Tail Section will be procured in FY 2024. Increase also required to support shift from land-based testing to in-water testing which requires additional support and equipment.													
Accomplishments/Planned Programs Subtotals									80.004	120.530	197.331	0.000	197.331
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• WPN/3215: <i>MK-54 Torpedo Mods</i>	94.168	103.372	104.086	-	104.086	107.452	137.334	139.061	142.100	Continuing	Continuing		
Remarks													
LI 3215 FYDP funds MK 54 MOD 0, MK 54 MOD 1, MK 54 MOD 2 and HAAWC procurements.													
D. Acquisition Strategy													
The Acquisition Strategy is to use University Affiliated Research Centers (UARCs), Warfare Centers, and competitive Other Transactional Authority (OTA) agreements with industry to prototype a new Advanced Lightweight Torpedo. The program will then pursue accelerated acquisition LRIP opportunities while preparing for full and open FRP competition. This accelerated approach requires full initial funding and funding to procure long lead materials to ensure all prototyping efforts deliver a fully integrated and production-ready weapon. Scope of effort includes weapon, launch platform integration, and all associated subsystems and supporting capabilities. Four OTAs awarded and executing Proof of Design (POD) phase:													
(1) Northrop Grumman - Warhead Section													
(2) Aerojet - Afterbody Section													
(3) Progeny - G&C Section													
(4) Raytheon - All-Up-Round (AUR), Test Sets, Test Shapes, Air Launch Accessories, and Fleet Exercise Sections (FES)													
Following the POD phase, a competitive Proof of Manufacturing (POM) OTA will be awarded to a single prime contractor to complete system and subsystem level prototype development and delivery AUR POM units starting in FY 2025. These POM units will be used to validate performance through land-based testing and in-water qualification, development, and operational testing. Upon satisfactory completion of the POM OTA, a sole-source FAR-based Low-Rate Initial Production (LRIP) contract will be awarded to the POM phase prime contractor to provide initial deliveries to the fleet. This will be followed by a competitively awarded FAR-based full-rate production contract.													

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604610N / *Lightweight Torpedo Development*

## Project (Number/Name)

3418 / *Advanced Anti-Submarine Lightweight Torpedo*

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NUWC NPT : Newport, RI	7.636	7.131	Nov 2021	7.877	Nov 2022	7.975	Nov 2023	-		7.975	0.000	30.619	-
Hardware Development	WR	NUWC NPT : Newport, RI	9.848	2.846	Nov 2021	3.860	Nov 2022	1.141	Nov 2023	-		1.141	Continuing	Continuing	Continuing
Hardware Development	WR	NUWC KPT : Keyport, WA	10.046	5.005	Nov 2021	9.831	Nov 2022	8.469	Nov 2023	-		8.469	0.000	33.351	-
Hardware Development	WR	NSWC, IH : Indian Head, MD	4.703	0.625	Nov 2021	3.409	Nov 2022	1.581	Nov 2023	-		1.581	0.000	10.318	-
Hardware Development - AUR	C/CPFF	ARL/PSU : State College, PA	36.904	3.076	Nov 2021	10.578	Nov 2022	9.459	Nov 2023	-		9.459	0.000	60.017	-
Hardware Development	WR	PEO-IWS : Washington, DC	2.869	0.250	Nov 2021	0.276	Nov 2022	0.000		-		0.000	0.000	3.395	-
Software Development - Platform Integration	WR	NAVAIR : Pax River, MD	10.524	9.659	Nov 2021	4.293	Nov 2022	11.089	Nov 2023	-		11.089	0.000	35.565	-
Hardware Development - G&C	C/CPIF	OTA - Progeny : Manassas, VA	5.864	7.600	Dec 2021	5.984	Dec 2022	0.000		-		0.000	0.000	19.448	-
Hardware Development - New engine	C/CPIF	OTA - Aerojet Rocketdyne : Huntsville, AL	57.141	17.020	Jan 2022	13.312	Jan 2023	0.000		-		0.000	0.000	87.473	-
Hardware Development - Warhead	C/CPIF	OTA - Northrop Grumman Innovation Systems : Plymouth, MN	28.149	8.504	Jan 2022	16.016	Jan 2023	0.000		-		0.000	0.000	52.669	-
Hardware Development - AUR	C/CPIF	OTA - Raytheon : Portsmouth, RI	29.007	15.858	Jan 2022	23.412	Jan 2023	0.000		-		0.000	0.000	68.277	-
Hardware Development	WR	NSWC Philadelphia : Philadelphia, PA	0.000	0.000		0.346	Nov 2022	0.243	Nov 2023	-		0.243	0.000	0.589	-
Software Development	WR	NSWCCD : Carderock, MD	0.000	0.000		1.168	Nov 2022	0.040	Nov 2023	-		0.040	0.000	1.208	-
Hardware Development Phase II AUR	C/CPIF	OTA - TBD : Location TBD	0.000	0.000		6.500	Jan 2023	127.065	Dec 2023	-		127.065	0.000	133.565	-
Software Development - Platform Integration	C/CPIF	CTR - TBD : Location TBD	0.000	0.000		9.315	Dec 2023	17.898	Dec 2023	-		17.898	0.000	27.213	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604610N / <i>Lightweight Torpedo Development</i>				Project (Number/Name) 3418 / <i>Advanced Anti-Submarine Lightweight Torpedo</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			202.691	77.574		116.177		184.960		-		184.960	Continuing	Continuing	N/A
Remarks															
- Increase of \$6.796M to NAVAIR/Pax River required to support P-8A and MH-60 platform integration support															
- Increase of \$8.583M to development contractor for P-8A and MH-60 platform integration															
- Increase of \$120.310M to Phase II AUR contractor for subcontractor awards and to begin subsystem (G&C, WH, FES, SCEPS afterbody) POM hardware procurement to support up to 48 AUR units required for Developmental and Operational Testing															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NUWC NPT : Newport, RI	2.427	0.960	Nov 2021	1.788	Nov 2022	1.292	Nov 2023	-		1.292	0.000	6.467	-
Subtotal			2.427	0.960		1.788		1.292		-		1.292	0.000	6.467	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NUWC : Newport, RI	4.277	0.570	Nov 2021	1.410	Nov 2022	2.116	Nov 2023	-		2.116	0.000	8.373	-
Developmental Test & Evaluation (DT&E)	WR	OPTEVFOR : Norfolk, VA	0.000	0.000		0.255	Nov 2022	0.207	Nov 2023	-		0.207	0.000	0.462	-
Developmental Test & Evaluation (DT&E)	WR	NUWC : Keyport, WA	0.000	0.000		0.000		5.014	Nov 2023	-		5.014	0.000	5.014	-
Developmental Test & Evaluation (DT&E)	C/BA	NSWC : Indian Head, MD	0.000	0.000		0.000		2.824	Nov 2023	-		2.824	0.000	2.824	-
Subtotal			4.277	0.570		1.665		10.161		-		10.161	0.000	16.673	N/A
Remarks															
- Increase of \$5.014M to NUWC KPT to support shift from land-based testing to in-water testing															

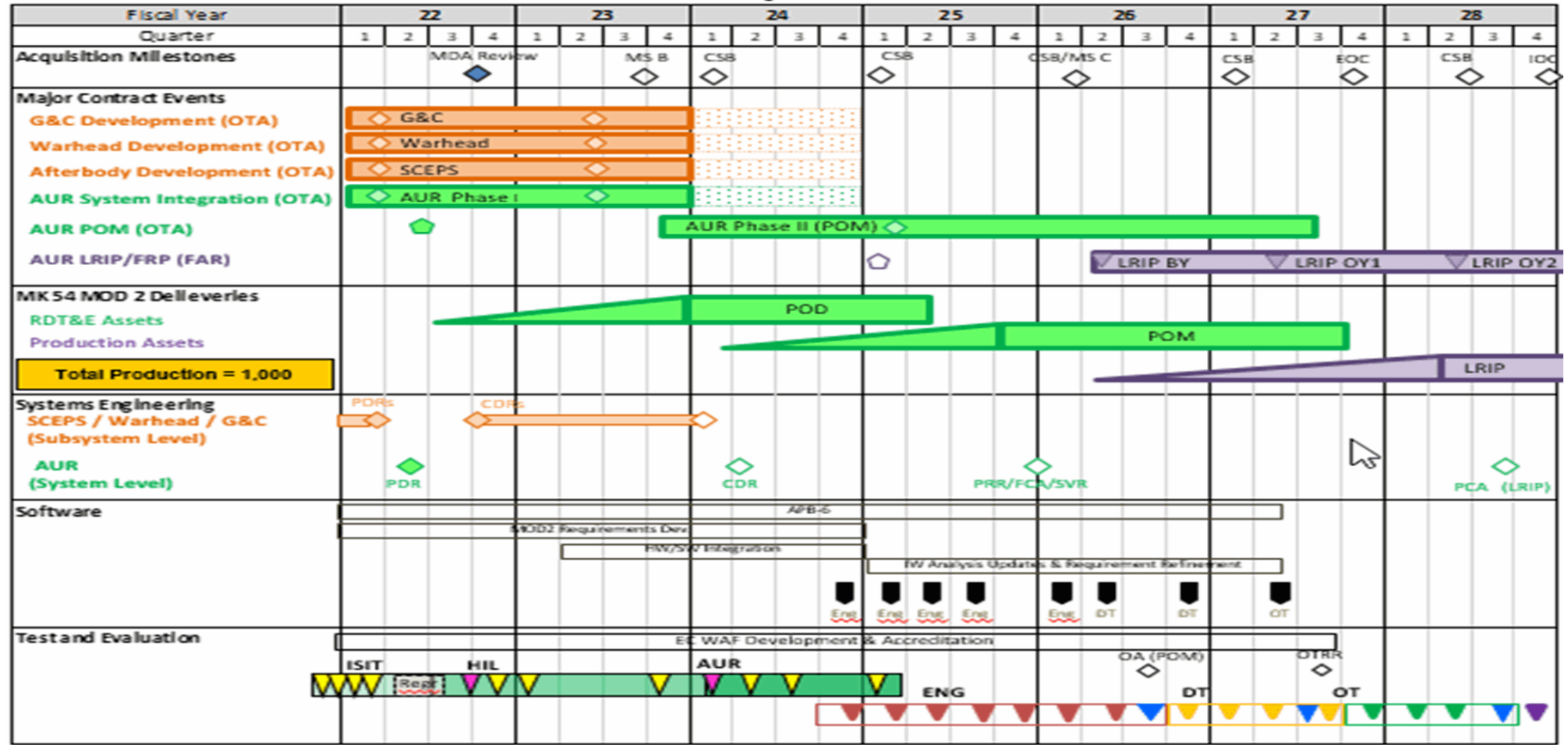


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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604610N / <i>Lightweight Torpedo Development</i>						<b>Project (Number/Name)</b> 3418 / <i>Advanced Anti-Submarine Lightweight Torpedo</i>			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
- Increase of \$2.824M to NSWC IHD to support WH qualification testing															
<b>Management Services (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Management Support	C/FPIF	EWCSS : Washington, DC	1.669	0.900	Nov 2021	0.900	Nov 2022	0.918	Jan 2024	-		0.918	0.000	4.387	-
<b>Subtotal</b>			1.669	0.900		0.900		0.918		-		0.918	0.000	4.387	N/A
			<b>Prior Years</b>	<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			211.064	80.004		120.530		197.331		-		197.331	Continuing	Continuing	N/A
<b>Remarks</b>															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604610N / Lightweight Torpedo Development	Project (Number/Name) 3418 / Advanced Anti-Submarine Lightweight Torpedo

MK 54 MOD 2 Acquisition Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604610N / <i>Lightweight Torpedo Development</i>	<b>Project (Number/Name)</b> 3418 / <i>Advanced Anti-Submarine Lightweight Torpedo</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 3418</i></b>				
Advanced Lightweight Torpedo (ALWT): ALWT MS-B	3	2023	3	2023
Advanced Lightweight Torpedo (ALWT): ALWT SCEPS Development	1	2022	4	2023
Advanced Lightweight Torpedo (ALWT): ALWT Warhead Development	1	2022	4	2023
Advanced Lightweight Torpedo (ALWT): ALWT G&C Hardware / Software Development	1	2022	4	2023
Advanced Lightweight Torpedo (ALWT): ALWT AUR Development Integration	1	2022	4	2023
Advanced Lightweight Torpedo (ALWT): ALWT Land Based Testing	1	2022	1	2025
Advanced Lightweight Torpedo (ALWT): Engineering Testing	4	2024	3	2026
Advanced Lightweight Torpedo (ALWT): Development Testing	4	2026	3	2027
Advanced Lightweight Torpedo (ALWT): Operational Testing	4	2027	4	2028
Advanced Lightweight Torpedo (ALWT): IOC	4	2028	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0604654N / JNT Service EOD
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	304.981	8.315	8.618	9.064	-	9.064	9.042	9.224	9.412	9.600	Continuing	Continuing
1829: Expl Ord Disp Proc	304.981	8.315	8.618	9.064	-	9.064	9.042	9.224	9.412	9.600	Continuing	Continuing

## A. Mission Description and Budget Item Justification

This program, aligned with the National Defense Strategy, provides Joint Service Explosive Ordnance Disposal (EOD) and the supported Combatant Commanders with information superiority by providing for the development of Unexploded Explosive Ordnance (UXO), Improvised Explosive Devices (IED), Weapons of Mass Destruction (WMD), and weapons systems Technical Manuals (TMs). TMs, which provide key identification features, hazardous materials, and safety information, are paramount to the success of EOD Mission to detect, locate, access, identify, Render Safe/Neutralize, and dispose or recover both foreign and domestic explosive threats that pose a threat to military operations, installations, personnel, and materials.

In addition, EOD Render Safe Procedures (RSP) and Disposal Procedures must be developed prior to fielding in the case of U.S. weapons and ordnance and as soon as possible after gaining knowledge of existence as it pertains to foreign ordnance and other explosive threats. These efforts require collection, exploitation, and analysis of the ordnance items and associated components, e.g., fuzing, prior to the development of EOD procedures.

As defined in DOD Directive 5160.62, assigns the Secretary of the Navy (SECNAV) the responsibility of Executive Agent for Explosive Ordnance Disposal (EOD) Technology and Training (T&T). The Executive Agent for EOD T&T is to provide for the preparation, technical development, validation, Joint Service approval, and distribution of all EOD procedures and countermeasures to include publications, manuals, bulletins, texts, and graphic aids. This program is a non-acquisition program (without traditional acquisition milestones) with on-going, continuous delivery of urgent and periodic documented procedures and publications for mines, ordnance items, weapons systems, Improvised Explosive Devices, Weapons of Mass Destruction, and related explosive hazards.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	8.348	8.618	8.890	-	8.890
Current President's Budget	8.315	8.618	9.064	-	9.064
Total Adjustments	-0.033	0.000	0.174	-	0.174
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.033	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.174	-	0.174

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604654N / JNT Service EOD	
<div><div>Change Summary Explanation</div><div>FY 2022: SBIR -\$0.033M</div><div>FY 2023: N/A</div><div>FY 2024: +\$0.191M misc. rate adjustments</div></div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604654N / JNT Service EOD				Project (Number/Name) 1829 / Expl Ord Disp Proc			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1829: Expl Ord Disp Proc	304.981	8.315	8.618	9.064	-	9.064	9.042	9.224	9.412	9.600	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program, aligned with the National Defense Strategy, provides Joint Service Explosive Ordnance Disposal (EOD) and the supported Combatant Commanders with information superiority by providing for the development of Unexploded Explosive Ordnance (UXO), Improvised Explosive Devices (IED), Weapons of Mass Destruction (WMD), and weapons

systems Technical Manuals (TMs). TMs, which provide key identification features, hazardous materials, and safety information, are paramount to the success of EOD Mission to detect, locate, access, identify, Render Safe/Neutralize, and dispose or recover both foreign and domestic explosive threats that pose a threat to military operations, installations, personnel, and materials.

In addition, EOD Render Safe Procedures (RSP) and Disposal Procedures must be developed prior to fielding in the case of U.S. weapons and ordnance and as soon as possible after gaining knowledge of existence as it pertains to foreign ordnance and other explosive threats. These efforts require collection, exploitation, and analysis of the ordnance items and associated components, e.g., fuzing, prior to the development of EOD procedures.

As defined in DOD Directive 5160.62, assigns the Secretary of the Navy (SECNAV) the responsibility of Executive Agent for Explosive Ordnance Disposal (EOD) Technology and Training (T&T). The Executive Agent for EOD T&T is to provide for the preparation, technical development, validation, Joint Service approval, and distribution of all EOD procedures and countermeasures to include; publications, manuals, bulletins, texts, and graphic aids. This program is a non-acquisition program (without traditional acquisition milestones) with ongoing, continuous delivery of urgent and periodic documented procedures and publications for mines, ordnance items, weapons systems, Improvised Explosive Devices, Weapons of Mass Destruction, and related explosive hazards.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Render-Safe Procedures Development	7.535	7.982	8.349	0.000	8.349
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> This funding will provide for the continued development of new Render Safe Procedures particularly on foreign ordnance items and their associated fuzing. Render Safe Procedures are developed, tested, validated, and necessary to eliminate both the likelihood and consequences associated with detonation of high explosives. Render Safe Procedures are unique and very specific actions performed only by Explosive Ordnance Disposal personnel that provides the Combatant Commander a capability to eliminate explosive hazards while protecting personnel, property, and infrastructure.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604654N / JNT Service EOD		Project (Number/Name) 1829 / Expl Ord Disp Proc		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Development of new Render Safe Procedures will target Great Power Competition threats. <b>FY 2024 Base Plans:</b> Render Safe Procedures Development supports new EOD Technical Manuals for American and foreign ordnance items as well as to development, testing, and validation of specific EOD Render Safe Procedures that do not currently exist. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increased funding supports the development of added publications and specific EOD Procedures targeting Great Power Competition ordnance items.						
<b>Title:</b> Improvised Explosive Device (IED), Weapons of Mass Destruction (WM) Countermeasures <b>Articles:</b>		0.780 -	0.636 -	0.715 -	0.000 -	0.715 -
<b>FY 2023 Plans:</b> Improvised Explosive Device (IED), Weapons of Mass Destruction (WMD) Countermeasures program continues to maintain alignment with the National Defense Strategy and provides for the development of Technical Manuals. Data collection, analysis, testing and processing of information will continue to support new manuals and information available for the Joint EOD warfighter encountering IED and WMD materials. <b>FY 2024 Base Plans:</b> Improvised Explosive Device (IED), Weapons of Mass Destruction (WMD) Countermeasures program supports the development of emerging technical manuals to include tactics, techniques and procedures to mitigate threats as well as document effective countermeasures. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increased funding supports the development of tactics, techniques, procedures, and applicable countermeasures documented in publications to support Joint EOD Operations against IEDs and WMDs particularly targeting emerging threats.						
Accomplishments/Planned Programs Subtotals		8.315	8.618	9.064	0.000	9.064



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604654N / JNT Service EOD	Project (Number/Name) 1829 / Expl Ord Disp Proc
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy This is a non-acquisition program.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604654N / JNT Service EOD				Project (Number/Name) 1829 / Expl Ord Disp Proc					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ordnance and Weapons Systems Procedures Development	WR	NSWCIEHODTD : Indian Head, MD	207.773	7.535	Nov 2021	7.982	Oct 2022	8.349	Nov 2023	-		8.349	Continuing	Continuing	Continuing
Improvised Explosive Device {IED}, Weapons of Mass Destruction {WMD} Countermeasures	WR	NSWCIEHODTD : Indian Head, MD	58.809	0.780	Nov 2021	0.636	Oct 2022	0.715	Nov 2023	-		0.715	Continuing	Continuing	Continuing
Improvised Explosive Device {IED}, Weapons of Mass Destruction {WMD} Countermeasures	WR	Sandia DOE : Albuquerque, NM	1.073	0.000		0.000		0.000		-		0.000	0.000	1.073	-
Foreign Mine Acquisition	WR	NSWCIEHODTD : Indian Head, MD	19.038	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Miscellaneous	WR	NSWCIEHODTD : Indian Head, MD	17.862	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			304.555	8.315		8.618		9.064		-		9.064	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel	WR	NSWCIEHODTD : Indian Head, MD	0.426	0.000		0.000		0.000		-		0.000	0.000	0.426	-
Subtotal			0.426	0.000		0.000		0.000		-		0.000	0.000	0.426	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			304.981	8.315		8.618		9.064		-		9.064	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023				
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)				
1319 / 5					PE 0604654N / JNT Service EOD					1829 / Expl Ord Disp Proc				

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JT Service EOD																												
System Development: Ordnance and Weapons Systems Procedures Development																												
System Development: Improvised Explosive Device (IED), Weapons of Mass Destruction (WMD) Countermeasures																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604654N / JNT Service EOD	Project (Number/Name) 1829 / Expl Ord Disp Proc

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
JT Service EOD				
System Development: Ordnance and Weapons Systems Procedures Development	1	2022	4	2028
System Development: Improvised Explosive Device (IED), Weapons of Mass Destruction (WMD) Countermeasures	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	46.334	40.885	45.025	62.329	-	62.329	47.085	41.100	37.439	41.916	Continuing	Continuing
7400: Combat Capability Development Transition	46.334	40.885	45.025	62.329	-	62.329	47.085	41.100	37.439	41.916	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Organic Precision Fires (OPF) is a Service Force Design priority and will provide multiple echelons of the Fleet Marine Force with an organic, loitering, beyond-line-of-sight precision strike capability. OPF will be employed at the tactical level to allow Marines to rapidly engage the enemy beyond the range of direct fire weapons while minimizing collateral damage and exposure to enemy direct and indirect fires. OPF has demonstrated through extensive war-gaming and simulation, combined with experience gained in real world operations, that it will significantly improve the organic lethality of infantry and reconnaissance formations.

Multiple materiel solutions are required to provide the envisioned capabilities to the Fleet Marine Force. Three separate efforts will be used to deliver the initial increments of OPF capabilities, with additional future efforts planned.

Initiated in FY 2021, Organic Precision Fires-Mounted (OPF-M) is the initial OPF effort. It will develop and integrate a government Command and Control (C2) system with an existing anti-armor/anti-personnel loitering munition and develop a vehicle mounted, universal multi-canister launch platform to be integrated onto multiple vehicles, starting with the Light Armored Vehicle (LAV) and Joint Light Tactical Vehicle (JLTV). Primary target sets for this system will be armored targets, dismounted personnel, and fortified emplacements/structures, with a range of approximately 25 km. It is a battalion/company level asset.

Initiated in FY 2023, the OPF-Light (OPF-L) will procure an existing, light-weight loitering munition for use by dismounted elements. It provides a dismounted, lightweight, man-packable, loitering munition that extends the capability of the infantry squad/platoon to engage targets to the maximum range of organic Intelligence, Surveillance, and Reconnaissance (ISR) assets at that level. OPF-L will provide a counter-defilade, anti-personnel and anti-materiel capability. Primary target sets for this system will be enemy personnel, crew-served weapons, and Command and Control (C2) nodes. This will be principally a platoon/squad level asset.

Initiating in FY 2024, the OPF-Dismounted (OPF-D) will procure an existing anti-armor/anti-personnel, loitering munition system, to include the vendor command and control system, capable of being launched from the ground and transported by an Ultra-Light Tactical Vehicle (ULTV) or man-packed by dismounted Marines. Primary target sets for this system will be armored targets, dismounted personnel, and fortified emplacements/structures, with a range of approximately 25 km. This will be principally a company/platoon level asset.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	42.144	45.025	66.275	-	66.275
Current President's Budget	40.885	45.025	62.329	-	62.329
Total Adjustments	-1.259	0.000	-3.946	-	-3.946
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.259	0.000			
• Program Adjustments	0.000	0.000	16.054	-	16.054
• Rate/Misc Adjustments	0.000	0.000	-20.000	-	-20.000
<b>Change Summary Explanation</b>					
The increase of \$17.304M reflects the initial purchase OPF-L test assets, Limited User Evaluations for OPF-M, and program initiation of OPF-D.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST				Project (Number/Name) 7400 / Combat Capability Development Transition			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
7400: Combat Capability Development Transition	46.334	40.885	45.025	62.329	-	62.329	47.085	41.100	37.439	41.916	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Organic Precision Fires (OPF) is a Marine Corps Force Design priority and will provide multiple echelons of the Fleet Marine Force with an organic, loitering, beyond-line-of-sight precision strike capability. OPF has demonstrated through extensive war-gaming and simulation, combined with experience gained in real world operations, that it will significantly improve the organic lethality of infantry and reconnaissance formations. Providing a Hunter (Group 2 UAS) - Killer (loitering munition) combination, OPF will deliver precision effects as well as surveillance before, during, and after striking targets, at ranges beyond 40 kilometers, while reducing the potential for collateral damage. As such, the OPF capability is a critical element of force modernization to close the gap between long range/precision fires and close-combat weapons.

In FY 2023, OPF-Mounted (OPF-M) conducted developmental and operational testing including System Integration Events (SIE) for launcher and C2 maturation, munition integration, and an Early Operational Assessment (EOA). Following the EOA, OPF-M will conduct system level and munitions qualification testing in FY 2024 to support transition into production.

In FY 2023, the program will release a RFP for OPF-Light (OPF-L). In FY 2024, the program will award two contracts for munitions and C2 systems supporting developmental testing.

In FY 2024, OPF-Dismounted (OPF-D) will conduct market analysis to refine requirements for product specifications and release a RFP for contract award in FY 2025.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Organic Precision Fires (OPF)	40.885	45.025	62.329	0.000	62.329
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> OPF-M - Continued C2 and software development and integration - Purchased munitions for testing - Conducted multiple System Integration Events (SIE) to further mature launcher and C2 software compatibility and munition integration - Began development of a universal launcher					

PE 0604657M: MARINE CORPS GROUND COMBAT/SUPPORTING  
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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604657M / MARINE CORPS GROUN D COMBAT/SUPPORTING ARMS SYST	Project (Number/Name) 7400 / Combat Capability Development Transition				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Conducted New Equipment Training (NET) in support of Early Operational Assessment (EOA)</div> <div>- Conducted EOA</div> <div>- Completed analysis and development of training systems requirements and improve training simulator</div> <div>OPF-L</div> <div>- Conducted market research and vendor manufacturing analysis</div> <div>- Completed product specification requirements for RFP and source selection evaluation criteria</div> <div>FY 2024 Base Plans:</div> <div>OPF-M</div> <div>- Continue C2 and software development and integration</div> <div>- Continue development of a universal launcher</div> <div>- Purchase OPF-M test assets to conduct post EOA system level testing and munitions qualification testing</div> <div>- Conduct Limited User Evaluations (LUE) to validate concept of employment and inform system improvements</div> <div>OPF-L</div> <div>- Award two contracts for test assets to include munitions and C2 systems</div> <div>- Complete test planning and conduct Test Readiness Review (TRR)</div> <div>- Initiate developmental testing</div> <div>OPF-D</div> <div>- Conduct market research and vendor manufacturing analysis</div> <div>- Initiate product specification requirements for RFP and source selection evaluation criteria</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>The increase reflects the initial purchase OPF-L test assets, Limited User Evaluations for OPF-M, and program initiation of OPF-D.</div>						
Accomplishments/Planned Programs Subtotals		40.885	45.025	62.329	0.000	62.329



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy								<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST				<b>Project (Number/Name)</b> 7400 / Combat Capability Development Transition			

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC/4733: Organic Precision Fires (OPF)	0.000	0.000	0.000	-	0.000	126.864	219.344	107.158	204.781	Continuing	Continuing
• PMC/3088: Organic Precision Fires (OPF)	0.000	0.000	0.000	-	0.000	112.219	112.212	114.456	116.745	0.000	455.632

**Remarks**

**D. Acquisition Strategy**

The OPF-M was designated as a Mid-Tier Acquisition (MTA) program for Rapid Prototyping in order to reduce program risk by developing a system level prototype, maturing the technology and gaining user feedback to inform the Capabilities Development Document in support of a decision to transition to a Major Capability Acquisition pathway. The MTA will continue through FY 2024 and will be used to conduct system level testing and munitions qualification testing in support of transitioning into production. Based on successfully demonstrating the prototype and completing system level qualification testing, the program will transition to a Major Capability Acquisition pathway, entering at MS C in FY 2025. The program will seek to award a Federal Acquisition Regulations (FAR) based production contract to the current vendor based on the authorities of 10 USC 4022 and having successfully completed a rapid prototyping project that was previously competed.

The OPF-L program will be designated as an Abbreviated Acquisition Program in FY 2023. A Request For Proposal (RFP) will be released for non-developmental, loitering munition systems in FY 2023. In FY 2024, the program will award Indefinite Delivery/Indefinite Quantity contracts to two vendors for systems and munitions qualification testing, as well as follow-on systems and munitions procurements. Upon completion of testing, the program will issue additional delivery orders to the successful vendor(s).

The OPF-D effort will enter the Major Capability Acquisition (MCA) pathway at Milestone B in FY 2025. A RFP will be released in FY 2024 to award a FAR based contract for a loitering munition system, to include the vendor command and control system, capable of being launched from the ground and transported by a ULTV or man-packed by dismounted Marines.

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST

## Project (Number/Name)

7400 / Combat Capability Development Transition

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	20.263	0.000		0.000		0.000		-		0.000	0.000	20.263	-
OPF-M Vendor Development	C/CPFF	Mistral : Bethesda, MD	9.407	5.407	Nov 2021	4.470	Nov 2022	3.398	Nov 2023	-		3.398	Continuing	Continuing	Continuing
OPF-M Government Development	Various	Various : Various	4.460	1.590	Nov 2021	3.738	Nov 2022	2.600	Nov 2023	-		2.600	Continuing	Continuing	Continuing
OPF-M Assembly and Installation	Various	Various : Various	0.000	4.022	Nov 2021	0.667	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
OPF-M Prototype - Universal Mount	C/BA	NSWC : Panama City, FL	0.510	0.170	Nov 2021	0.000		0.000		-		0.000	0.680	1.360	-
OPF-M Prototype - C2	MIPR	SMDC : Huntsville, AL	0.990	0.330	Nov 2021	0.000		0.000		-		0.000	1.320	2.640	-
OPF-M Prototype - Universal Launcher	C/FFP	Mistral : Bethesda, MD	0.750	0.250	Nov 2021	0.000		0.000		-		0.000	1.000	2.000	-
OPF-M Prototype - Stalker (Hunter)	MIPR	DLA : Norfolk, VA	0.000	3.000	Nov 2021	0.000		0.000		-		0.000	3.000	6.000	-
OPF-M Munition Test Assets	C/FFP	Mistral : Bethesda, MD	0.000	12.760	Nov 2021	15.250	Nov 2022	16.477	Nov 2023	-		16.477	0.000	44.487	-
OPF-L Munition Test Assets	C/BA	TBD : TBD	0.000	0.000		0.000		16.103	Feb 2024	-		16.103	0.000	16.103	-
<b>Subtotal</b>			36.380	27.529		24.125		38.578		-		38.578	Continuing	Continuing	N/A

## Remarks

The increase is due to the award of the OPF Light vendor contract.

## Support (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	3.298	0.000		0.000		0.000		-		0.000	0.000	3.298	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST				Project (Number/Name) 7400 / Combat Capability Development Transition					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OPF-M Engineering Support	Various	Various : Various	0.879	1.914	Nov 2021	3.970	Nov 2022	3.918	Nov 2023	-		3.918	Continuing	Continuing	Continuing
OPF-L Engineering Support	C/BA	Various : Various	0.000	0.000		2.036	Nov 2022	2.047	Nov 2023	-		2.047	0.000	4.083	-
OPF-D Engineering Support	C/BA	Various : Various	0.000	0.000		0.000		2.062	Nov 2023	-		2.062	0.000	2.062	-
OPF-M Training System Development	MIPR	SMDC : Huntsville, AL	0.000	1.862	Apr 2022	0.945	Nov 2022	0.000	Nov 2023	-		0.000	Continuing	Continuing	Continuing
OPF-M JLTV Platform Support	Various	Various : Various	0.000	0.883	Apr 2022	0.404	Jan 2023	0.000	Jan 2024	-		0.000	Continuing	Continuing	Continuing
OPF-M LAV Platform Support	Various	Various : Various	0.537	1.445	Nov 2021	1.523	Nov 2022	1.599	Nov 2023	-		1.599	Continuing	Continuing	Continuing
Subtotal			4.714	6.104		8.878		9.626		-		9.626	Continuing	Continuing	N/A
Remarks The increase is due to the initiation of OPF-D.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	2.960	5.324	Nov 2021	7.477	Nov 2022	9.804	Nov 2023	-		9.804	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	Various	Various : Various	0.000	0.000	Nov 2021	1.230	Nov 2022	0.000	Jan 2024	-		0.000	Continuing	Continuing	Continuing
Subtotal			2.960	5.324		8.707		9.804		-		9.804	Continuing	Continuing	N/A
Remarks The increase is due to OPF-M conducting Limited User Evaluations and OPF-L conducting initial safety testing.															

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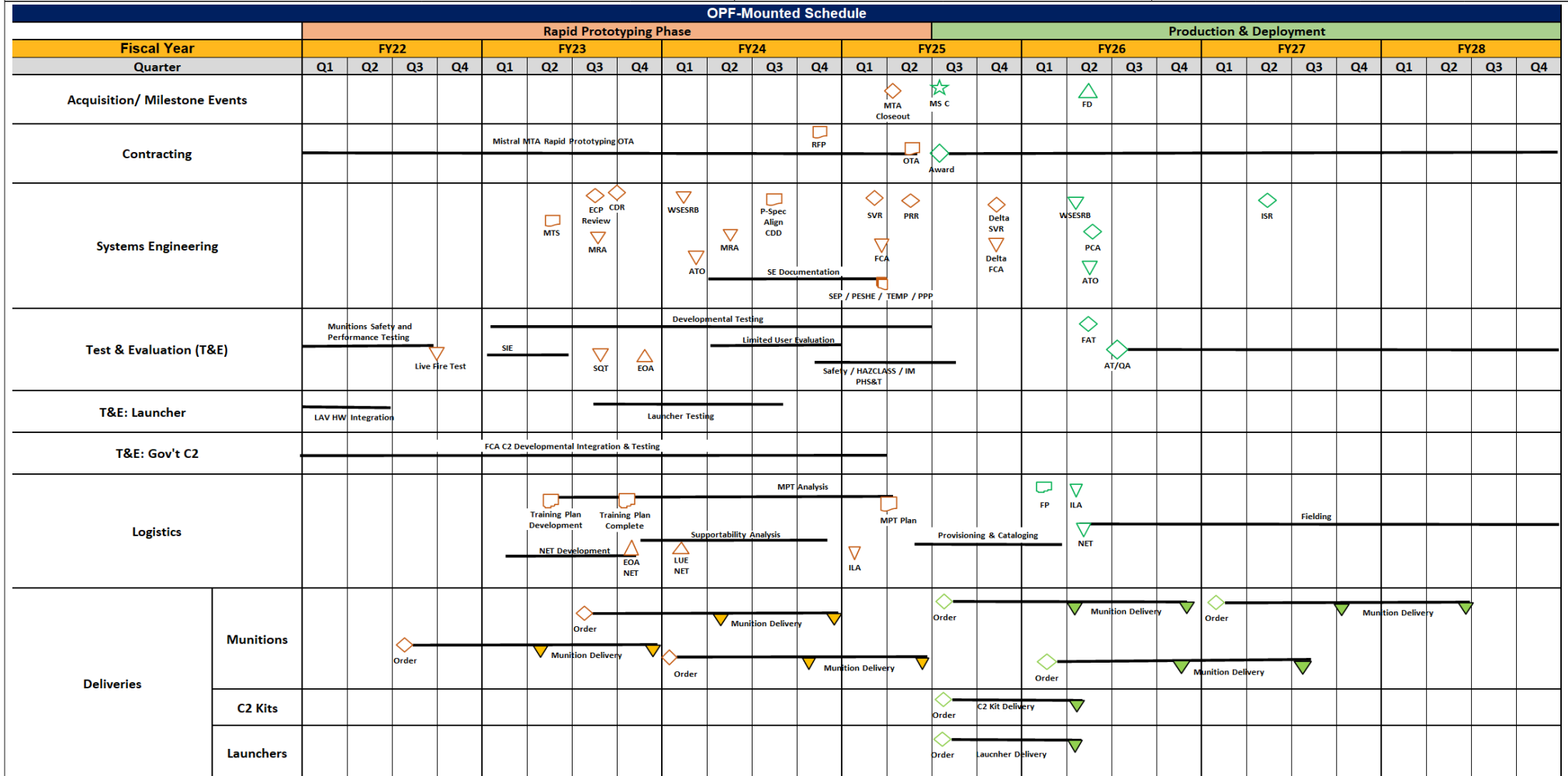
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604657M / MARINE CORPS GROUN D COMBAT/SUPPORTING ARMS SYST				Project (Number/Name) 7400 / Combat Capability Development Transition					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	Various : Various	0.150	0.182	Oct 2021	0.250	Oct 2022	0.250	Oct 2023	-		0.250	Continuing	Continuing	Continuing
Program/Cost Management	Various	Various : Various	2.130	1.746	Oct 2021	3.065	Oct 2022	4.071	Oct 2023	-		4.071	Continuing	Continuing	Continuing
Subtotal			2.280	1.928		3.315		4.321		-		4.321	Continuing	Continuing	N/A
Remarks The increase is due to increase in program support of OPF-D.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			46.334	40.885		45.025		62.329		-		62.329	Continuing	Continuing	N/A
Remarks Overall increase is due to procurement OPF-L test assets, Limited User Evaluations for OPF-M, and program initiation of OPF-D.															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5R-1 Program Element (Number/Name)  
PE 0604657M / MARINE CORPS GROUND  
COMBAT/SUPPORTING ARMS SYSTProject (Number/Name)  
7400 / Combat Capability Development  
Transition

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Appropriation/Budget Activity	1319 / 5

**R-1 Program Element (Number/Name)**  
PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST

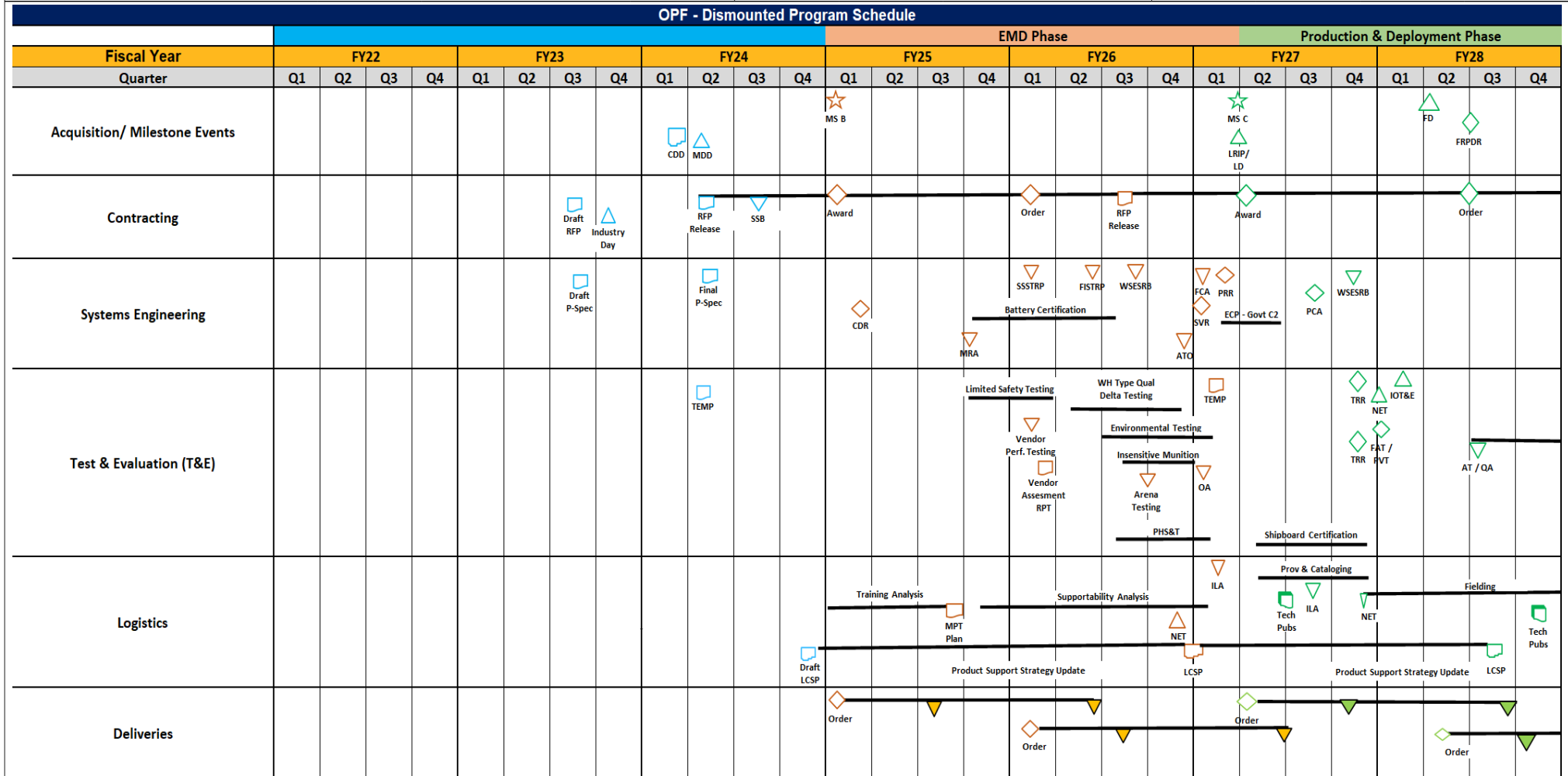
<b>Project (Number/Name)</b> 7400 / <i>Combat Capability Development Transition</i>
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OPF-Light Schedule																												
	FY22												P&D															
Fiscal Year	FY22				FY23				FY24				FY25				FY26				FY27				FY28			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Acquisition/ Milestone Events																												
Contracting																												
Systems Engineering																												
Test & Evaluation																												
Logistics																												
Deliveries																												

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5R-1 Program Element (Number/Name)  
PE 0604657M / MARINE CORPS GROUND  
COMBAT/SUPPORTING ARMS SYSTProject (Number/Name)  
7400 / Combat Capability Development  
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604657M / MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST	Project (Number/Name) 7400 / Combat Capability Development Transition	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 7400				
OPF-M Live Fire Testing - Munitions	4	2022	4	2022
OPF-M Early Operational Testing	4	2023	4	2023
OPF-M Milestone C	3	2025	3	2025
OPF-L Munition Contract Award	2	2024	2	2024
OPF-D Munition Contract Award	1	2025	1	2025



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0604703N / Personnel, Trng, Sim, & Human Factors							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	19.400	7.128	7.454	9.319	-	9.319	10.011	9.169	8.913	9.092	Continuing	Continuing
1822: Manpower Pers & Human Fact System	19.400	7.128	7.454	9.319	-	9.319	10.011	9.169	8.913	9.092	Continuing	Continuing

## A. Mission Description and Budget Item Justification

This program is funded under RDT&E operational systems development because it encompasses engineering and development of new end-items prior to production approval decision along with the enhancement and upgrading of existing Manpower, Personnel, Training, and Education decision support systems, tools, and models.

This non-acquisition category program provides funds for continued R&D for broader application of advanced technologies to transition successful research proof-of-concept demonstrations into operational use. This PE provides funding to support the transition of models and decision support tools from RDT&E funded to production and into the hands of analysts and program managers throughout the MyNavyHR enterprise. The PE also supports the application and adaptation of proven industry models, tools, and technologies to Navy MPTE problems where GOTS solutions are insufficient or non-existent. The second goal of the PE is to successfully implement 90% of the industry-standard tools that are attempted to be used in Navy applications. In FY22, there is a continued need to advance the engineering development of emerging MyNavyHR business systems, technologies, and models from the Navy War Centers, coordinate with other Navy Labs and Research Institutions, and fiscally participate in the transition of MyNavyHR-domain products out of the S&T research environments (e.g. ONR). Per FNC guidance, the S&T programs are to have funding split among resource sponsors and stakeholders using a shared cost model (i.e. 30/50/100%) over the engineering development timeline.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	7.375	7.454	10.311	-	10.311
Current President's Budget	7.128	7.454	9.319	-	9.319
Total Adjustments	-0.247	0.000	-0.992	-	-0.992
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.247	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.992	-	-0.992

## Change Summary Explanation

Technical: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604703N / Personnel, Trng, Sim, & Human Factors				Project (Number/Name) 1822 / Manpower Pers & Human Fact System			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1822: Manpower Pers & Human Fact System	19.400	7.128	7.454	9.319	-	9.319	10.011	9.169	8.913	9.092	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This PE provides funding to support the transition of models and decision support tools from RDT&E funded research, Science and Technology (6.2-6.3), to production and into the hands of analysts and program managers throughout the Manpower, Personnel, Training and Education enterprise. The PE also supports the application of proven industry models, tools and methodologies to Navy MPTE problems where GOTS solutions are non-existent. One goal of this PE is to transition 90% of successful S&T products to production while distributing 80% of successful educational and research products from the Naval War College to a broader Navy audience to be used by USN Sailors and civilians. Additionally, another goal of this PE is to provide relevant and technologically advanced MPTE-domain systems to the Navy Recruiting and Training Commands.

Articles reflect number of accomplishments and planned programs. Programs are divided into mission areas since names of projects/programs change based on decision points and approvals of projects that happen in-execution year. N1/MyNavy HR RDTE relies on maximum flexibility to meet capability demands that fill gaps in Manpower, Personnel, Training, and Education as well as injecting emerging technology into those capabilities. Thus specific projects are not named, but can be given in the phasing matrix. N1 will work toward a more deliberate S&T program that better specifies the use of RDTE funds, specifically the substantial coordination required with another OPNAV Code (N94/ONR) with its own scheduling and prioritization schema, to narrow down specific projects and/or modifications in current projects.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Manpower Pers & Human Fact System	7.128	7.454	9.319	0.000	9.319
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Continue prototype development of (3) AI/ML (Artificial Intelligence/Machine Learning) Training and Human Resources systems</li> <li>- Continue transition testing of AI/ML Training and HR systems</li> <li>- Continue development of Selection and classification modernization tools</li> <li>- Continue development of ADE (Authoritative Data Environment) model application prototypes</li> <li>- Continue development of Individualized training integration systems of systems</li> <li>- Continue development of Behavioral Science support tools and automation</li> <li>- Continue Science and Technology development of dynamic systems modeling tools (2) for Manpower and Support Decision Making</li> </ul>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604703N / Personnel, Trng, Sim, & Human Factors		Project (Number/Name) 1822 / Manpower Pers & Human Fact System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue Research and Development in talent management domain</div> <div>- Development and research for unmanned campaign plan manpower and rating-</div> <div>- Development of psychometric implementation and modernization of Enlisted exams</div> <div>- Continued development and research for future recruiting costing models</div> <div>- Program Management support for RDTE (Research Development Training Education) Development</div> <div>- Continue enhancement of Training IT (Information Technology) Modernization</div> <div>- Continue Modeling &amp; Simulation (M&amp;S) development and emerging requirements</div> <div>- Development and research in recruiting tools for officer and reserves</div> <div>FY 2024 Base Plans:</div> <div>- Continue transition testing of AI/ML (Artificial Intelligence/Machine Learning) Training and Human Resources systems</div> <div>- Continue development of ADE (Authoritative Data Environment) model application prototypes</div> <div>- Continue development of Individualized training integration systems of systems</div> <div>- Continue development of Behavioral Science support tools and automation</div> <div>- Continue S&amp;T (Science and Technology) development of dynamic systems modeling tools (2) for Manpower and Support Decision Making</div> <div>- Continue R&amp;D (Research and Development) in talent management domain</div> <div>- Development and research for unmanned campaign plan manpower and rating</div> <div>- Development of psychometric implementation and modernization of Enlisted exams</div> <div>- Continued development and research for future recruiting costing models</div> <div>- Program Management support for RDTE (Research Development Training Education) Development</div> <div>- Continue enhancement of Training IT (Information Technology) Modernization</div> <div>- Continue M&amp;S (Modeling and Simulation) development and emerging requirements</div> <div>- Development and research in recruiting tools for officer and reserves</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>FY24 increase (\$1.865M) supports development and transition testing of prototypes.</div>						
Accomplishments/Planned Programs Subtotals		7.128	7.454	9.319	0.000	9.319

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604703N / Personnel, Trng, Sim, & Human Factors	Project (Number/Name) 1822 / Manpower Pers & Human Fact System
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604703N / Personnel, Trng, Sim, & Hu man Factors				Project (Number/Name) 1822 / Manpower Pers & Human Fact System					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support - M&S NEMMO	Allot	CNP : Washington, DC	1.350	0.450	Nov 2021	0.750	Oct 2022	0.600	Oct 2023	-		0.600	Continuing	Continuing	Continuing
Development Support - Analytic Visualization	Allot	CNP : Washington, DC	0.000	0.316	Oct 2021	0.420	Oct 2022	0.000		-		0.000	0.000	0.736	-
Development Support - Program Mgmt/Engr Support (Incl DTIC PM fees	Allot	CNP : Washington, DC	0.000	0.000		0.380	Oct 2022	0.450	Oct 2023	-		0.450	Continuing	Continuing	Continuing
Development Support - COA DSS (MNW/MNF)	Allot	CNP : ONR - Arlington, VA	3.910	0.595	Oct 2021	0.700	Oct 2022	0.908	Oct 2023	-		0.908	Continuing	Continuing	Continuing
Development Support - AI/ ML Innovation (MNL)	Allot	ONR : ONR - Arlington, VA	3.000	1.000	Oct 2021	1.854	Oct 2022	0.900	Oct 2023	-		0.900	Continuing	Continuing	Continuing
Development Support - Talent Management	Allot	CNP : ONR- Arlington, VA ,Washington, DC	0.000	0.000		0.300	Oct 2022	0.850	Oct 2023	-		0.850	Continuing	Continuing	Continuing
Development Support - Behavioral Science Advancements (PAL3)	Allot	CNP : Washington, DC, Army California	0.000	0.000		0.500	Mar 2023	0.750	Oct 2023	-		0.750	Continuing	Continuing	Continuing
Development Support - Recruiting/Selection (NCAPS, VRT)	Allot	NAWCTSD : Millington, TN	7.000	0.250	Oct 2021	0.000		0.000		-		0.000	0.000	7.250	-
Development Support - Supply Chain Mgmt DSS (FRMD)	Allot	CNP : Wshington, DC	2.000	0.500	Oct 2021	0.500	Oct 2022	0.000		-		0.000	0.000	3.000	-
Development Support -AI/ ML Innovation (AI--LVC)	Allot	NAWCTSD : Millington, TN	0.250	0.000		0.250	Nov 2022	0.611	Nov 2023	-		0.611	Continuing	Continuing	Continuing
Development Support - NP2	Allot	CNP : CNP - Washngton, DC	1.890	3.800	May 2022	0.000		0.000		-		0.000	0.000	5.690	-
Development Support - NLEC/NETC Tools (DRO EEA)	Allot	CNP : CNP - Washington, DC	0.000	0.000		0.500	Nov 2022	0.750	Oct 2023	-		0.750	Continuing	Continuing	Continuing
Developemnt Support - NPC/NRC tools (e.g.,	Allot	CNP : CNP - Washington, DC	0.000	0.217	Oct 2021	0.550	Oct 2022	1.200	Oct 2023	-		1.200	Continuing	Continuing	Continuing

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604703N / <i>Personnel, Trng, Sim, &amp; Human Factors</i>						<b>Project (Number/Name)</b> 1822 / <i>Manpower Pers &amp; Human Fact System</i>			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
OTC/RTC Hard Card, Psychometric exam)															
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum)	Allot	CNP : CNP - Washington, DC	0.000	0.000		0.500	Oct 2022	0.750	Oct 2023	-		0.750	Continuing	Continuing	Continuing
Development Support - Unmanned Campaign Plan Manpower Rating	Allot	CNP : CNP - Washington, DC	0.000	0.000		0.250	Oct 2022	0.800	Oct 2023	-		0.800	Continuing	Continuing	Continuing
Development Support - MyNavy HR S&T Transformation	Allot	CNP : CNP - Washington, DC	0.000	0.000		0.000		0.750	Oct 2023	-		0.750	Continuing	Continuing	Continuing
<b>Subtotal</b>			19.400	7.128		7.454		9.319		-		9.319	Continuing	Continuing	N/A
<b>Remarks</b> Larger investments as development and transition testing of prototypes will be necessary. Initial costs are lower than testing, development, and integration costs.															
			<b>Prior Years</b>	<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			19.400	7.128		7.454		9.319		-		9.319	Continuing	Continuing	N/A
<b>Remarks</b> Larger investments as development and transition testing of prototypes will be necessary. Initial costs are lower than testing, development, and integration costs.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023				
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)				
1319 / 5					PE 0604703N / Personnel, Trng, Sim, & Human Factors					1822 / Manpower Pers & Human Fact System				
Proj 1822	FY 2022				FY 2023				FY 2024					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
Modeling and Simulation (NEMMO)		▲	▲		▲		▲	▲		▲				
Analytic Visualization Tools (CNP Dashboard)		CNP D ▲	▲			▲	▲							
Program Management & Engineering Solution (DTIC PM Fees)					PM & ES ▲		▲		▲					
COA Decision Support (My Navy World Decision Support)	MNW/NMF ▲		▲	▲		▲				▲	▲			
AI/ML-Enabled HR systems MNL, AI Enabled LVC					AI/ML ▲	▲	▲		▲		▲	▲		
Talent Management					TM ▲	▲		▲	▲	▲		▲		
BEHAVIORAL SCIENCE Investment and COE					PAL3 ▲		▲		▲		▲			
Recruiting /Selection (e.g. NCAPS, VRT)	RST ▲	▲		▲										
Supply Chain Mgmt Decision Support System DSS, ADE dev (e.g.FRMD)	FMRD ▲		▲		▲		▲							
Development Support - NP2			DS - NP2 ▲											
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum)					NETC TT ▲	▲		▲	▲	▲		▲		
Development Support - NPC/NRC tools (e.g., OTC/RTC Hard Card, Psychometric exam)				NPC/NRC Tools ▲		▲		▲		▲		▲		
Development Support - Unmanned Campaign Plan Manpower Rating					UCPMR ▲		▲		▲			▲		
Development Support - MyNavy HR S&T Transformation												MN HR S&T Trans ▲		
Development Support - NLEC/NETC Tools (DRO EEA)					DRO EEA ▲	▲		▲	▲	▲		▲		
Development Support - AI/ML Innovation (e.g MNL and Transition Costs)	MNL and Trans Cost ▲		▲	▲		▲			▲	▲				
2024PB - 0604703N - 1822														

2024PB - 0604703N - 1822

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604703N / Personnel, Trng, Sim, &amp; Human Factors

## Project (Number/Name)

1822 / Manpower Pers &amp; Human Fact System

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 1822</b>				
Modeling and Simulation (NEMMO): Modeling and Simulation (NEMMO)1	2	2022	2	2022
Modeling and Simulation (NEMMO): NEMMO2	3	2022	3	2022
Modeling and Simulation (NEMMO): NEMMO 3	1	2023	1	2023
Modeling and Simulation (NEMMO): NEMMO 4	3	2023	3	2023
Modeling and Simulation (NEMMO): NEMMO 5	4	2023	4	2023
Modeling and Simulation (NEMMO): NEMMO 6	2	2024	2	2024
Modeling and Simulation (NEMMO): NEMMO 7	1	2025	1	2025
Modeling and Simulation (NEMMO): NEMMO 8	2	2025	2	2025
Modeling and Simulation (NEMMO): NEMMO 9	1	2026	1	2026
Modeling and Simulation (NEMMO): NEMMO 10	3	2026	3	2026
Modeling and Simulation (NEMMO): NEMMO 11	4	2026	4	2026
Modeling and Simulation (NEMMO): NEMMO 12	2	2027	2	2027
Modeling and Simulation (NEMMO): NEMMO 13	4	2027	4	2027
Modeling and Simulation (NEMMO): NEMMO 14	2	2028	2	2028
Modeling and Simulation (NEMMO): NEMMO 15	4	2028	4	2028
Analytic Visualization Tools (CNP Dashboard): CNP D1	2	2022	2	2022
Analytic Visualization Tools (CNP Dashboard): CNP D2	3	2022	3	2022
Analytic Visualization Tools (CNP Dashboard): CNP D3	3	2023	3	2023
Analytic Visualization Tools (CNP Dashboard): CNP D4	2	2023	2	2023
Analytic Visualization Tools (CNP Dashboard): CNP D5	3	2023	3	2023
Program Management & Engineering Solution (DTIC PM Fees): PM & ES 1	1	2023	1	2023



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604703N / Personnel, Trng, Sim, & Human Factors		Project (Number/Name) 1822 / Manpower Pers & Human Fact System	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Program Management & Engineering Solution (DTIC PM Fees): PM & ES 2	1	2024	1	2024
Program Management & Engineering Solution (DTIC PM Fees): PM & ES 3	1	2025	1	2025
Program Management & Engineering Solution (DTIC PM Fees): PM & ES 4	2	2025	2	2025
Program Management & Engineering Solution (DTIC PM Fees): PM & ES 5	1	2026	1	2026
Program Management & Engineering Solution (DTIC PM Fees): P,M & ES 6	2	2026	2	2026
COA Decision Support (My Navy World Decision Support): MNW/MNF 1	1	2022	1	2022
COA Decision Support (My Navy World Decision Support): MNW/MNF 2	3	2022	3	2022
COA Decision Support (My Navy World Decision Support): MNW/MNF 3	4	2022	4	2022
COA Decision Support (My Navy World Decision Support): MNW/MNF 4	2	2023	2	2023
COA Decision Support (My Navy World Decision Support): MNW/MNF 5	2	2024	2	2024
COA Decision Support (My Navy World Decision Support): MNW/MNF 6	3	2024	3	2024
COA Decision Support (My Navy World Decision Support): MNW/MNF 7	1	2025	1	2025
COA Decision Support (My Navy World Decision Support): MNW/MNF 8	3	2025	3	2025
COA Decision Support (My Navy World Decision Support): MNW/MNF 9	4	2025	4	2025
COA Decision Support (My Navy World Decision Support): MNW/MNF 10	2	2026	2	2026
COA Decision Support (My Navy World Decision Support): MNW/MNF 11	4	2026	4	2026
COA Decision Support (My Navy World Decision Support): MNW.MNF 12	2	2027	2	2027
COA Decision Support (My Navy World Decision Support): MNW/MNF 13	4	2027	4	2027
COA Decision Support (My Navy World Decision Support): MNW/MNF 14	2	2028	2	2028
COA Decision Support (My Navy World Decision Support): MNW/MNF 15	4	2028	4	2028
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 1	1	2023	1	2023
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 2	2	2023	2	2023
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 3	3	2023	3	2023
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 4	1	2024	1	2024
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 6	3	2024	3	2024

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604703N / Personnel, Trng, Sim, &amp; Human Factors

## Project (Number/Name)

1822 / Manpower Pers &amp; Human Fact System

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 7	4	2024	4	2024
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 8	2	2025	2	2025
AI/ML-Enabled HR systems MNL, AI Enabled LVC: AI/ML 9	3	2025	3	2025
Talent Management: TM 1	1	2023	1	2023
Talent Management: TM 2	2	2023	2	2023
Talent Management: TM 3	4	2023	4	2023
Talent Management: TM 4	1	2024	1	2024
Talent Management: TM 5	2	2024	2	2024
Talent Management: TM 6	4	2024	4	2024
Talent Management: TM 7	2	2025	2	2025
Talent Management: TM 8	3	2025	3	2025
Talent Management: TM 9	1	2026	1	2026
Talent Management: TM 10	2	2026	2	2026
Talent Management: TM 11	3	2026	3	2026
Talent Management: TM 12	4	2026	4	2026
Talent Management: TM 13	2	2027	2	2027
Talent Management: TM 14	3	2027	3	2027
Talent Management: TM 15	2	2028	2	2028
Talent Management: TM 16	3	2028	3	2028
BEHAVIORAL SCIENCE Investment and COE: PAL3 1	1	2023	1	2023
BEHAVIORAL SCIENCE Investment and COE: PAL3 2	3	2023	3	2023
BEHAVIORAL SCIENCE Investment and COE: PAL3 3	1	2024	1	2024
BEHAVIORAL SCIENCE Investment and COE: PAL3 4	3	2024	3	2024
Recruiting /Selection (e.g. NCAPS. VRT): RST 1	1	2022	1	2022
Recruiting /Selection (e.g. NCAPS. VRT): RST 2	2	2022	2	2022

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604703N / Personnel, Trng, Sim, &amp; Human Factors

## Project (Number/Name)

1822 / Manpower Pers &amp; Human Fact System

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Recruiting /Selection (e.g. NCAPS. VRT): RST 3	4	2022	4	2022
Supply Chain Mgmt Decision Support System DSS, ADE dev (e.g.FRMD): FRMD 1	1	2022	1	2022
Supply Chain Mgmt Decision Support System DSS, ADE dev (e.g.FRMD): FRMD 2	3	2022	3	2022
Supply Chain Mgmt Decision Support System DSS, ADE dev (e.g.FRMD): FRMD 3	1	2023	1	2023
Supply Chain Mgmt Decision Support System DSS, ADE dev (e.g.FRMD): FRMD 4	3	2023	3	2023
Supply Chain Mgmt Decision Support System DSS, ADE dev (e.g.FRMD): FMRD 5	4	2023	1	2028
Development Support - NP2: DS - NP2 1	3	2022	3	2022
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum): NETC TT 1	1	2023	1	2023
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum): NETC TT 2	2	2023	2	2023
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum): NETC TT 3	4	2023	4	2023
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum): NETC TT 4	1	2024	1	2024
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum): NETC TT 5	2	2024	2	2024
Development Support - NETC Training Tools (e.g., Career-Long Learning Continuum): NETC TT 6	4	2024	4	2024
Development Support - NPC/NRC tools (e.g., OTC/RTC Hard Card, Psychometric exam): NPC/NRC Tools 1	4	2022	4	2022
Development Support - NPC/NRC tools (e.g., OTC/RTC Hard Card, Psychometric exam): NPC/NRC Tools 2	2	2023	2	2023
Development Support - NPC/NRC tools (e.g., OTC/RTC Hard Card, Psychometric exam): NPC/NRC Tools 3	4	2023	4	2023
Development Support - NPC/NRC tools (e.g., OTC/RTC Hard Card, Psychometric exam): NPC/NRC Tools 4	2	2024	2	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604703N / Personnel, Trng, Sim, & Human Factors		Project (Number/Name) 1822 / Manpower Pers & Human Fact System	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Development Support - NPC/NRC tools (e.g., OTC/RTC Hard Card, Psychometric exam): NPC/NRC Tools 5	4	2024	4	2024
Development Support - NPC/NRC tools (e.g., OTC/RTC Hard Card, Psychometric exam): NPC/NRC Tools 6	1	2025	1	2025
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 1	1	2023	1	2023
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 2	3	2023	3	2023
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 3	1	2024	1	2024
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 4	4	2024	4	2024
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 5	2	2025	2	2025
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 6	2	2025	2	2025
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 7	1	2026	1	2026
Development Support - Unmanned Campaign Plan Manpower Rating: UCPMR 8	3	2026	3	2026
Development Support - Unmanned Campaign Plan Manpower Rating: UCPRM 9	2	2027	2	2027
Development Support - Unmanned Campaign Plan Manpower Rating: UCPRM 10	2	2028	2	2028
Development Support - MyNavy HR S&T Transformation: MN HR S&T Trans 1	4	2024	4	2024
Development Support - MyNavy HR S&T Transformation: MN HR S&T Trans 2	1	2025	1	2025
Development Support - MyNavy HR S&T Transformation: MN HR S&T Trans 3	2	2025	2	2025
Development Support - MyNavy HR S&T Transformation: MN HR S&T Trans 4	4	2025	4	2025
Development Support - MyNavy HR S&T Transformation: MM HR S&T Trans 5	1	2026	1	2026
Development Support - NLEC/NETC Tools (DRO EEA): DRO EEA 1	1	2023	1	2023
Development Support - NLEC/NETC Tools (DRO EEA): DRO EEA 2	2	2023	2	2023
Development Support - NLEC/NETC Tools (DRO EEA): DRO EEA 3	4	2023	4	2023
Development Support - NLEC/NETC Tools (DRO EEA): DRO EEA 4	1	2024	1	2024
Development Support - NLEC/NETC Tools (DRO EEA): DRO EEA 5	2	2024	2	2024
Development Support - NLEC/NETC Tools (DRO EEA): DRO EEA 6	4	2024	4	2024
Development Support - NLEC/NETC Tools (DRO EEA): DRO EEA 7	2	2025	2	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604703N / Personnel, Trng, Sim, & Human Factors		Project (Number/Name) 1822 / Manpower Pers & Human Fact System	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 1		1	2022	1	2022
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 2		3	2022	3	2022
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 3		4	2022	4	2022
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 4		2	2023	2	2023
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 5		1	2024	1	2024
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 6		2	2024	2	2024
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 7		1	2025	1	2025
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 8		3	2025	3	2025
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 9		4	2025	4	2025
Development Support - AI/ML Innovation (e.g MNL and Transition Costs): MNL and Trans Cost 10		2	2026	2	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604727N / JNT Standoff Weapon Systems							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	942.761	0.000	0.758	1.964	-	1.964	1.815	1.515	1.516	1.546	13.896	965.771
2068: Joint Standoff Weapon (JSOW)	942.761	0.000	0.758	1.964	-	1.964	1.815	1.515	1.516	1.546	13.896	965.771

**A. Mission Description and Budget Item Justification**

The Joint Standoff Weapon (JSOW) is an air-to-ground weapon designed to attack a variety of targets during day, night, and adverse weather conditions. JSOW enhances aircraft survivability by providing the capability for launch aircraft to standoff outside the range of most target area surface-to-air threat systems. The JSOW launch-and-leave capability will allow several target kills per aircraft sortie. The JSOW program first developed a baseline weapon for use against fixed area targets. JSOW is a Navy led joint Navy/Air Force program. JSOW utilizes a "common truck" for both AGM-154A and AGM-154C variants. Through adherence to international standards for weapons interfaces, weight, and dimension considerations, JSOW is compatible with Air Force and North Atlantic Treaty Organization aircraft.

The JSOW Unitary (AGM-154C-1) variant includes a Network Enabled Weapon moving maritime target capability. The AGM-154C-1 capability enables the weapon to be integrated with the network and attack sea moving maritime targets via real-time pre-and post-launch targeting updates. JSOW will continue to conduct analysis and development of solutions to system integration challenges, and continual enhancement of warfighter effectiveness in the employment of the JSOW weapon system. The FY 2019 funding included the integration of new functionality into the joint mission planning systems and precision guided munitions planning system. JSOW C-1 Initial Operational Capability was achieved in June 2016. JSOW C-1 Full Operational Capability was achieved in August 2017.

JSOW development provides continuing upgrades to mission planning software to maintain relevance.

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604727N / JNT Standoff Weapon Systems			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.000	0.758	1.961	-	1.961
Current President's Budget	0.000	0.758	1.964	-	1.964
Total Adjustments	0.000	0.000	0.003	-	0.003
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	0.003	-	0.003
<b>Change Summary Explanation</b>					
FY 2024 increased by \$0.003M from the previous President's Budget Submission due to various rate and miscellaneous adjustments.					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604727N / JNT Standoff Weapon Systems				Project (Number/Name) 2068 / Joint Standoff Weapon (JSOW)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2068: Joint Standoff Weapon (JSOW)	942.761	0.000	0.758	1.964	-	1.964	1.815	1.515	1.516	1.546	13.896	965.771
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Joint Standoff Weapon (JSOW) is an air-to-ground weapon designed to attack a variety of targets during day, night, and adverse weather conditions. JSOW enhances aircraft survivability by providing the capability for launch aircraft to standoff outside the range of most target area surface-to-air threat systems. The JSOW launch-and-leave capability will allow several target kills per aircraft sortie. The JSOW program first developed a baseline weapon for use against fixed area targets. JSOW is a Navy led joint Navy/Air Force program. JSOW utilizes a "common truck" for both AGM-154A and AGM-154C variants. Through adherence to international standards for weapons interfaces, weight, and dimension considerations, JSOW is compatible with Air Force and North Atlantic Treaty Organization aircraft.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> JSOW Mission Planning Systems	0.000	0.758	1.964	0.000	1.964
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> JSOW program development efforts include new mission planning functionality required for Network Enabled Weapon (NEW) moving target capability for the JSOW-C-1.					
<b>FY 2023 Plans:</b> FY 2023 re-establishes funding to continue efforts to migrate JSOW mission planning software from the contractor owned Common Weapon Planning Environment (CWPE) to the Government owned Precision Guidance Mission Planning System (PGMPS) common component and perform required upgrades to ensure continued compatibility with test range infrastructure for future platform integration.					
<b>FY 2024 Base Plans:</b> FY 2024 continues efforts to migrate JSOW mission planning software from the contractor owned Common Weapon Planning Environment (CWPE) to the Government owned Precision Guidance Mission Planning System (PGMPS) common component and perform required upgrades to ensure continued compatibility with test range infrastructure for future platform integration. Additionally, development work will be required to support the transition from Joint Mission Planning System (JMPS) to Next Generation Naval Mission Planning System (NGNMPS).					
<b>FY 2024 OCO Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604727N / JNT Standoff Weapon Systems		<b>Project (Number/Name)</b> 2068 / Joint Standoff Weapon (JSOW)		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A						
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> The increase is due to the transition to Next Generation Navy Mission Planning System NGNMPS from Joint Mission Planning System JMPS. NOMS/NGNMPS requires development work that begins in FY 2023 and ramps up in FY 2024 to support this transition.						
<b>Accomplishments/Planned Programs Subtotals</b>		0.000	0.758	1.964	0.000	1.964
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
JSOW C-1 Initial Operational Capability was achieved in June 2016. JSOW C-1 Full Operational Capability was achieved in August 2017. The program focus has transitioned to sustainment with limited investment in mandated upgrades to communications equipment and a continuing upgrade effort for mission planning software.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604727N / JNT Standoff Weapon Syst ems				Project (Number/Name) 2068 / Joint Standoff Weapon (JSOW)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JSOW Prior Year Prod Dev no longer funded in the FYDP	SS/CPIF	Various : Various	803.876	0.000		0.000		0.000		-		0.000	0.000	803.876	803.876
JSOW C-1 Communications Software updates	SS/CPFF	Raytheon Missile Systems : Tucson, AZ	20.166	0.000		0.000		0.000		-		0.000	0.000	20.166	20.166
JSOW Crypto Modernization	SS/CPFF	Rockwell Collins : Cedar Rapids, IA	9.495	0.000		0.000		0.000		-		0.000	0.000	9.495	9.495
JSOW Crypto Modernization	TBD	various : various	3.431	0.000		0.000		0.000		-		0.000	0.000	3.431	3.431
JSOW Software Development	SS/CPFF	Various : Various	8.248	0.000		0.408	Mar 2023	0.000		-		0.000	0.000	8.656	8.656
JSOW Mission Planning	SS/CPFF	Raytheon Missile Systems : Tucson, AZ	0.000	0.000		0.000		1.549	Mar 2024	-		1.549	0.000	1.549	1.549
Subtotal			845.216	0.000		0.408		1.549		-		1.549	0.000	847.173	N/A
Remarks															
FY 2024 increase due to JSOW development efforts to upgrade and migrate mission planning software.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JSOW Government Support	WR	NAWCWD : China Lake, CA	6.481	0.000		0.100	Dec 2022	0.165	Nov 2023	-		0.165	0.000	6.746	-
JSOW Support	WR	Various : Various	10.195	0.000		0.000		0.000		-		0.000	0.000	10.195	-
JSOW ER Government Support	WR	NAWCWD : China Lake, CA	0.220	0.000		0.000		0.000		-		0.000	0.000	0.220	-
JSOW ER TACNET	SS/CPIF	Wyle Laboratories : Huntsville, AL	0.020	0.000		0.000		0.000		-		0.000	0.000	0.020	0.020

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604727N / JNT Standoff Weapon Syst ems				Project (Number/Name) 2068 / Joint Standoff Weapon (JSOW)					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JSOW Mission Planning Fleet Training Support	SS/CPFF	Raytheon Missile Systems : Tucson, AZ	0.000	0.000		0.250	Jun 2023	0.250	Jun 2024	-		0.250	0.000	0.500	0.500
Subtotal			16.916	0.000		0.350		0.415		-		0.415	0.000	17.681	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	54.920	0.000		0.000		0.000		-		0.000	0.000	54.920	-
Subtotal			54.920	0.000		0.000		0.000		-		0.000	0.000	54.920	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JSOW Prior year Mgmt no longer funded in the FYDP	Various	Various : Various	25.504	0.000		0.000		0.000		-		0.000	0.000	25.504	-
JSOW ER Government Support	WR	NAWCAD : Patuxent River, MD	0.200	0.000		0.000		0.000		-		0.000	0.000	0.200	-
JSOW ER Travel	Various	NAVAIR : Patuxent River, MD	0.005	0.000		0.000		0.000		-		0.000	0.000	0.005	-
Subtotal			25.709	0.000		0.000		0.000		-		0.000	0.000	25.709	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			942.761	0.000		0.758		1.964		-		1.964	0.000	945.483	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy				Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604727N / JNT Standoff Weapon Systems		Project (Number/Name) 2068 / Joint Standoff Weapon (JSOW)			

Joint Standoff Weapon	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquistion Milestones																												
	JSOW C-1 Development																											
	Mission Planning Updates																											
	Crypto Mod Efforts																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604727N / JNT Standoff Weapon Systems	Project (Number/Name) 2068 / Joint Standoff Weapon (JSOW)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Joint Standoff Weapon				
Acquisition Milestones: JSOW C-1 Development	1	2022	4	2028
Acquisition Milestones: Mission Planning Updates	1	2022	4	2028
Acquisition Milestones: Cyrpto Modernization Efforts	1	2022	4	2022

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntrl)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	801.789	139.580	156.426	158.426	-	158.426	154.086	149.747	146.627	148.015	Continuing	Continuing
2178: QRCC	732.601	124.514	142.896	146.699	-	146.699	137.224	134.525	133.525	135.062	Continuing	Continuing
3172: Joint Non-Lethal Weapons	25.589	3.083	3.798	3.580	-	3.580	3.223	3.283	3.347	3.417	Continuing	Continuing
3358: SSDS Training Improvement Program	43.599	11.983	9.732	8.147	-	8.147	13.639	11.939	9.755	9.536	Continuing	Continuing

## A. Mission Description and Budget Item Justification

### A. Mission Description and Budget Item Justification

This program element provides Aircraft Carriers and Amphibious Class ships Ship Self Defense System (SSDS) MK 2 Combat System upgrades and integrates new equipment and systems to pace the threat and capture advances in technology. Examples of captured advanced technologies are: advanced information assurance and cyber defense; Fire Control Loop Improvement Project (FCLIP); Identification Friend or Foe (IFF) Mode 5 to include Far-Term Interoperability Improvement Project (FTIIP); and other command and control systems, advanced sensors, and weapon integration, all of which require corresponding SSDS MK 2 changes. The program element also includes the SSDS integrated Combat System project for embedded shipboard training, Common Aviation Command and Control System Afloat (CAC2S Afloat) integration, and the Non-Lethal weapons project in support of anti- terrorism/force protection missions.

QRCC project (PU 2178) - implements an evolutionary acquisition of improved ship self-defense capabilities against Anti-Ship Cruise Missiles (ASCMs) and improved multi-warfare capabilities for Aircraft carriers and Amphibious Class ships. SSDS MK 2 integrates a diverse set of fire control loop sensors and weapons (SPY-6(V)2, SPY-6(V)3, SLQ-32(V)6 SEWIP, RAM Block 2A/2B, ESSM Block 2, CIWS) and C4I systems (CANES) for each ship class (CVN68/78, LHA6, LHD1, LPD17, and LSD 41/49). SSDS MK 2 provides combat direction, and joint interoperability via the Cooperative Engagement Capability (CEC) Increment 1 and 2 and Tactical Digital Information Link (TADIL)-J/Link 16. System design emphasizes commonality and a single source software library that are major mechanisms for cost control and avoidances. SSDS uses a physically distributed, open system architecture computer network consisting of common hardware such as the Common Processor System (CPS), the Common Display System (CDS) and the common Computing Infrastructure configuration. SSDS MK 2 integrates new combat system war-fighting capabilities and improvements, as well as DoD and Navy-mandated enhanced cybersecurity capabilities via incremental capability packages and computing infrastructure (previously Technology Insertion (TI)) improvement deliveries. Capabilities beyond SSDS Build 12 will begin to transition to development to by third party software developers and a common Software construct. PU 2178 efforts are divided into two major functional areas: SSDS Product Development/Combat Systems Integration, and Test and Evaluation/Certification.

Joint Non-Lethal Weapons (PU 3172) - provides a long range laser warning and dazzle system, maritime vessel stopper (MVS) system, and combined effects (light, laser, and sound) system for use in the maritime environment. Optical warning and distraction has been identified by the services as a possible technology solution to mitigate and/or address several known joint nonlethal capability gaps.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604755N I Ship Self Def (Detect & Cntrl)				
Visual Augmentation Systems (VAS) supports research, development, and testing of material solutions for VAS capability gaps encountered during missions in combat zones. Expeditionary force lacks the ability to detect and recognize potential threat craft at the maximum possible range and at the earliest time in all-weather environments during day and night. In addition, the warfighter needs the ability to record both audio/video encounters and incidents for after action reporting						
SSDS Training Improvement Program (PU 3358) - provides enhancements and upgrades to the SSDS Total Ship Training Capability (TSTC) components within the combat system, combat system elements, Battle-Force Tactical Training (BFTT), and Advanced Training Domain (ATD), to address needs for increased training capability and functionality in conjunction with SSDS MK 2 capability improvements, IFF Mode 5 (to include FTIIP), Task Force Cyber Awakening (TFCA) Boundary Defense Capability (BDC), and Technical Insertion efforts under PU 2178 (QRCC). These enhancements will address current and future training requirements by implementing new functionality to enable the individual warfighter, through distributed battle group events, to engage in more complex training scenarios to support fleet required training certification events. Capability Development and integration are related to Self Defense, Underwater, Surface, and other warfare areas. Capability enhancements and upgrades include development of re-useable common components that can be leveraged by other combat systems, and/or integration of re-usable common components developed by the TSTC/BFTT Program and AEGIS Advanced Training Domain (ATD)/Total Ship Training Capability (TSTC) projects to meet AEGIS combat system training requirements. TSTC continues to integrate and update, as new tactical capabilities are being introduced, to enable crew operator proficiency training for basic and sustainment level training events, through distributed strike group certification, fleet synthetic training (FST) events, and including COMPTUEX FST at sea integration into a Live, Virtual and Constructive (LVC) environment. Continued development is required to integrate new capabilities and interfaces to provide training for SSDS combat system capability upgrades, and to address the Fleet's LVC Fleet Training Wholeness initiative. Additionally, modernization is needed to support the DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		142.595	159.426	159.410	-	159.410
Current President's Budget		139.580	156.426	158.426	-	158.426
Total Adjustments		-3.015	-3.000	-0.984	-	-0.984
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-3.000			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-3.015	0.000			
• Program Adjustments		0.000	0.000	-1.709	-	-1.709
• Rate/Misc Adjustments		0.000	0.000	0.725	-	0.725
Change Summary Explanation						
- FY 2023 budget was reduced by -3.000M for Historical Under Execution (PU2178, -2.330M / PU3358, -0.472M / PU3172, -0.198M)						



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604755N I Ship Self Def (Detect & Cntrl)	
<p>FY2023 to FY2024 Funding Changes by PU:</p> <p>PU 2178: Increase of +\$3.803M from FY2023 to FY2024 provides for increased efforts associated with transition to Common Computing infrastructure and Common Software construct development efforts and slight increase in required testing in FY2024. As well as the CAC2S Afloat design, development, integration, test, and certification efforts for the Shipboard C5I efforts.</p> <p>PU 3172: Funding decreased from FY2023 to FY2024 by -\$0.218M due to ending vessel drogue effort as possible interim solution.</p> <p>PU 3358: Decrease of -\$1.585M from FY 2023 to FY 2024 is due due to completion of SPQ-9B integration.</p> <p>R-4 PROGRAM SCHEDULE CHANGES:</p> <p>The FY 2024 PU 2178 and PU 3358 Program Schedule R4 changes reflect the completion of SSDS Build Testing for SSDS MK2 Build 12-CP2, Computing Infrastructure, EPIC Development, SSDS MK2 IPR 6-8, PI 5-8, SSDS MK2 Build Test CP2 FSIT &amp; FQT, Cyber Security Testing CTT #2, Vul #1, and SSDS MK2 IPR 9.</p> <p>The FY 2024 PU 3172 program schedule change reflects the determination that Maritime Vessel Stopping Occlusion Technology (MVSOT) interim solution of Drogue systems was deemed insufficient to meet requirements. The current schedule shows the intent to release an RFP for the Production and Assembly of Synthetic Slime (PASS) to meet MVS requirement.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)				Project (Number/Name) 2178 / QRCC			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2178: QRCC	732.601	124.514	142.896	146.699	-	146.699	137.224	134.525	133.525	135.062	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

### A. Mission Description and Budget Item Justification

The QRCC project (PU 2178) implements an evolutionary acquisition of improved ship self-defense capabilities against Anti-Ship Cruise Missiles (ASCMs), and improved multi-warfare capabilities, for Aircraft Carriers and Amphibious Class ships. SSDS MK 2 integrates a diverse set of fire control loop sensors and weapons and C4I systems for each ship class (CVN68/78, LHA6, LHD1, LPD17, and LSD41/49). SSDS MK 2 provides combat direction, and joint interoperability via the Cooperative Engagement Capability (CEC) and Tactical Digital Information Link (TADIL)-J/Link 16. System design emphasizes commonality and a single source software library that are major mechanisms for cost control and avoidances. SSDS uses a physically distributed, open system architecture computer network consisting of common hardware such as the CPS/CDS and common Computing Infrastructure. SSDS MK 2 integrates new combat system war-fighting capabilities and improvements via incremental capability packages and computing infrastructure (previously Technology Insertion) improvement deliveries. PU 2178 efforts are divided into two major functional areas: SSDS Product Development/Combat Systems Integration, and Test and Evaluation/Certification.

SSDS Product Development encompasses systems engineering efforts, technology and capability insertion/integration, and cyber-security, including the development and integration of SSDS Build 10 with the required Technology Insertion TI12/12H computing and display configuration and the development and integration of SSDS Build 12 with the required TI16 computing and display configuration. SSDS Product Development will provide warfighter upgrades including implementation of common software components for System Track Management; integration of CPS and CDS; expansion of SSDS MK 2 Local Area Network (LAN) to a Combat System LAN; integration of new Combat System/C4I elements (SPY-6(V)2, SPY-6(V)3, SLQ-32(V)6 SEWIP, RAM Block 2A/2B, ESSM Block 2, CIWS, and CANES); implementation of shared, inheritable CS-level cybersecurity capabilities and Total Ship Training Capability. Capabilities beyond SSDS Build 12 will begin to transition to development by third party software developers and a Common Software construct.

SSDS Build 10 is fielded on CVN 78, CVN 72, LHD 2, LSD 46 and LHD 6. To improve efficiency and reduce SW build proliferation, the SSDS design is migrating an initial release of Build 12 with Advanced Training Domain capability to the TI-16 hardware configuration for initial installation on the CVN 73. SSDS Build 12 development will continue with additional releases to implement SSDS improvements to integrate the SPY-6 variants, ESSM Block 2, SEWIP Softkill Coordination Subsystem (SKCS) and Global Positioning System (GPS) based Positioning, Navigation, and Timing Service (GPNTS) and includes system engineering, critical experiments, software development, operating environment, cyber-security software, hardware/software integration, factory qualification testing, land-based engineering testing, system/software Test, Analyze, and Fix (TAAF) effort in support of CS, logistics products and ashore training course development. FY 2023/2024 includes continuing ongoing transition to production for the next SSDS hardware configuration, establishing a Common Computing Infrastructure allowing for targeted obsolescence and computing scaling upgrades vice wholesale modernization for ships so equipped. Capability development beyond SSDS Build 12 begins to explore utilization of a Common Software construct for development activities and scales with development capacity availability.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604755N / <i>Ship Self Def (Detect &amp; Cntr l)</i>	<b>Project (Number/Name)</b> 2178 / QRCC
<p>Cybersecurity, initiatives under PU 2178 will provide the SSDS MK 2 Combat System (CS) layered protect and detect functionality and will introduce critical response functionality to respond to and recover from cyber-attacks. SSDS Cybersecurity is a phased multi-year effort to define, develop, and integrate DoD and Navy mandated enterprise Combat System cybersecurity solutions. Continuing ongoing efforts in FY 2024, SSDS is collaborating to establish enterprise cyber accreditation processes for continuous and persistent certifications of hardware and software developed within a common software development environment. These solutions enhance the cybersecurity framework pillars of Identify, Protect, React, and Restore and expand force level cyber defense capabilities for the Carrier and Amphibious Fleet against actions by sophisticated adversaries.</p> <p>System engineering efforts for Joint Strike Fighter (JSF) F35B&amp;C integration Onboard LHA, LHD and CVN Class ships will provide improved F35 interoperability via Link 16 and integration of the Target Package Generator (TPG), a NAVAIR application. Systems engineering efforts will also provide improved land domain command and control for the Amphibious Readiness Group/Marine Air Ground Task Force (ARG/MAGTF) commanders and staffs through integration of USMC Common Aviation Command and Control System (CAC2S) program of record with LHA/LHD CEC and C5I systems. CAC2S Afloat also provides access to Variable Message Format (VMF) communications network and provides both Maritime and Land Situational Awareness for the ARG/MAGTF commanders and Ship Self Defense System operators.</p> <p>Combat System Integration under PU 2178 encompasses Combat System (CS) System-of-Systems modeling and simulation, system analysis/engineering (including Model-Based System Engineering), and system/software development for integration of sensors, weapons and C4I systems with SSDS MK 2 in Aircraft Carrier and Amphibious Class Ships. It also provides the system of systems engineering and development/integration of continued fire control loop improvements beyond FCLIP Phase 2 for tracking, weapon scheduling and engagement control with ESSM Block 2 missile; SEWIP Block 2 Soft kill Coordination Subsystem (SKCS), along with additional capability integration for GPNTS, and RAM Block 2B. (Integration of SEWIP Block 3 Electronic Attack has been deferred due to deferral of SEWIP Block 3 fielding to CVNs.)</p> <p>FTIIP is the second phase of the corrective action plan for the resolution of the strike group interoperability issues. FTIIP includes implementation of Tactical Data Link (TADIL) IFF Mode 5 identification capabilities, F/A-18 Digital Air Control (Phase 1) in support of F/A-18 and F-35 Joint Strike Fighter initial deployment, integration of the Shipboard Gridlock System/ Automatic Correlation (SGS/AC) system into the SSDS MK2 TI-16 configuration, and implementation of other high priority software.</p> <p>CAC2S Afloat-CEC integration provides capability to directly network with F-35, F/A-18 E/F, E/A-18G (and other joint tactical aircraft) and to downlink aircraft track and target data for enhanced command and control and force mission execution. It also provides a means to provide realtime aircraft mission status (weapons deployment, battle damage assessment, mission status, flight data and activity, communication channels, fuel state, time on station) and execution information at multiple locations onboard all networked ships and shore sites for force coordination of mission activity and coordination of remote fires for over the horizon (OTH) weapons. Ultimately, this integration effort will enable the ARG/MAGTF the ability to properly execute expeditionary advanced base operation and operate in a contested littoral environment. CAC2S Afloat integration encompasses system analysis/engineering, and system/software development for integration of multiple shipboard C5I system interfaces to include interfaces to GCCS-M, DCGS-N, JADOCS, TBMCS, SSDS, CEC, Minotaur FoS/MTC-A, and the OTH Missile Launching System (OTH MLS).</p> <p>Test and Evaluation/Certification under PU 2178 encompasses SSDS MK 2 Developmental Test and Evaluation (DT&amp;E) providing for comprehensive testing and certification of the integrated CS for the CVN 68, CVN 78, LPD 17, LHD1, LHA 6 and LSD41/49 ship classes. This includes Land-Based testing at Wallops Island and At-Sea testing for the lead ships for the new CS configurations, and Live Fire testing on the Self-Defense Test Ship (SDTS) and land-based and shipboard cyber testing.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)		Project (Number/Name) 2178 / QRCC		
The DT&E encompasses test planning, preparation, test conduct, data collection and analysis, and resolution and verification of deficiency corrections. The SSDS MK 2 T&E/Certification supports Combat System certification, the SSDS Test and Evaluation Master Plan (TEMP) execution and the Air Warfare Ship Self Defense CAPSTONE Enterprise TEMP execution which includes continuation of DT and FOT&E events for the CVN 78 SSDS MK 2 Mod 6C configuration with the DBR, SEWIP Block 2 ES, ESSM Block 1 with JUWL up-link, and RAM Block 2.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: SSDS MK2 Product Development/Combat Systems Integration		101.897	119.495	123.111	0.000	123.111
Articles:		-	-	-	-	-
FY 2023 Plans: For Build 12+ -Continue/start systems engineering efforts for the following capability insertions, to include requirements development/updates, use cases, trade studies, and conduct SETR events as required: -RAM Block 2B -Common Display Architecture -SSDS containerization and merge with the Integrated Combat System (ICS) -Integration of ICS applicable Battle Decision Aids  -Complete Design and Development of CAC2S Afloat with one way interface with SSDS  -Continue/Complete CAC2S Afloat design, development, integration, test, and certification efforts for the Shipboard C5I interfaces in support of Long Range Surface Warfare (LRSUW) including SSDS, OTH MLS/ NMESIS, IBS, Minotaur (two-way interface), DCGS-N, TBMCS-R, JADOCs Next, CEC and AN/PRC-158 direct VMF interface.  -Continue integration/lifecycle engineering efforts in support of the following capability insertions: + AN/SPY-6(V)2/3 integration, including CVN 74 + AN/SLQ-32(V)7 (Electronic Warfare Improvement) + GPNTS/GEDMS + CAC2S-SSDS-NSM  -Continue Build 12 Integrated Combat System integration engineering activities. -Provide required Build 12 CP 3 TAAF to support CVN 79, LHA 8, and LPD 29 and LHD 3 ship installation, test and certification events. -Conduct and complete CCI configuration transition to production activities.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntrl) I)		Project (Number/Name) 2178 / QRCC		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>-Continue designing, developing and implementing Cybersecurity capability improvements to secure the combat system enclave.</p> <p><b>FY 2024 Base Plans:</b> For Build 12+</p> <p>- Start/complete systems engineering, design, and qualification of common computing infrastructure components/designs supporting SSDS platforms.</p> <p>- Continue/start systems engineering efforts for the following capability insertions, to include requirements development/updates, use cases, trade studies and conduct SETR events as required:</p> <p>+ CEC Increment 2</p> <p>+ Electrical Optical/Infrared generic (EO/IR) sensor adapter/interface</p> <p>+ Netted Track Source adapter/interface</p> <p>+RAM Block 2B</p> <p>+Integration of applicable common software including Battle Decision Aids</p> <p>- Complete engineering efforts for the following capability insertions, to include requirements development/updates, use cases, trade studies and conduct SETR events as required:</p> <p>+Common Display Architecture</p> <p>-Continue/Complete CAC2S Afloat design, development, integration, test, and certification efforts for the Shipboard C5I interfaces in support of Long Range Surface Warfare (LRSUW) including OTH MLS/NMESIS, IBS, Minotaur/MTC-A (two-way interface), DCGS-N, TBMCS-R, JADOCS Next, CEC and AN/PRC-158 direct VMF interface.</p> <p>-Continue integration/lifecycle engineering efforts in support of the following capability insertions:</p> <p>+ AN/SPY-6(V)2/3 integration, including CVN 74</p> <p>+ AN/SLQ-32(V)7 (Electronic Warfare Improvement)</p> <p>+ GPNTS/GEDMS</p> <p>+SSDS containerization</p> <p>-Continue Build 12 Integrated Combat System integration engineering activities.</p>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)		Project (Number/Name) 2178 / QRCC		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>-Provide required Build 12 CP3 and CP 4 TAAF to support CVN 79, CVN 74, LHA 8, LHD 3, LHD 4, LHD 5 and LPD 29, LPD 30, LPD 31 ship installation, test and certification events.</div> <div>-Continue designing, developing and implementing Cybersecurity capability improvements to secure the combat system enclave.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: The FY2023 to FY2024 increase (+3.616M) is due to increased efforts associated with transition to Common Computing infrastructure and Common Software construct development efforts. As well as the CAC2S Afloat design, development, integration, test, and certification efforts for the Shipboard C5I efforts. Continue integration/lifecycle engineering efforts in support of the following capability insertions. Continue Build 12 Integrated Combat System integration engineering activities, ship installation, test and certification events.</div>						
<div>Title: SSDS MK2 Development Test &amp; Evaluation</div> <div>Articles:</div> <div>FY 2023 Plans: -Complete Build 12 Capability Package 3 FSIT and conduct Capability Package 3/4 FQT -Conduct Build 12 Capability Package 3 Land Based Testing for CVN 71- SVR, PCP and CSCP. LHD 7 LBTs- CSITs . -Conduct Capability Package 3 Land Based Testing for LHA 8 configurations- SIEs, FSIT, CSIT LBT for LHA 3- CSIT. -Conduct Land Based Testing CP 4 for CVN 79- SIE, CSIT,LBDT -Conduct USS Secure Testing: Cooperative Vulnerability Identification event on CP3/4 -Continue Build 12 Cyber Table Top (CTT) for Capability Packages 3/4  - Complete Test and certification of CAC2S Afloat - SSDS one way interface</div> <div>For SSDS Build 10</div>		22.617 -	23.401 -	23.588 -	0.000 -	23.588 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy					<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5			<b>R-1 Program Element (Number/Name)</b> PE 0604755N / <i>Ship Self Def (Detect &amp; Cntr l)</i>		<b>Project (Number/Name)</b> 2178 / QRCC	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
			<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>
-Conduct USS Secure Testing: CVN78 Cyber OT: Cooperative Vulnerability Penetration Assessment (CVPA) and Adversarial Assessment (AA) at Wallops Island  <b><i>FY 2024 Base Plans:</i></b> Continue LBDT and begin Sea Based Developmental Test (SBDT) for Test and Evaluation Master Plan (TEIN 1910) in support of SSDS Baseline 12 Platforms. -Complete BL 12 CP 3 SIEs for CVN 79 and LHA 8 -Complete BL 12 CP 3 Factory System Integration Test (FSIT) and conduct Formal Qualification Test (FQT) -Conduct BL 12 CP 3 SBDTs for LPD 29, CVN 79 and LHA 8 -Complete BL 12 CP 4 SIE for LPD 30, LPD 31, CVN 74, CVN 79, LHD 4 and LHD 5. Cyber T&E in support of SSDS BL 12 Platform -Conduct CVI for BL 12 CP 3 & CP4 Continue testing for Objective Quality Evidence for SSDS BL 6, SSDS BL 9 and BL 10 CS configurations - Conduct BL 10 CSIT - Conduct BL 9 CSIT -Provide test execution support for CVN 78 Enterprise Lead Ship testing (TEMP 1714 Enterprise Test Event 10)  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> The FY2023 to FY2024 Increase (+0.187M) is due to slight increase in required testing in FY2024 Accomplishments/Planned Programs						
<b>Accomplishments/Planned Programs Subtotals</b>			124.514	142.896	146.699	0.000
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>Cost To Complete</b>
• OPN/ BLI 5231 (SSDS): SSDS	89.544	95.166	102.115	-	102.115	Continuing
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
D. Acquisition Strategy						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604755N / <i>Ship Self Def (Detect &amp; Cntrl)</i>	<b>Project (Number/Name)</b> 2178 / <i>QRCC</i>
<p>A sole source follow-on Cost Plus Incentive Fee (CPIF) Level of Effort (LOE) contract, N00024-14-C-5128, was awarded 18 December 2013 with a Period of Performance (PoP) from FY14-FY17 for the development, test, certification of SSDS MK2 (ACB 12/TI-12) for CVN78, CVN72, LHD2, and the software migration of ACB 12 to TI-12H/TI-16 for CVN 68, LHD 1, LPD 17 ship classes. This contract was extended to June 2020 and an additional extension to Q2 FY21 is planned to provide continued support of the SSDS MK 2 to complete the contract scope requirements for CVN and Amphibious ship Modernization ACB 12 on TI-12 and TI-12H (SSDS Software Build 10).</p> <p>The competitive contract for the SSDS Combat System Engineering Agent (CSEA)/Software Design Agent (SDA) was awarded in FY 2019 with a ten (10)-year PoP from FY19-FY29. This contract provides support for the Aircraft Carrier and Amphibious Ship Class SSDS Combat System (CS) element development of SSDS Software Build 12 and follow-on technology upgrades based on the evolution of the SSDS MK 2 Combat Systems Build 10 (ACB 12/TI-12/TI-12H). The current requirements include systems and software engineering support, development of engineering products to support combat system integration, configuration control, developmental test/operational test (DT/OT) support, training and logistics support, and field technical support for the SSDS ICS.</p> <p>For SSDS MK2 TI-12H/TI-16 hardware, the SSDS program uses competitive build-to-specification production contracts, and leverages common enterprise COTS products for computing, storage, display, network, conversion, and cyber security. SSDS Common Computing Infrastructure will utilize an Other Transaction Agreement vehicle to prototype and transition to production equipment for ship installations.</p>		



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr l)				Project (Number/Name) 2178 / QRCC					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PD - Build 12//TI-16 - SW Dev CSEA	C/CPIF	CSEA Contract : Moorestown, NJ	24.729	23.273	Dec 2021	21.535	Dec 2022	30.313	Dec 2023	-		30.313	0.000	99.850	-
PD - Build 12//TI-16 - SE Spt	C/CPFF	JHU/APL : Laurel, MD	3.882	3.250	Dec 2021	1.831	Dec 2022	2.302	Dec 2023	-		2.302	Continuing	Continuing	Continuing
PD - Build 12//TI-16/Trng Course/Dev	WR	NSWC PHD : Pt Hueneme, CA	2.032	0.450	Nov 2021	0.253	Nov 2022	0.318	Nov 2023	-		0.318	Continuing	Continuing	Continuing
PD - Build 12//TI-16/ Metrics/On Site spt	WR	NSWC Corona : Corona, CA	0.589	0.500	Nov 2021	0.282	Nov 2022	0.354	Nov 2023	-		0.354	Continuing	Continuing	Continuing
PD - Build 12//TI-16 - SE spt	WR	NSWC DD : Dahlgren, VA	4.632	4.000	Nov 2021	2.254	Nov 2022	2.834	Nov 2023	-		2.834	Continuing	Continuing	Continuing
PD - Build 12//TI-16-SE spt	C/CPFF	Gryphon : Washington, DC	1.450	1.250	Dec 2021	0.704	Nov 2022	0.885	Nov 2023	-		0.885	Continuing	Continuing	Continuing
PD - Cyber Resiliency / BDC REQT & ENG	SS/CPFF	JHU/APL : Laurel, MD	12.157	3.500	Nov 2021	1.972	Nov 2022	2.479	Nov 2023	-		2.479	Continuing	Continuing	Continuing
PD - Cyber Resiliency / BDC HW EDM	WR	CDSA DN : Dam Neck, VA	1.432	0.750	Oct 2021	0.423	Oct 2022	0.532	Oct 2023	-		0.532	Continuing	Continuing	Continuing
PD - Cyber Resiliency / BDC ILS	WR	NSWC PHD : Port Hueneme, CA	1.620	0.225	Oct 2021	0.127	Oct 2022	0.160	Oct 2023	-		0.160	Continuing	Continuing	Continuing
PD - Cyber Resiliency / BDC SEIT	C/CPIF	Gryphon/DELTA : Washington DC	2.632	1.000	Nov 2021	0.563	Nov 2022	0.708	Nov 2023	-		0.708	Continuing	Continuing	Continuing
PD - Cyber Resiliency / BDC CSEA	C/CPIF	CSEA Contract : Moorestown NJ	36.973	8.552	Dec 2021	4.817	Oct 2022	6.055	Oct 2023	-		6.055	Continuing	Continuing	Continuing
PD - Cyber Resiliency / BDC CSTK DEV'T	C/CPIF	Progeny Systems Corp : Manassas, VA	9.325	1.100	Oct 2021	0.620	Oct 2022	0.779	Oct 2023	-		0.779	Continuing	Continuing	Continuing
PD-Cyber Resiliency / BDC SE	WR	NSWC - DD : Dahlgren, VA	6.449	1.439	Oct 2021	0.811	Oct 2022	1.020	Oct 2023	-		1.020	Continuing	Continuing	Continuing
PD - TI-16TR/TI22 - HW Engineering	C/CPFF	Gryphon : Washington DC	2.207	1.575	Nov 2021	0.887	Nov 2022	1.115	Nov 2023	-		1.115	Continuing	Continuing	Continuing
PD - TI-16TR/TI22 -HW Engineering	WR	NSWC-DD : Dalhgren, VA	22.878	7.250	Oct 2021	4.084	Nov 2022	5.134	Nov 2023	-		5.134	Continuing	Continuing	Continuing
PD - HQ Travel	Various	PEO IWS : Washington DC	1.023	0.200	Dec 2021	0.113	Nov 2022	0.142	Nov 2023	-		0.142	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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R-1 Program Element (Number/Name)

PE 0604755N / Ship Self Def (Detect & Cntrl)  
/)

Project (Number/Name)

2178 / QRCC

## Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PD - F35B Integration / LHA / LHD	C/CPFF	JHU/APL : Laurel, MD	9.867	1.906	Nov 2021	1.074	Nov 2022	1.350	Nov 2023	-		1.350	Continuing	Continuing	Continuing
PD - F35B Integration / LHA / LHD	WR	NSWC DD : Dalhgren, VA	12.202	2.000	Oct 2021	1.821	Nov 2022	2.289	Nov 2023	-		2.289	Continuing	Continuing	Continuing
PD - F35B Integration / LHA / LHD	C/CPIF	SEI&T : Washington DC	4.196	0.400	Dec 2021	0.360	Nov 2022	0.453	Nov 2023	-		0.453	Continuing	Continuing	Continuing
PD - F35B/C - ICS Link 16 Integration	C/CPFF	JHU/APL : Laurel, MD	4.234	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
PD - F35B Integration / LHA / LHD	TBD	PEO LS : Quantico, VA	11.532	2.100	Dec 2021	1.905	Nov 2022	2.395	Nov 2023	-		2.395	Continuing	Continuing	Continuing
PD - F35B/C - ICS Link 16 Integration	WR	NSWC DD : Dalhgren, VA	4.122	1.250	Oct 2021	0.704	Nov 2022	0.885	Nov 2023	-		0.885	Continuing	Continuing	Continuing
PD - F35B Integration / LHA / LHD	C/CPIF	CSEA : Moorestown NJ	9.129	2.888	Oct 2021	1.627	Nov 2022	2.045	Nov 2023	-		2.045	Continuing	Continuing	Continuing
PD - F35B/C - ICS Link 16 Integration	C/CPIF	SEI&T : Washington DC	1.867	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
PD - F35B Integration / LHA / LHD	TBD	PEO C4I : San Diego, CA	3.435	1.250	Dec 2021	1.159	Nov 2022	1.457	Nov 2023	-		1.457	Continuing	Continuing	Continuing
PD - PM Prod Development	C/CPIF	various : various	45.623	3.300	Dec 2021	1.859	Nov 2022	2.337	Nov 2023	-		2.337	Continuing	Continuing	Continuing
CSI - Build 12 (Less SPY-6 Var) - SE	WR	NSWC DD : Dalhgren, VA	17.895	3.000	Oct 2021	1.690	Nov 2022	2.124	Nov 2023	-		2.124	Continuing	Continuing	Continuing
CSI - Build 12 (Less EASR) - SEI&T	C/CPFF	Gryphon : Washington DC	7.703	0.500	Dec 2021	0.282	Nov 2022	0.354	Nov 2023	-		0.354	Continuing	Continuing	Continuing
CSI - Build 12 (Less SPY-6 Var) - SE	SS/CPFF	JHU/APL : Laurel, MD	15.496	3.250	Nov 2021	1.830	Nov 2022	2.300	Nov 2023	-		2.300	Continuing	Continuing	Continuing
CSI - Build 12 (Less SPY-6 Var) - SE	C/CPIF	CSEA Contract : Moorestown NJ	19.687	4.358	Dec 2021	2.455	Nov 2022	3.086	Nov 2023	-		3.086	Continuing	Continuing	Continuing
CSI - FTIIP - SE	WR	NSWC-DD : Dahlgren, VA	10.074	1.500	Oct 2021	0.845	Nov 2022	1.062	Nov 2023	-		1.062	Continuing	Continuing	Continuing
CSI - FTIIP - SE	WR	CDSA DN : Dam Neck, VA	1.229	0.500	Oct 2021	0.282	Nov 2022	0.354	Nov 2023	-		0.354	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604755N / Ship Self Def (Detect & Cntr  
I)

## Project (Number/Name)

2178 / QRCC

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CSI - FTIIP - SE	WR	NSWC PHD : Port Hueneme, CA	1.696	1.000	Oct 2021	0.563	Nov 2022	0.708	Nov 2023	-		0.708	Continuing	Continuing	Continuing
CSI - FTIIP - SEI&T	C/CPFF	Gryphon : Washington DC	6.162	1.150	Dec 2021	1.049	Nov 2022	1.319	Nov 2023	-		1.319	Continuing	Continuing	Continuing
CSI - ICS SE - SEI&T	C/CPFF	Gryphon : Washington DC	9.498	1.250	Dec 2021	0.704	Nov 2022	0.885	Nov 2023	-		0.885	Continuing	Continuing	Continuing
CSI - ICS SE	SS/CPFF	JHU/APL : Laurel, MD	10.003	1.500	Nov 2021	0.845	Nov 2022	1.062	Nov 2023	-		1.062	Continuing	Continuing	Continuing
CSI - SPY-6 Var / ERS SE	C/CPIF	CSEA Contract : Moorestown NJ	15.256	5.295	Oct 2021	2.983	Nov 2022	3.750	Nov 2023	-		3.750	Continuing	Continuing	Continuing
CSI - SPY-6 Var / ERS SE	WR	NSWC PHD : Port Huneme, CA	1.285	0.339	Nov 2021	0.191	Nov 2022	0.241	Nov 2023	-		0.241	Continuing	Continuing	Continuing
CSI - SPY-6 Var / ESS SE	SS/CPFF	JHU/APL : Laurel, MD	7.922	0.568	Dec 2021	0.320	Nov 2022	0.403	Nov 2023	-		0.403	Continuing	Continuing	Continuing
CSI - SPY-6 Var / ESS SE	WR	NSWC DD : Dahlgren, VA	10.825	1.832	Nov 2021	1.032	Nov 2022	1.297	Nov 2023	-		1.297	Continuing	Continuing	Continuing
CSI - SPY-6 Var / ESS / SEI&T	C/CPFF	Gryphon : Washington DC	9.074	1.600	Dec 2021	0.901	Nov 2022	1.132	Nov 2023	-		1.132	0.000	12.707	-
PD - ACB12/TI-16/TI12H - Navy Link Cert/Cross- Domain Sprt	WR	SPAWAR : San Diego, CA	0.326	0.385	Oct 2021	0.351	Nov 2022	0.441	Nov 2023	-		0.441	0.000	1.503	-
PD - F35B/C - ICS LINK 16 Integration	C/CPFF	NAWC China Lake : Ridgecrest, CA	0.000	0.000		0.221	Nov 2022	0.278	Nov 2023	-		0.278	0.000	0.499	-
CSI - FTIIP - SE	WR	NAWC China Lake : Ridgecrest, CA	0.000	0.000		0.138	Oct 2022	0.173	Oct 2023	-		0.173	0.000	0.311	-
PD - ICS Development / SW	TBD	TBD Contractor : TBD	0.000	0.000		16.560	Nov 2022	10.969	Nov 2023	-		10.969	0.000	27.529	-
PD - ICS Development / SW	WR	NSWC DD : Dahlgren, VA	0.000	0.000		6.095	Nov 2022	4.038	Nov 2023	-		4.038	0.000	10.133	-
PD - ICS Development / SE Spt / MBSE	WR	NSWC DD : Dahlgren, VA	0.000	0.000		8.078	Nov 2022	5.351	Nov 2023	-		5.351	0.000	13.429	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr l)						Project (Number/Name) 2178 / QRCC					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
PD - ICS Development / SW Ecosystem	WR	NSWC DD : Dahlgren, VA	0.000	0.000		8.078	Nov 2022	5.351	Nov 2023	-		5.351	0.000	13.429	-		
PD - ICS Development & SE Spt	C/CPFF	TBD Contract : TBD	0.000	0.000		1.123	Nov 2022	0.744	Nov 2023	-		0.744	0.000	1.867	-		
PD-Cyber Resiliency (ICS) / SW	TBD	TBD Contract : TBD	0.000	0.000		5.520	Nov 2022	3.656	Nov 2023	-		3.656	0.000	9.176	-		
PD-Cyber Resiliency (ICS) / SW	WR	NSWC DD : Dahlgren, VA	0.000	0.000		0.000	Nov 2022	0.000		-		0.000	0.000	0.000	-		
PD-Cyber Resiliency / SE Spt / MBSE	WR	NSWC DD : Dahlgren, VA	0.000	0.000		2.787	Nov 2022	1.846	Nov 2023	-		1.846	0.000	4.633	-		
PD-Cyber Resiliency / SF Ecosystem	WR	NSWC DD : Dahlgren, VA	0.000	0.000		2.787	Nov 2022	1.846	Nov 2023	-		1.846	0.000	4.633	-		
Subtotal			384.348	101.435		119.495		123.111		-		123.111	Continuing	Continuing	N/A		
Remarks																	
The FY2023 to FY2024 increase (+3.616M) is due to increased efforts associated with transition to Common Computing infrastructure and Common Software construct development efforts. As well as the CAC2S Afloat design, development, integration, test, and certification efforts for the Shipboard C5I efforts																	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NSWC PHD : Port Hueneme, CA	128.046	4.025	Oct 2021	4.081	Nov 2022	4.114	Nov 2023	-		4.114	Continuing	Continuing	Continuing		
Developmental Test & Evaluation (DT&E)	WR	SCSC-WI : Wallops Is, VA	99.075	7.750	Nov 2021	7.858	Nov 2022	7.921	Nov 2023	-		7.921	Continuing	Continuing	Continuing		
Developmental Test & Evaluation (DT&E)	SS/CPFF	JHU/APL : Laurel, MD	36.639	1.550	Nov 2021	1.572	Nov 2022	1.585	Nov 2023	-		1.585	Continuing	Continuing	Continuing		
Operational Test & Evaluation (OT&E)	WR	NSWC Corona : Corona, CA	23.891	1.500	Oct 2021	1.521	Nov 2022	1.533	Nov 2023	-		1.533	Continuing	Continuing	Continuing		

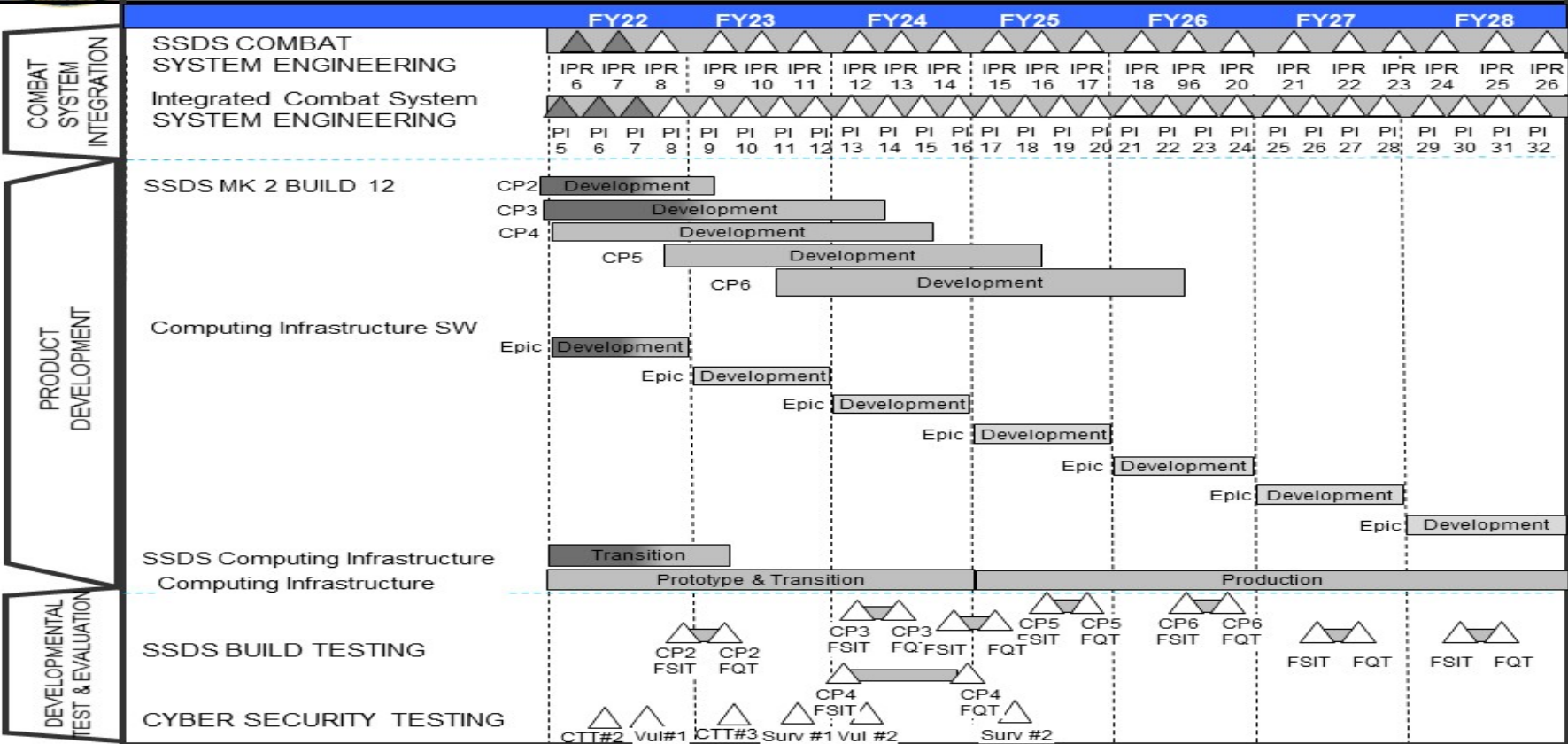
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)						Project (Number/Name) 2178 / QRCC			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC DD : Dahlgren, VA	48.182	4.504	Oct 2021	4.567	Nov 2022	4.603	Nov 2023	-		4.603	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : Norfolk, VA	9.788	0.750	Oct 2021	0.760	Nov 2022	0.766	Nov 2023	-		0.766	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPIF	SAIC : Reston, VA	1.450	1.500	Nov 2021	1.521	Nov 2022	1.533	Nov 2023	-		1.533	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	CSEA : Moorestown, NJ	0.000	1.500	Dec 2021	1.521	Dec 2022	1.533	Dec 2023	-		1.533	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	SS/CPIF	RSC (5128) : San Diego, CA	1.182	0.000		0.000		0.000		-		0.000	0.000	1.182	-
Subtotal			348.253	23.079		23.401		23.588		-		23.588	Continuing	Continuing	N/A
Remarks															
The FY2023 to FY2024 increase (+0.187M) is due to slight increase in required testing in FY2024 Accomplishments/Planned Programs															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			732.601	124.514		142.896		146.699		-		146.699	Continuing	Continuing	N/A
Remarks															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntrl) I)	Project (Number/Name) 2178 / QRCC



# Ship Self Defense System Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604755N / <i>Ship Self Def (Detect &amp; Cntrl)</i>	<b>Project (Number/Name)</b> 2178 / QRCC	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2178</b>				
SSDS MK 2 BUILD 12 - CP 3	1	2022	2	2024
SSDS MK 2 BUILD 12 - CP 4	1	2022	3	2024
COMPUTING INFRASTRUCTURE	1	2022	4	2028
SSDS MK 2 BUILD 12 - CP 5	3	2022	2	2025
* EPIC Development	1	2023	4	2023
SSDS MK 2 - IPR 10	3	2023	3	2023
SSDS MK 2 - IPR 11	4	2023	4	2023
PI 10	2	2023	2	2023
PI 11	3	2023	3	2023
PI 12	4	2023	4	2023
SSDS MK 2 BUILD 12 - CP 6	2	2023	2	2026
SSDS MK 2 BUILD TEST - CP 3 FSIT	1	2024	1	2024
SSDS MK 2 BUILD TEST - CP 3 FQT	3	2024	3	2024
SSDS MK 2 BUILD TEST - CP 4 FSIT	1	2024	1	2024
SSDS MK 2 BUILD TEST - CP 4 FQT	4	2024	4	2024
CYBER SECURITY TESTING - Surv # 1	4	2023	4	2023
# EPIC Development	1	2024	4	2024
SSDS MK 2 - IPR 12	1	2024	1	2024
SSDS MK 2 - IPR 13	3	2024	3	2024
SSDS MK 2 - IPR 14	4	2024	4	2024
PI 13	1	2024	1	2024

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604755N / Ship Self Def (Detect & Cntrl)  
/)

## Project (Number/Name)

2178 / QRCC

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
PI 14	2	2024	2	2024
PI 15	3	2024	3	2024
PI 16	4	2024	4	2024
SSDS MK 2 BUILD TEST - CP 5 FSIT	2	2025	2	2025
SSDS MK 2 BUILD TEST - CP 5 FQT	3	2025	3	2025
CYBER SECURITY TESTING - Vul # 2	2	2024	2	2024
CYBER SECURITY TETSTING - SURV # 2	2	2025	2	2025
EPIC Development *	1	2025	4	2025
SSDS MK 2 - IPR 15	1	2025	1	2025
SSDS MK 2 - IPR 16	3	2025	3	2025
SSDS MK 2 - IPR 17	4	2025	4	2025
PI 17	1	2025	1	2025
PI 18	2	2025	2	2025
PI 19	3	2025	3	2025
PI 20	4	2025	4	2025
SSDS MK 2 BUILD TEST - CP 6 FSIT	2	2026	2	2026
SSDS MK 2 BUILD TEST - CP 6 FQT	3	2026	3	2026
EPIC Development @	1	2026	4	2026
SSDS MK 2 - IPR 18	1	2026	1	2026
SSDS MK 2 - IPR 19	3	2026	3	2026
SSDS MK 2 - IPR 20	4	2026	4	2026
PI 21	1	2026	1	2026
PI 22	2	2026	2	2026
PI 23	3	2026	3	2026
PI 24	4	2026	4	2026



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604755N / Ship Self Def (Detect & Cntr  
I)

## Project (Number/Name)

2178 / QRCC

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSDS MK 2 BUILD TEST - FSIT	4	2024	4	2024
SSDS MK 2 BUILD TEST - FQT	1	2025	1	2025
+ EPIC Development	1	2027	4	2027
SSDS MK 2 - IPR 21	1	2027	1	2027
SSDS MK 2 - IPR 22	3	2027	3	2027
SSDS MK 2 - IPR 23	4	2027	4	2027
PI 25	1	2027	1	2027
PI 26	2	2027	2	2027
PI 27	3	2027	3	2027
PI 28	4	2027	4	2027
#SSDS MK 2 BUILD TEST -- FSIT	2	2027	2	2027
#SSDS MK 2 BUILD TEST -- FQT	3	2027	3	2027
#EPIC Development	1	2028	1	2028
SSDS MK 2 - IPR 24	1	2028	1	2028
SSDS MK 2 - IPR 25	3	2028	3	2028
SSDS MK 2 - IPR 26	4	2028	4	2028
PI 29	1	2028	1	2028
PI 30	2	2028	2	2028
PI 31	3	2028	3	2028
PI 32	4	2028	4	2028
#SSDS MK 2 BUILD TEST -- FSIT FY28	2	2028	2	2028
#SSDS MK 2 BUILD TEST -- FQT FY28	3	2028	3	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr l)				Project (Number/Name) 3172 / Joint Non-Lethal Weapons			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3172: Joint Non-Lethal Weapons	25.589	3.083	3.798	3.580	-	3.580	3.223	3.283	3.347	3.417	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Develop non-lethal weapon systems in support of anti-terrorism/force protection missions. Technologies include, but are not limited to: ocular interrupters, vessel propeller occlusion systems, and acoustic hailing devices. Current efforts are focused on the Long-Range Ocular Interrupter (LROI), Maritime Vessel Stopping (MVS) technologies, and Acoustic Hailing Devices (AHD).

The LROI is intended to provide the U.S. Navy with the capability to deliver a bright light producing a dazzling or glare effect on a closing target to warn and/or suppress potential threats through increasing levels of visual degradation. LROI will generate a non-lethal, eye safe laser that will provide warning and suppression effects. The extended range capability of LROI will effectively increase tactical decision-making time in support of escalation of force (EoF) tactics, techniques and procedures (TTP) across a broad range of military operations (ROMO). Further, the LROI will enhance Joint Force operations in determining the intent of a potential threat as early as possible.

The MVS technologies are systems designed to temporarily disable, slow, or stop waterborne vessels of varying degrees of size and different propulsion types in order to effectively execute escalation of force and intent determination procedures. The MVS technologies will provide the U.S. Navy with lightweight, compact, and reversible solution which will stop or slow marine platforms by occlusion of any type of marine propeller or propulsion.

Acoustic Hailing Devices project intelligible speech out to extended ranges. In addition to long-range projection of speech for warning or instructional purposes, the devices are also capable of transmitting loud tones that can distract or deter personnel from approaching U.S. positions or vessels.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Joint Non-Lethal Weapons Development	3.083	3.798	3.580	0.000	3.580
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> The NNLE program will prioritize the development and testing of synthetic materials for Maritime Vessel Stopping. Studies and analysis will be conducted on the ability to industrialize the manufacturing of synthetic materials to scale. Development of packaging and deployment methods for synthetic material will begin. Small scale testing will continue on propulsion systems and at-sea testing will occur, contingent upon sufficient					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604755N / <i>Ship Self Def (Detect &amp; Cntrl)</i>		<b>Project (Number/Name)</b> 3172 / <i>Joint Non-Lethal Weapons</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
synthetic material being available for testing. LROI system will be conducted to ensure efficacy of system ranging capability.  <b>FY 2024 Base Plans:</b> The NNLE program will prioritize the development and testing of synthetic materials for Maritime Vessel Stopping. Studies of the industrialization of synthetic slime manufacturing will be analyzed. Development of packaging and deployment methods for synthetic material will begin, including at-sea testing.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease in funding due to Maritime Vessel Stopping synthetic material concluding evaluation and testing of industrial capacity to produce synthetic material at scale required for at-sea testing and future fielding. Continuing efforts will focus on at-sea testing, development of packaging options, and assessment of deployment options.						
<b>Accomplishments/Planned Programs Subtotals</b>		3.083	3.798	3.580	0.000	3.580
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
The Navy Non-Lethal Effects (NNLE) Family of Systems (FoS) ACAT IVM Program of Record will focus on development efforts on the Maritime Vessel Stopping and technical data and logistics development for LROI.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)						Project (Number/Name) 3172 / Joint Non-Lethal Weapons					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
System Engineering NNLE	WR	NSWC Panama City : Panama City, FL	6.075	1.717	Nov 2021	2.326	Dec 2022	1.981	Dec 2023	-		1.981	Continuing	Continuing	Continuing		
System Engineering NNLE	WR	NSWC Dahlgren : Dahlgren, VA	17.841	0.300	Jan 2023	0.248	Dec 2022	0.448	Oct 2023	-		0.448	Continuing	Continuing	Continuing		
Subtotal			23.916	2.017		2.574		2.429		-		2.429	Continuing	Continuing	N/A		
Remarks FY23 to FY24 decrease -\$0.145M due to completion of vessel drogue and Long Range Ocular Interrupter systems engineering efforts.																	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NSWC Panama City : Panama City, FL	0.404	0.657	Nov 2021	0.624	Dec 2022	0.551	Dec 2023	-		0.551	0.000	2.236	-		
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-		
Subtotal			1.204	0.657		0.624		0.551		-		0.551	0.000	3.036	N/A		
Remarks Decrease of -\$0.073M due to adjusted cost estimate of Marine Vessel Stopping test and evaluation in FY24. Marine Vessel Stopping packaging and deployment method solution testing begins in FY24.																	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Management NNLE	WR	NSWC Panama City : Panama City, FL	0.125	0.409	Nov 2021	0.600	Dec 2022	0.600	Dec 2023	-		0.600	0.000	1.734	-		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr /)						Project (Number/Name) 3172 / Joint Non-Lethal Weapons					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Management VAS	WR	NSWC Crane : Crane, IN	0.344	0.000		0.000		0.000		-		0.000	0.000	0.344	-		
Subtotal			0.469	0.409		0.600		0.600		-		0.600	0.000	2.078	N/A		
Remarks																	
Long Range Ocular Interrupter delivery order 2 fielding occurs in FY24, sunset and disposition of existing fielded systems managed in parallel with fielding.																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			25.589	3.083		3.798		3.580		-		3.580	Continuing	Continuing	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)	Project (Number/Name) 3172 / Joint Non-Lethal Weapons	

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Proj 3172</b>																												
Acquisition Milestones: Navy Non-Lethal Effects: Maritime Vessel Stopping (MVS) Contract Award																												
System Development: Navy Non-Lethal Effects: System Development: NNLE: MVS Synthetic Material Manufacturing Analysis																												
System Development: Navy Non-Lethal Effects: Maritime Vessel Stopping (MVS) Issue Request for Proposal																												
System Development: Navy Non-Lethal Effects: Future Replacement Lazer Dazzling System																												
System Development: Navy Non-Lethal Effects: System Development : NNLE: MVS Deployment System Development																												
System Development: Navy Non-Lethal Effects: System Development: NNLE: MVS Synthetic Material delivery packaging																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604755N / <i>Ship Self Def (Detect &amp; Cntrl)</i>	<b>Project (Number/Name)</b> 3172 / <i>Joint Non-Lethal Weapons</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3172</b>				
Acquisition Milestones: Navy Non-Lethal Effects: Maritime Vessel Stopping (MVS) Contract Award	1	2027	1	2027
System Development: Navy Non-Lethal Effects: System Development: NNLE: MVS Synthetic Material Manufacturing Analysis	3	2023	4	2024
System Development: Navy Non-Lethal Effects: Maritime Vessel Stopping (MVS) Issue Request for Proposal	1	2026	4	2026
System Development: Navy Non-Lethal Effects: Future Replacement Lazer Dazzling System	1	2028	1	2028
System Development: Navy Non-Lethal Effects: System Development : NNLE: MVS Deployment System Development	4	2023	2	2025
System Development: Navy Non-Lethal Effects: System Development: NNLE: MVS Synthetic Material delivery packaging	2	2024	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr l)				Project (Number/Name) 3358 / SSDS Training Improvement Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3358: SSDS Training Improvement Program	43.599	11.983	9.732	8.147	-	8.147	13.639	11.939	9.755	9.536	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

SSDS Training Improvement Program provides enhancements and upgrades to the SSDS Total Ship Training Capability (TSTC) components within the combat system, combat system elements, Battle-Force Tactical Training (BFTT), and Advanced Training Domain (ATD) to address needs for increased training capability and functionality in conjunction with SSDS MK2 incremental capability packages, Far-Term Interoperability Improvement Project (FTIIP), Task Force Cyber Awakening (TFCA) Boundary Defense Capability (BDC), and Technical Insertion efforts under PU 2178 (QRCC). These enhancements will address current and future training requirements by implementing new functionality to enable the individual warfighter through distributed battle group events to engage in more complex training requirements to support fleet required training certification events. Capability Development and integration are related to Self Defense, Underwater, Surface, and other warfare areas. Capability enhancements and upgrades include development of re-useable common components that can be leveraged by SSDS MK2 combat systems, and/or integration of re-usable common components developed by the TSTC/BFTT Program and AEGIS Advanced Training Domain (ATD)/TSTC Total Ship Training Capability (TSTC) projects to meet AEGIS combat system training requirements. TSTC continues to integrate and update, as new tactical capabilities are being introduced, to enable crew operator proficiency training for basic and sustainment level training events, through distributed strike group certification fleet synthetic training (FST) events and including COMPTUEX FST at-Sea integration into Live, Virtual and Constructive (LVC) environment. Continued Development is required to integrate new capabilities and interfaces to provide training for AEGIS and SSDS combat system capability upgrades, and to address the Fleet's Live, Virtual and Constructive (LVC) Fleet Training Wholeness initiative. Additionally, modernization is needed to support the DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan. Ships Defense Simulator upgrade developments to provide new capability for Operator training.

The Advanced Training Domain (ATD) is being developed to combine BFTT and the AEGIS Combat Training System (ACTS) into a common system that integrates with AEGIS BL 9.2.2AF, and SSDS BL 12xAF. ATD is being hosted along with the AEGIS and SSDS combat system on TI-16 common processing and display hardware. ATD is being designed to be the core of the Total Ship Training Capability, and is projected to be more reliable, simpler to use, and architecturally extensible to meet interoperability and capability enhancement challenges in the future.

BFTT is being updated to maintain integration and capability enhancements developed for the Cooperative Engagement Capability (CEC), Surface Electronic Warfare Improvement Program (SEWIP), and the Carrier Tactical Support Center (CV-TSC), and SSDS Fire Control Loop Improvement Program.

TSTC provides realistic joint warfare training across the spectrum of armed conflict, realistic unit level team training in all warfare areas (e.g. NIFC-CA and BMD missions to support IAMD). TSTC provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organization, the Tactical Training Groups and C2F/C3F FST/LVC events.



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)	Project (Number/Name) 3358 / SSDS Training Improvement Program				
Continue develop and integrate MH-60R simulator to enable embedded shipboard training in support of basic and sustainment training, as well as establishes the pathway to support pier-side Fleet Synthetic Training (FST) events.						
Continue development and integration of Cooperative Engagement Capability (CEC) Enhanced Training (CET) to support basic and sustainment level training, as well as provide ability to distribute and establish CEC data link during pier-side fleet synthetic training exercises. CET is an enabler for proficiency training of NIFC-CA capability.						
Complete development of Identification Friend or Foe (IFF) simulator to enable training of Modes 1, 2, 3A, 4, C, 5 and S on both AEGIS and SSDS ships. Capability will enable training of AEGIS and SSDS IFF MODE 5/S, and address Mode 4 Inoculation.						
Develop and integrate commensurate training improvements to SSDS ACB 20 for Enhanced Sea Sparrow Missile (ESSM) and Electronic Warfare (EW) tactical improvements.						
Integrate Navy Continuous Training Environment (NCTE) networking and cyber security upgrades to maintain authorization to participate in distributed shipboard training events.						
TSTC integrated on SSDS provides the capability to complete system and operational level testing of the combat system.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: SSDS Total Ship Training Capability		11.983	9.732	8.147	0.000	8.147
Articles:		-	-	-	-	-
FY 2023 Plans:						
-Complete LVC SPQ-9B sensor improvements for SSDS MK2, allowing for Real vs. Synthetic target discrimination at the sensor level.						
-Continue AN/SPS-73(V)18 and AN/SPS-48G with the Training Sensor Interface LVC sensor improvements for SSDS MK2, allowing for Real vs. Synthetic target discrimination at the sensor level. (Extended into FY24. Interface is dependent on tactical interface integration.)						
-Continue AN/SPY-6 training integration. (Extended into FY24. Interface is dependent on tactical interface integration.)						
-Continue integration of Advanced Training Domain (ATD) for SSDS BL 12.x. Continue integration with SSDS BL12 with TI12, TI12H, and TI16 when appropriate ICDs developed.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)		Project (Number/Name) 3358 / SSDS Training Improvement Program	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>-Continue integration and testing of Strike Group Cooperative Engagement Capability (CEC) Underway capability onto SSDS Combat Systems Baselines. (Extended into FY24. Interface is dependent on tactical interface integration.)</p> <p>-Complete integration, testing and certification for Identification Friend or Foe (IFF) simulation capability coordinating impacted Program Offices to enable training of Modes 1, 2, 3A, 4, C, 5 and S on both AEGIS and SSDS ships. Capability will enable training of AEGIS and SSDS IFF MODE 5/S, and address Mode 4 Inoculation.</p> <p>-Continue Anti-Submarine Warfare (ASW) Training improvements with CV-TSC FCR 5 to support multi-warfare integrated training on SSDS, including the MH-60R Simulator supporting dual-helo operations and integration with the electronic warfare system, SLQ-32(V)6. Support MH-60R Sim capability enhancements for AOEW when funded. (Extended into FY24. Interface is dependent on tactical interface integration.)</p> <p>-Test LINK 16 TADIL capability for training to allow simulated LINK 16 message transmission between the training domain to the SSDS combat system supporting Digital Air Control and particularly AOEW training simulation when funded.</p> <p>-Continue integration of ATD with the SLQ-32(V) 7 training capability. The introduction of SLQ-32(V) 7 on SSDS may defer the need for this capability.</p> <p>-Complete requirements for Phase 1 of PHALANX Close-In Weapon System (CIWS) simulation capability with SSDS Build 12.X. to include integration of the OASIS CIWS Simulator in support of Fire Control Loop Modernization (FCLM) in SSDS BL12 CP4.</p> <p>-Continue integration of upgrades to ATD to support training for RAM 2B and ESSM Blk 2 with SSDS. (Extended into FY24. Interface is dependent on tactical interface integration.)</p> <p><b>FY 2024 Base Plans:</b></p> <p>-Complete AN/SPS-73(V)18 and AN/SPS-48G with the Training Sensor Interface LVC sensor improvements for SSDS MK2, allowing for Real vs. Synthetic target discrimination at the sensor level.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)		Project (Number/Name) 3358 / SSDS Training Improvement Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
-Complete training integration with AN/SPY-6.						
-Continue integration of Advanced Training Domain (ATD) with SSDS BL12 with TI12, TI12H, and TI16.						
-Complete integration and testing of Strike Group Cooperative Engagement Capability (CEC) Underway capability onto SSDS Combat Systems Baselines.						
-Complete Anti-Submarine Warfare (ASW) Training improvements with CV-TSC FCR 5 to support multi-warfare integrated training on SSDS, including the MH-60R Simulator supporting dual-helo operations and integration with the electronic warfare system, SLQ-32(V)6. Support MH-60R Sim capability enhancements for AOEW when funded.						
-Continue Test LINK 16 TADIL capability for training to allow simulated LINK 16 message transmission between the training domain to the SSDS combat system supporting Digital Air Control and particularly AOEW training simulation.						
-Complete integration of ATD with the SLQ-32(V) 7 training capability.						
-Complete integration of upgrades to ATD to support training for RAM 2B and ESSM Blk 2 with SSDS.						
-Develop requirements and Concepts of Integration (COI) for potential future training capabilities for Joint Strike Fighter, Naval Strike Missile on SSDS, CAC2S, NightStalker, and CRDC/ARDC Defense capability.						
-Develop requirements and Concepts of Integration (COI) for potential future training capabilities for Joint Strike Fighter, Naval Strike Missile on SSDS, CAC2S, NightStalker, and CRDC/ARDC Defense capability.						
-Update training curriculum as new capability packages are developed.						
-Continue to update/deliver SSDS Tactical Virtualized Operator Trainer (VOT) as new capability packages are developed						
FY 2024 OCO Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntrl) I)				Project (Number/Name) 3358 / SSDS Training Improvement Program			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 \$1.585M decrease due to completion of SPQ-9B integration and \$2M reduction which rephrased funding to FY25 and FY26 delaying the Phase 2 of PHALANX Close-In Weapon System (CIWS) simulation capability with SSDS Build 12.X											
Accomplishments/Planned Programs Subtotals							11.983	9.732	8.147	0.000	8.147
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RDTEN/0204571N/1427: Surface Tactical Team Trainer (PU 1427)	30.322	13.721	33.057	-	33.057	56.108	43.786	25.779	24.878	Continuing	Continuing
• RDTEN/0604307N/3357: AEGIS Training Improv. Prog. (PU 3357)	6.932	6.379	8.187	-	8.187	11.105	10.009	7.688	7.484	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
For the SSDS MK2 software development, including the integration of TSTC software improvements and the TI-16 Open Architecture Computing Environment, the acquisition strategy identified for SSDS MK2 for QRCC Project (PU 2178) (R-2A exhibit) applies.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)				Project (Number/Name) 3358 / SSDS Training Improvement Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TSTC SME Plan & Prep	WR	NSWC CN : Corona, CA	1.137	0.916	Nov 2021	0.000		0.000		-		0.000	0.000	2.053	-
TSTC Sys Eng	WR	NSWC DD : Dahlgren, VA	3.883	1.793	Nov 2021	1.327	Nov 2022	1.058	Nov 2023	-		1.058	0.000	8.061	-
TSTC Sys Eng	WR	CDSA DN : Dam Neck, VA	2.286	0.000		0.000		0.000		-		0.000	0.000	2.286	-
TSTC Sys Eng / Integration	C/CPIF	Raytheon (4112) : Suffolk, VA	1.430	0.000		0.000		0.000		-		0.000	0.000	1.430	-
TSTC FTW FCLIP / CSEA	C/CPIF	CSEA contract : Moorestown NJ	7.432	3.262	Dec 2021	0.408	Dec 2022	0.326	Dec 2023	-		0.326	0.000	11.428	-
TSTC TDL Gateway	C/CPIF	SPAWAR PMW 150 : San Diego, CA	0.421	0.000		0.000		0.000		-		0.000	0.000	0.421	-
TSTC Sys Eng / PSEA	SS/CPIF	RSC (5128) : San Diego, CA	5.018	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
TSTC Sys Eng / MH-60R Training Capability	WR	Keyport (NUWC) : Keyport, RI	1.159	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
TSTC Planning Support	C/CPIF	TMB : Washington, DC	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
TSTC ATD	TBD	IWS 1.0 : Washington, DC	8.349	3.165	Dec 2021	2.449	Dec 2022	1.953	Dec 2023	-		1.953	0.000	15.916	-
TSTC ESSM BLK2/EW Upgrades	TBD	Various : Various	4.050	0.000		0.000		0.000		-		0.000	0.000	4.050	-
TSTC EW	TBD	IWS 2.0 : Washington, DC	1.206	0.000		0.000		0.000		-		0.000	0.000	1.206	-
TSTC NCTE	WR	Corona(NSWC) : Corona, CA	0.405	0.000		0.000		0.000		-		0.000	0.000	0.405	-
TSTC GWS	TBD	IWS 3.0 : Washington, DC	0.041	0.000		0.000		0.000		-		0.000	0.000	0.041	-
TSTC FTW SENSOR	TBD	PEO IWS 2.0 : Washington, DC	3.489	0.724	Dec 2021	0.000		0.000		-		0.000	0.000	4.213	-
TSTC FTW / STRIKE CEC	TBD	PEO IWS 6.0 : Washington, DC	2.004	1.640	Dec 2021	0.816	Dec 2022	0.650	Dec 2023	-		0.650	0.000	5.110	-

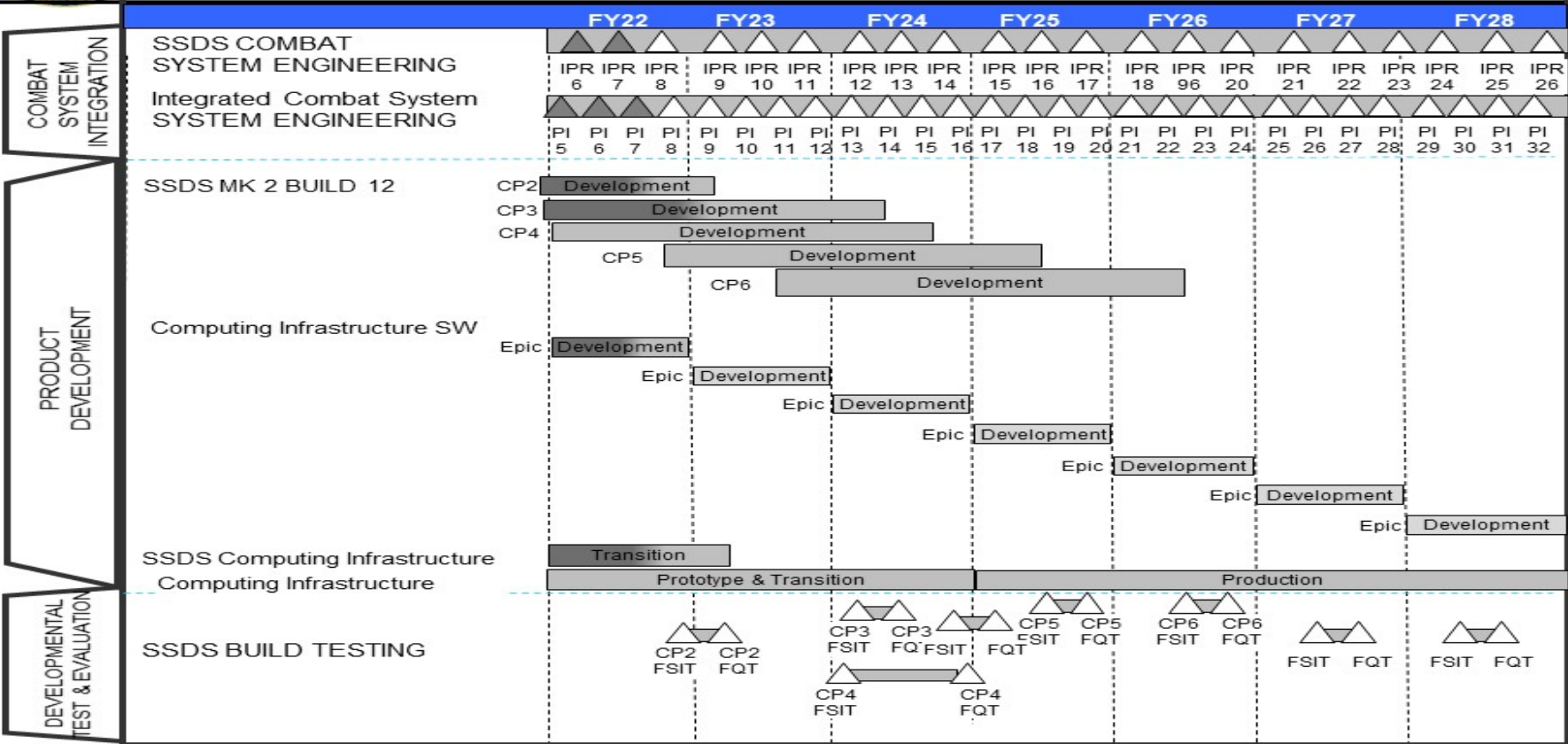
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntr I)				Project (Number/Name) 3358 / SSDS Training Improvement Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TSTC FTW ASW	TBD	PEO IWS 5.0 : Washington, DC	1.264	0.483	Dec 2021	0.612	Dec 2022	0.487	Dec 2023	-		0.487	0.000	2.846	-
TSTC Training	C/CPIF	CSEA Contract : Moorestown NJ	0.000	0.000	Dec 2021	2.691	Dec 2022	2.534	Dec 2023	-		2.534	0.000	5.225	-
TSTC Training	WR	NSWC PHD : Port Hueneme CA	0.000	0.000	Dec 2021	1.429	Dec 2022	1.139	Dec 2023	-		1.139	0.000	2.568	-
Subtotal			43.599	11.983		9.732		8.147		-		8.147	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			43.599	11.983		9.732		8.147		-		8.147	Continuing	Continuing	N/A
Remarks															

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604755N / Ship Self Def (Detect & Cntrl) I)	Project (Number/Name) 3358 / SSDS Training Improvement Program



Ship Self Defense System Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604755N / <i>Ship Self Def (Detect &amp; Cntrl)</i>	<b>Project (Number/Name)</b> 3358 / <i>SSDS Training Improvement Program</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3358</b>				
SSDS MK 2 BUILD 12 - CP 3	1	2022	2	2024
SSDS MK 2 BUILD 12 - CP 4	1	2022	3	2024
COMPUTING INFRASTRUCTURE	1	2022	4	2028
SSDS MK 2 BUILD 12 - CP 5	3	2022	2	2025
EPIC Development FY23	1	2023	4	2023
SSDS MK 2 - IPR 10	3	2023	3	2023
SSDS MK 2 - IPR 11	4	2023	4	2023
PI 10	2	2023	2	2023
PI 11	3	2023	3	2023
PI 12	4	2023	4	2023
SSDS MK 2 BUILD 12 - CP 6	2	2023	2	2026
SSDS MK 2 BUILD TEST - CP 3 FSIT	1	2024	1	2024
SSDS MK 2 BUILD TEST - CP 3 FQT	3	2024	3	2024
SSDS MK 2 BUILD TEST - CP 4 FSIT	1	2024	1	2024
SSDS MK 2 BUILD TEST - CP 4 FQT	4	2024	4	2024
EPIC Development FY24	1	2024	4	2024
SSDS MK 2 - IPR 12	1	2024	1	2024
SSDS MK 2 - IPR 13	3	2024	3	2024
SSDS MK 2 - IPR 14	4	2024	4	2024
PI 13	1	2024	1	2024
PI 14	2	2024	2	2024



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604755N / Ship Self Def (Detect &amp; Cntrl)

## Project (Number/Name)

3358 / SSDS Training Improvement Program

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
PI 15	3	2024	3	2024
PI 16	4	2024	4	2024
SSDS MK 2 BUILD TEST - CP 5 FSIT	2	2025	2	2025
SSDS MK 2 BUILD TEST - CP 5 FQT	3	2025	3	2025
EPIC Development FY25	1	2025	4	2025
SSDS MK 2 - IPR 15	1	2025	1	2025
SSDS MK 2 - IPR 16	3	2025	3	2025
SSDS MK 2 - IPR 17	4	2025	4	2025
PI 17	1	2025	1	2025
PI 18	2	2025	2	2025
PI 19	3	2025	3	2025
PI 20	4	2025	4	2025
SSDS MK 2 BUILD TEST - CP 6 FSIT	2	2026	2	2026
SSDS MK 2 BUILD TEST - CP 6 FQT	3	2026	3	2026
EPIC Development FY26	1	2026	4	2026
SSDS MK 2 - IPR 18	1	2026	1	2026
SSDS MK 2 - IPR 19	3	2026	3	2026
SSDS MK 2 - IPR 20	4	2026	4	2026
PI 21	1	2026	1	2026
PI 22	2	2026	2	2026
PI 23	3	2026	3	2026
PI 24	4	2026	4	2026
SSDS MK 2 BUILD TEST - FSIT	4	2024	4	2024
SSDS MK 2 BUILD TEST - FQT	1	2025	1	2025
EPIC Development FY27	1	2027	4	2027

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604755N / Ship Self Def (Detect &amp; Cntrl)

## Project (Number/Name)

3358 / SSDS Training Improvement Program

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSDS MK 2 - IPR 21	1	2027	1	2027
SSDS MK 2 - IPR 22	3	2027	3	2027
SSDS MK 2 - IPR 23	4	2027	4	2027
PI 25	1	2027	1	2027
PI 26	2	2027	2	2027
PI 27	3	2027	3	2027
PI 28	4	2027	4	2027
SSDS MK 2 BUILD TEST -- FSIT	2	2027	2	2027
SSDS MK 2 BUILD TEST -- FQT	3	2027	3	2027
#EPIC Development	1	2028	4	2028
SSDS MK 2 - IPR 24	1	2028	1	2028
SSDS MK 2 - IPR 25	3	2028	3	2028
SSDS MK 2 - IPR 26	4	2028	4	2028
PI 29	1	2028	1	2028
PI 30	2	2028	2	2028
PI 31	3	2028	3	2028
PI 32	4	2028	4	2028
#SSDS MK 2 BUILD TEST -- FSIT	2	2022	2	2028
#SSDS MK 2 BUILD TEST -- FQT	3	2028	3	2028

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0604756N / Ship Self Def (Engage: Hard Kill)
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,404.229	105.984	84.518	47.492	-	47.492	56.149	68.035	38.030	38.637	Continuing	Continuing
0167: 5in Rolling Airframe Missile	351.583	7.959	17.371	11.086	-	11.086	6.597	4.917	4.796	4.891	Continuing	Continuing
0173: NATO Sea Sparrow	995.785	65.070	38.869	31.206	-	31.206	49.552	63.118	33.234	33.746	Continuing	Continuing
2070: OTH Missile	56.861	10.766	8.278	5.200	-	5.200	0.000	0.000	0.000	0.000	0.000	81.105
9999: Congressional Adds	0.000	22.189	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.189

**A. Mission Description and Budget Item Justification**

This program element provides funding for the development of systems that fulfill a portion of the third phase of the Ship Self Defense: Engage Hard Kill. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming Anti-Ship Cruise Missiles (ASCM), as well as a Surface-to Surface Strike weapon system. Missile and system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (0173), Rolling Airframe Missile (RAM) (0167), Advanced Low Cost Munition Ordnance (ALaMO) (0243 and C772), Over-The-Horizon (OTH) missile (2070), and Phalanx Close-In Weapon System (CIWS) SeaRAM (9081). Missile improvements include improved kinematic performance plus advanced seeker and low elevation fusing/warhead capability improvements. CIWS System improvements include Technology Refresh for current and future fleet population. ALaMO (0243 and C772) qualifies a guided 57mm projectile with an active seeker for United States Navy (USN) use. ALaMO provides enhanced lethality against Fast In-shore Attack Craft (FIAC) when compared to existing 57mm ammunition.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	107.427	71.818	45.519	-	45.519
Current President's Budget	105.984	84.518	47.492	-	47.492
Total Adjustments	-1.443	12.700	1.973	-	1.973
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-7.300			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.443	0.000			
• Program Adjustments	0.000	0.000	4.698	-	4.698
• Rate/Misc Adjustments	0.000	0.000	-2.725	-	-2.725

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023	
<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		<b>R-1 Program Element (Number/Name)</b> PE 0604756N I Ship Self Def (Engage: Hard Kill)	
<b>Congressional Add Details (\$ in Millions, and Includes General Reductions)</b>		<b>FY 2022</b>	<b>FY 2023</b>
<b>Project:</b> 9999: Congressional Adds			
Congressional Add: ALaMO block 1 projectile		22.189	20.000
Congressional Add Subtotals for Project: 9999		22.189	20.000
Congressional Add Totals for all Projects		22.189	20.000
<b>Change Summary Explanation</b> Development efforts for Next Gen Launching systems will mostly be funded by FY 2023. Minor follow-on efforts for completion of system testing and delivery will be provided ion FY 2024. Development efforts for MK9 CWTI Transmitter Replacement will be ramping down by FY 2023 as well with transition to production and fielding.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)				Project (Number/Name) 0167 / 5in Rolling Airframe Missile			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0167: 5in Rolling Airframe Missile	351.583	7.959	17.371	11.086	-	11.086	6.597	4.917	4.796	4.891	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Rolling Airframe Missile (RAM) program is an international cooperative program with the government of the Federal Republic of Germany. The purpose of this program is to develop, test, and field a surface-to-air self-defense system consisting of both a missile launcher and dual mode, passive radio frequency/infrared seeker missiles. The RAM Block 2B missile defends against highly maneuverable Anti-Ship Cruise Missile (ASCM) threats and emerging complex raid attacks utilizing an advanced seeker and Missile-to-Missile Link (MML) while maintaining all the proven capabilities of previous RAM variants (Block 0/1/1A/2/2A): accurate terminal guidance, proven lethality, and post-launch fire and forget capability.

RAM FY 2024 through FY 2028 efforts will focus on integration efforts with the new Combat Systems baselines for Aircraft Carriers and Amphibious platforms (Ship Self Defense System (SSDS) Baseline 12 - RAM Integration) to include electromagnetic environmental effects (E3) testing to verify all RAM variants can be loaded and fired from SSDS platforms. Preliminary investigations to support RAM integration on Aegis platforms (Destroyers) will also be conducted. Additionally, efforts will correct issues found during RAM Block 2B development flight tests and include evolutionary agile software development that delivers critical missile software based capability packages to counter emerging threats such as hypersonic weapons.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Rolling Airframe Missile Block 2 Development and Test	7.959	17.371	11.086	0.000	11.086
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> In support of integration efforts, perform regression flight testing to verify RAM Block 2A and 2B missile hardware and software raid performance improvements in SSDS BL 12. Conduct electromagnetic environmental effects (E3) testing for all fielded RAM variants with new US Navy emitters such as AN/SPY-6 (EASR) and AN/SLQ-32(V)7 (SEWIP Block 3), which is a requirement for combat systems certification. Build virtual RAM models for integrated combat system end-to-end development which enables rapid missile and combat system software development, certification and deployment to counter new and emerging threats. Initiate evolutionary agile development efforts that deliver critical missile software based capability packages to counter emerging threats such as hypersonic weapons.					
<b>FY 2024 Base Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>		<b>Project (Number/Name)</b> 0167 / <i>5in Rolling Airframe Missile</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>In support of integration efforts, conclude regression flight testing analysis to verify RAM Block 2B missile hardware and software raid performance improvements in SSDS BL 12. Conduct electromagnetic environmental effects (E3) testing for all fielded RAM variants with new US Navy emitters such as AN/SPY-6 (EASR) and AN/SLQ-32(V)7 (SEWIP Block 3), which is a requirement for combat systems certification. Build virtual RAM models for integrated combat system end-to-end development which enables rapid missile and combat system software development, certification and deployment to counter new and emerging threats. Conduct preliminary investigations to support RAM integration on Aegis platforms. Continue evolutionary agile development efforts that deliver critical missile software-based capability packages to counter emerging threats such as hypersonic weapons.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY 2023 included funding for Block 2B flight testing. No funding for flight tests are included in FY 2024.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	7.959	17.371	11.086	0.000	11.086

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• WPN 2242: RAM	73.015	92.131	114.639	-	114.639	117.251	120.277	121.506	123.936	Continuing	Continuing
• OPN 5231: <i>Ship Missile Support Equipment</i>	7.025	7.053	7.188	-	7.188	7.339	7.511	7.669	7.822	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The RAM Program uses directed sole source contracts with Raytheon Missiles & Defense, Tucson, AZ.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)				Project (Number/Name) 0167 / 5in Rolling Airframe Missile					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 2 Upgrade	C/CPAF	Various : Various	154.650	0.000		0.000		0.000		-		0.000	0.000	154.650	-
Primary Hardware Dev/Blk 1	Various	Various : Various	10.081	0.000		0.000		0.000		-		0.000	0.000	10.081	-
FCLIP	WR	PHD : CA	0.777	0.000		0.000		0.000		-		0.000	0.000	0.777	-
FCLIP	SS/CPFF	AECOM : VA	1.226	0.000		0.000		0.000		-		0.000	0.000	1.226	-
Raid ECP	SS/CPFF	Raytheon : Tucson/ Louisville	77.366	2.000	Dec 2021	0.000		0.000		-		0.000	0.000	79.366	-
FCLIP	SS/CPFF	Raytheon : Tucson/ Louisville	40.563	0.000		0.000		0.000		-		0.000	0.000	40.563	-
Raid ECP	SS/CPFF	JHU/APL : MD	1.115	0.000		0.000		0.000		-		0.000	0.000	1.115	-
FCLIP	WR	China Lake : CA	8.735	0.000		0.000		0.000		-		0.000	0.000	8.735	-
Raid ECP	WR	China Lake : CA	4.306	0.000		0.000		0.000		-		0.000	0.000	4.306	-
FCLIP	SS/CPFF	JHU/APL : MD	0.692	0.000		0.000		0.000		-		0.000	0.000	0.692	-
Raid ECP	WR	PHD : CA	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
Raid ECP	SS/CPFF	AECOM : VA	1.960	0.000		0.000		0.000		-		0.000	0.000	1.960	-
FCLIP	WR	PT Mugu : CA	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
FCLIP	WR	NSWC DD : VA	0.844	0.000		0.000		0.000		-		0.000	0.000	0.844	-
Various	Various	Various : Various	10.334	0.000		0.000		0.000		-		0.000	0.000	10.334	-
2B Integration	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	0.927	Nov 2021	0.000		0.000		-		0.000	0.000	0.927	-
2B Integration	WR	China Lake : CA	0.000	0.638	Oct 2021	0.000		0.000		-		0.000	0.000	0.638	-
2B Integration	C/CPIF	Lockheed Martin : NJ	0.000	0.997	Dec 2022	0.000		0.000		-		0.000	0.000	0.997	-
2B Integration	WR	NSWC DD : VA	0.000	1.317	Oct 2021	0.000		0.000		-		0.000	0.000	1.317	-
2B P3I	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	2.080	Mar 2022	0.000		0.000		-		0.000	0.000	2.080	-
Block 2 Test Support	C/CPFF	Raytheon : Tucson	18.787	0.000		4.100	Oct 2022	0.000		-		0.000	0.000	22.887	-
Block 2 Test Support	WR	China Lake/PHD : CA	13.414	0.000		2.082	Dec 2022	0.000		-		0.000	0.000	15.496	-
RAM Evolutionary Agile	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	0.000		2.237	Oct 2022	2.674	Oct 2023	-		2.674	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)				Project (Number/Name) 0167 / 5in Rolling Airframe Missile					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RAM Evolutionary Agile	WR	China Lake : CA	0.000	0.000		0.680	Oct 2022	0.824	Nov 2023	-		0.824	Continuing	Continuing	Continuing
RAM Evolutionary Agile	SS/CPFF	Cydecor : VA	0.000	0.000		0.425	Oct 2022	0.505	Oct 2023	-		0.505	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	SS/CPFF	Raytheon : Tucson/ Louisville	0.000	0.000		3.392	Dec 2022	4.308	Oct 2023	-		4.308	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	C/CPIF	Lockheed Martin : NJ	0.000	0.000		2.140	Mar 2023	0.000		-		0.000	0.000	2.140	-
SSDS BL 12 - RAM Integration	WR	China Lake : CA	0.000	0.000		0.985	Dec 2022	1.916	Oct 2023	-		1.916	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	WR	NSWC DD : VA	0.000	0.000		0.975	Jan 2023	0.450	Oct 2023	-		0.450	Continuing	Continuing	Continuing
SSDS BL 12 - RAM Integration	SS/CPFF	Cydecor : VA	0.000	0.000		0.355	Oct 2022	0.409	Nov 2023	-		0.409	Continuing	Continuing	Continuing
Subtotal			344.925	7.959		17.371		11.086		-		11.086	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis	Various	Various : Various	1.810	0.000		0.000		0.000		-		0.000	0.000	1.810	-
Subtotal			1.810	0.000		0.000		0.000		-		0.000	0.000	1.810	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	China Lake : PHD, CA	4.701	0.000		0.000		0.000		-		0.000	0.000	4.701	-
Subtotal			4.701	0.000		0.000		0.000		-		0.000	0.000	4.701	N/A



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)						Project (Number/Name) 0167 / 5in Rolling Airframe Missile			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Defense Acquisition Workforce Development Fund	Various	various : various	0.147	0.000		0.000		0.000		-		0.000	0.000	0.147	-
Subtotal			0.147	0.000		0.000		0.000		-		0.000	0.000	0.147	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			351.583	7.959		17.371		11.086		-		11.086	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)						Project (Number/Name) 0167 / 5in Rolling Airframe Missile			

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 0167																												
Raid ECP: Raid ECP Test Events																												
2B: Evolutionary Agile Development																												
SSDS BL 12: RAM Integration																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)	Project (Number/Name) 0167 / 5in Rolling Airframe Missile

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0167				
Raid ECP: Raid ECP Test Events	1	2022	1	2024
2B: Evolutionary Agile Development	2	2022	4	2028
SSDS BL 12: RAM Integration	1	2022	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)				Project (Number/Name) 0173 / NATO Sea Sparrow			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0173: NATO Sea Sparrow	995.785	65.070	38.869	31.206	-	31.206	49.552	63.118	33.234	33.746	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

This project encompasses ten (10) primary efforts to enhance ship self-defense:

1. Evolved SEASPARROW Missile (ESSM) Blk 1 is a cooperative effort among nine (9) NATO SEASPARROW Nations and the U.S. to provide crucial battlespace defense and fire power against the fast, low altitude, highly maneuverable Anti-Ship Cruise Missile (ASCM) threat. Modifications were made to both the MK 41 Vertical Launch System (VLS) to fire from a single cell with 4 ESSM (QuadPack) and the NATO SEASPARROW Surface Missile System (NSSMS), fielding ESSM Blk 1 onboard CVN 68 (Aircraft Carrier), LHD 1 (Multipurpose Amphibious Assault Ship), LHA 7 (Multipurpose Amphibious Assault Ship), CG 47 (Guided Missile Cruiser), and DDG 51 (Guided Missile Destroyer) class ships. ESSM Blk 1 integration efforts continue to bring the capability to CVN 78 and DDG 1000.
2. Blk 2 Follow-on Test & Evaluation (FOT&E): The ESSM Blk 2 Milestone Decision Authority mandated that ESSM Blk 2 conduct FOT &E on Ship Self-Defense System (SSDS) platform and fully support DDG Flight III operational testing. There will be planning efforts to support US Combat Systems integration testing including but not limited to: Aegis Baseline 9 and 10 integration, SSDS integration, FFG platform integration testing as required. This includes support with appropriate ESSM Blk 2 Missile Simulator Unit (MSU) with operator support.
3. NATO SEASPARROW Technical Direction Agent (TDA): The MK 57 NATO SEASPARROW Surface Missile Systems (NSSMS) provides a rapid response, integrated, self-defense missile capability. The Technical Direction Agent (TDA) is tasked with providing systems engineering and technical support for the MK 9 Tracker Illuminator System (TIS), and MK 29 Guided Missile Launching System (GMLS). The Combat System (CS) TDA is tasked with providing an Analysis of Alternatives (AoA), in the form of studies, analysis, and evaluations of hardware and software improvements. This task encompasses requirements development, and assessment, artifact and document reviews, technical meetings, and test requirement development, participation in test and system integration events, and post test analysis. RDT&E funding is necessary to complete AoA activities and develop recommendations, based on data, for improvements to the MK 9 TIS and MK 29 GMLS.
4. ESSM Technology Roadmap & Studies: The ESSM Blk 2 Missile completed development in 2021, achieved IOC in December 2021 and transitioned to in-service. In order to achieve performance not realized during the execution of Engineering and Manufacturing Development (E&MD), pace the threat, and remain a viable weapon system, the missile and its supporting combat system components will require improvements. This effort will perform studies to identify technology candidates, find new manufacturing techniques, and determine applicability to the NATO SEASPARROW Project Office (NSPO) managed Combat System Elements for future hardware or software improvements to either the Consortium's combat systems or the missile, or both. RDT&E funding represented will develop and maintain an ESSM System roadmap and support specific studies to determine candidate combat system and/or missile performance and manufacturing efficiency improvements. Computer simulation updates will be needed to support the performance studies for future improvements.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>	<b>Project (Number/Name)</b> 0173 / <i>NATO Sea Sparrow</i>
<p>5. Other Development (Blk 2 Obsolescence and Redesign, CSTB and Digital Datalink): Test Bed is the end-to-end integration of Combat System (CS) element models using Higher Level Architecture (HLA) to help assess a ship's ability to defend itself. Test Bed is maximizing the use of tactical code-based models in conjunction with physics-based environmental models to represent at sea performance of ships and their combat systems. The goal is to develop a system of systems modeling for multiple use cases including System Development, System Integration, Developmental Test (DT) or Operational Test (OT) for a variety of ships and weapon systems. This effort is to integrate ESSM Block 2 Tactical Simulation (ETS) model into the Combat Systems Testbed and Enterprise Testbed. This effort also includes improvements needing to be made in ETS based on the studies exploring missile launcher and MK 9 Tracker-Illuminator System (TIS) redesign in order to respond to obsolescence issues affecting ESSM systems on all CVN, LHA, and LHD class ships.</p> <p>6. Evolved SEASPARROW Missile (ESSM) Blk 2 Software Upgrades: The ESSM Blk 2 Missile completed development in 2021, achieved IOC in December 2021 and transitioned to in-service. In order to pace the threat and remain a viable weapon, the missile requires software improvements. This effort will provide the performance updates and fixes to the ESSM Block 2 missile software. The software updates will be identified as a result of the Initial Operational Test and Evaluation (IOT&amp;E) phase and during Runs for the Record (RfR) that will be completed in support of IOC, from performance improvements studies, from identified software issues, during FOT &amp;E flight test results and as a result of new hardware and combat system changes. These changes will form the first opportunity to improve the baseline ESSM Block 2 missile, and are intended to represent an approximately annual software update employing agile software management principles, which will allow for correction of deficiencies identified through Initial Operational Test and Evaluation, and support the completion of Follow On Operational Test and Evaluation objectives.</p> <p>7. C-Band Telemetry Upgrade: Director Operational Test and Evaluation (DOT&amp;E) directed operational testing in Aegis Capability Baseline (ACB)-20 requires multiple missiles in flight simultaneously to assess stream raids by threat systems. Current SM-6 and Evolved SEASPARROW Missile (ESSM) Block 2 Telemeters operate in the S-band where Radio Frequency (RF) bandwidths are limited for Telemetry (TM) collection on the range. The current spectrum allocation and range infrastructure only supports TM collections for 3 active missiles in flight on the range at one time. The new requirement is due to the large number of missiles to support planned testing. The weapons and range are required to move telemetry into the C-Band where bandwidth exists to support required TM collections. Engineering has already certified that this is achievable.</p> <p>8. MK 9 Continuous Wave Tracking Illuminator (CWTI) (Transmitter) Replacement: The MK 57 NATO SEASPARROW Surface Missile System (NSSMS) supports the SPARROW missile family with Semi-Active illumination in the form of Continuous Wave Tracking Illuminator (CWTI). The CWTI enables the MK 9 Tracker-Illuminator System (TIS) to support self-defense mission requirements and paces emerging threats. The MK 9 TIS CWTI replacement eliminates obsolescence issues and increases the Radio Frequency (RF) power output to provide improved tracking, with uplink, performance, and higher Evolved SEASPARROW Missile (ESSM) probability of guidance (PG) on low RADAR Cross Section (RCS) threats. Additionally, a replacement of 1960's United States Air Force (USAF) Radar Test Set (RTS) adapted for the United States Navy (USN) will be required to fulfill maintenance requirements and enhance additional frequency selections and ensure post-launch RF missile support for noise and uplink requirements.</p> <p>9. Next Generation Tracker-Illuminator System (TIS): An upgrade is required to existing ship's infrastructure to provide Semi-Active (SAX) illumination source that improves Evolved SEASPARROW Missile (ESSM) Block 2 probability of guidance (PG) when using Transition Section Guidance (TSG) Mode 0, 3 (current), or 5 (future). Additionally, an upgraded MK 9 TIS will improve Combat System probability of raid annihilation (PRA) for TSG Modes 0 and 5 (future). The receiver and tracking elements have reached the limits of their ability to support system requirements and deficiencies have been noted in Follow-on Operational Test and Evaluation</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)	Project (Number/Name) 0173 / NATO Sea Sparrow				
(FOT&E) out-briefs. This effort will develop (as required), qualify, test, and integrate modernized technology (equipment/ components) as part of the MK 9 TIS (e.g., Transmitter Group, Antenna, and Signal Processor).						
10. Next Generation Launching System: Develop, qualify, test, and integrate an upgrade/replacement to the legacy MK 29 Guided Missile Launching System (GMLS). This upgrade/replacement improves environmental protection for Guided Missile Assemblies (GMA) (reducing corrosion), Grade A Near Miss Shock (NMS) compliance, reduces manning requirements for loading/unloading operations, mitigates long term supportability issues, addresses obsolescence, reduces the life cycle cost for operating and maintaining the MK 132 Launcher, and reduces the cost and time for Evolved SEASPARROW Missile (ESSM) in-service refurbishment, or re-certification. This upgrade/replacement contains design margin to allow for growth, where the MK 132 Guided Missile Launcher is maximized today precluding ESSM Block 2 deployment.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Evolved Sea Sparrow Missile (ESSM) Blk 1 Testing		6.094	0.000	0.000	0.000	0.000
Articles:		-	-	-	-	-
FY 2023 Plans:						
NIA. Due to decrease in overall control funding was reduced to \$0. Previous plans in FY 2023 included supporting DDG 1000, DDG 1001, CVN 78, and emerging radar requirements.						
FY 2024 Base Plans:						
N/A						
FY 2024 OCO Plans:						
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						
N/A						
Title: BLK 2 Follow-on Test & Evaluation (FOT&E)		4.744	4.717	3.647	0.000	3.647
Articles:		-	-	-	-	-
FY 2023 Plans:						
Base plans for FY 2023 include conducting separate ESSM Blk 2 integration events with optimized systems including SSDS, Aegis, and FFG LBTS and ships. Conduct planning for executing DT/OT on an optimized system.						
FY 2024 Base Plans:						
FY 2024 planning includes DT/OT test events for optimized capability to be deployed across all MK 41 platforms employing ESSM Block 2, as well as testing to support SSDS initial fielding. Completion of these tests is necessary to complete Initial Operational Test and Evaluation (IOT&E) Phase 2, which will be required to						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)		Project (Number/Name) 0173 / NATO Sea Sparrow		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
generate the Beyond LRIP report to complete Full Rate Production Decision Review and Full Operational Capability milestones.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of funding from FY 2023 to FY 2024 due to a reduction in the following efforts; Program Test and Evaluation requirements will begin transitioning from providing technical support (technical interchanges meetings and Land Based Test Site integration test events) for implementation by AEGIS Baseline 9, 10, SSDS, and FFG, to conducting live fire test events and analysis for all associated combat systems.						
Title: NATO Sea Sparrow Combat System Integraton Technical Direction Agent (TDA)  Articles:  FY 2023 Plans: The CS TDA will continue to provide independent analysis and recommendations for emergent issues and engineering changes for deployed systems. The CS TDA will provide continued support of artifact and document reviews, technical meetings, and test requirement development for the MK 9 TIS CWTI replacement. The CS TDA will continue research into tracking algorithms and refining digital signal processing elements to support MK 9 TIS evolution. The CS TDA will also continue to evolve a local simulation capability with an ability to inject real target information to continue assessment of radar performance in support of mission area tasks within the integrated Combat System. The TDA will also support studies and analysis for integration of the Next Generation Launching System with the ESSM Block 2 missile to satisfy requirements for deployment fielding concurrence such as safety studies and topside integration.  FY 2024 Base Plans: The CS TDA will continue to provide support in the form of studies, analysis, and evaluations of hardware and software improvements for the MK 9 Tracker Illuminator System (TIS) and independent analysis and recommendations for emergent issues and engineering changes for deployed systems. The CS TDA will also support artifact and document reviews, technical meetings, test requirement development, participation in test and system integration events, and post test analysis for the MK 9 TIS CWTI replacement. The TDA will also support studies and analysis for integration of the Next Generation Launching System with the ESSM		1.965 -	2.336 -	2.382 -	0.000 -	2.382 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)		Project (Number/Name) 0173 / NATO Sea Sparrow		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Block 2 missile to satisfy requirements for deployment fielding concurrence such as safety studies and topside integration.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Increase of funding from FY 2023 to FY 2024: Funding required to maintain steady effort on Technical Direction Agent support for all NATO SEASPARROW Combat Systems integration efforts as upgrades of multiple MK 57 system elements, such as the MK 9 Tracker Illuminator System and MK 29 Guided Missile Launching System will have commenced development, testing, and modernization activities.						
Title: ESSM Blk 2 Technology Roadmap and Studies		1.287	1.210	1.234	0.000	1.234
Articles:		-	-	-	-	-
FY 2023 Plans: The ESSM Block 2 contractors and field activities will continue to perform necessary updates to the Technology Roadmap and conduct specific studies as directed by the Government, support meetings, create Plan Of Actions and Milestones (POA&Ms) for capability improvements, and deliver reports as necessary. Prospective updates will include, technology assessment with respect to maturity and risk; understanding the specifics of production impacts; assessing the impacts to ship integration impacts; and continuing to take into account the evolution of the threat. Maintenance of the Technology Roadmap must assess all these factors and provide an updated Roadmap periodically as appropriate.						
FY 2024 Base Plans: The ESSM Block 2 contractors and field activities will continue to perform necessary updates to the Technology Roadmap and conduct specific studies as directed by the Government, support meetings, create Plan Of Actions and Milestones (POA&Ms) for capability improvements, and deliver reports as necessary. Prospective updates will include, technology assessment with respect to maturity and risk; understanding the specifics of production impacts; assessing the impacts to ship integration impacts; and continuing to take into account the evolution of the threat. Maintenance of the Technology Roadmap must assess all these factors and provide an updated Roadmap periodically as appropriate.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)		Project (Number/Name) 0173 / NATO Sea Sparrow		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase of funding from FY 2023 to FY 2024: Small increase due to inflation factors.						
Title: Other Development		1.501	2.500	3.396	0.000	3.396
Articles:		-	-	-	-	-
FY 2023 Plans:						
Develops ET-17 software upgrade which is essential to fielding of ESSM Block 2 missile with AEGIS Baseline 10. Funds RMD to evaluate the SM Missile Family concept and software code, and to develop an additional Initialization Message (IM) and software within the missile to support ESSM Block 2 missile integration aligned to the DDG Flight III AEGIS Baseline 10 fielding plan. Additional funding required for APL and field activities support the upgrade. Funds CSEDS and At-SEA testing and updates the Interface Control Documentation.						
FY 2024 Base Plans:						
Complete integration of all NATO Seasparrow elements into CSTB and Enterprise Testbeds. This effort is required to support the verification and validation of advanced AEGIS and SSDS baselines employing the ESSM Block 2 missile. Complete the qualification and testing necessary for fielding of ET-17 capability.						
FY 2024 OCO Plans:						
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						
Increase of funding from FY 2023 to FY 2024: Planned to align with increased number of labor required to support completion of integrating into Combat Systems and Enterprise Test Beds to support fielding of ESSM with advanced AEGIS and SSDS baselines, as well as completion of work necessary to certify fielding of ET-17 capability.						
Title: ESSM Blk 2 Software Upgrades		4.719	7.500	7.570	0.000	7.570
Articles:		-	-	-	-	-
FY 2023 Plans:						
The ESSM Block 2 Prime Contractor will continue to perform necessary software updates that are resulting from performance improvements studies, from software issues resulting from Initial Operational Test and Evaluation (IOT&E) flight test results and as a result of new hardware and combat system changes as prioritized and directed by the Government. The effort will require the Prime Contractor to support meetings, create POA&Ms,						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)		Project (Number/Name) 0173 / NATO Sea Sparrow		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
develop algorithms, build proof of concepts and estimates for the capability improvements, and deliver software reports, test plans/procedures, and test inspection reports as necessary.						
<b>FY 2024 Base Plans:</b> The ESSM Block 2 Prime Contractor will continue to perform necessary software updates that are resulting from performance improvements studies, from software issues resulting from Initial Operational Test and Evaluation (IOT&E) flight test results and as a result of new hardware and combat system changes as prioritized and directed by the Government. The effort will require the Prime Contractor to support meetings, create POA&Ms, develop algorithms, build proof of concepts and estimates for the capability improvements, and deliver software reports, test plans/procedures, and test inspection reports as necessary.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of funding from FY 2023 to FY 2024: Small increase anticipated to sustain steady effort of continuous updates to correct issues identified through Initial Operational Test and Evaluation and Fleet introduction.						
<b>Title:</b> C-Band Telemetry Upgrades		10.586	4.334	4.616	0.000	4.616
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> Completes qualification testing. Submits supplier purchase orders for C-Band TDTS kits and TAAs. Completes Test Equipment upgrades to support kit development. Delivers Supplier kits. Initiates flight test round build up.						
<b>FY 2024 Base Plans:</b> Completes the ESSM Block 2 and C band telemeter qualification efforts and initial flight testing and telemetry verification. Completion of this work in FY 2024 is required for alignment to Flight 3 DDG & AEGIS Baseline 10 testing schedules.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of funding from FY 2023 to FY 2024: Increase due to maturation of the project development allowing transition to production qualification activities.						
<b>Title:</b> MK 9 CWTI (Transmitter) Replacement		21.850	3.374	1.006	0.000	1.006

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)	Project (Number/Name) 0173 / NATO Sea Sparrow		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:	-	-	-	-	-
FY 2023 Plans: Plans for FY 2023 include continuing NRE efforts to develop the MK 9 TIS CWTI replacement with the support of the IPT. This effort will continue with the Critical Design Review (CDR) and the initial subsystem assembly for the in-house Environmental Qualification Test (EQT) units, Engineering Development Model (EDM) and First Article Unit (FAU). Additionally, the Government will commence the establishment of a land-based test site (LBTS) at Yorktown, Naval Munitions Command (NMC) and upgrade of the test capability at NSWC PHD's Surface Warfare Engineering Facility (SWEF).					
FY 2024 Base Plans: Continue development efforts for the MK 9 TIS CWTI replacement including system assembly, manufacturer/ supplier interface, integration and testing. The in-house EQT units will be subjected to environmental qualification testing, the EDM unit will undergo performance qualification testing and the FAU will undergo Factory Acceptance Testing. The RDT&E portion of the contract will conclude when the government takes receipt of the Engineering, Manufacturing and Development (EMD) data, and the EDM & FAU units. Government Integration testing with the MK 9 TIS will then commence at a LBTS with support of the ISEA and field activities.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of funding from FY 2023 to FY 2024: Decrease anticipated as Firm Fixed Price Contract efforts ramp down with completion of development efforts and transition to production and fielding.					
Title: Next Generation Tracker- Illuminator System (TIS)	0.978	0.999	3.604	0.000	3.604
Articles:	-	-	-	-	-
FY 2023 Plans: Progress studies in support of Analysis of Alternatives and industry research to examine technologically mature solutions that will meet existing NATO SeaSparrow Surface Missile System requirements for a Tracker- Illuminator while also ensuring capability to pace mid-term evolving threats. This system will be required to perform tracking of the full spectrum of Air and Missile Defense threat set as well as terminal illumination to support missile guidance in final phase of intercept in a challenged Electromagnetic environment.					
FY 2024 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)		Project (Number/Name) 0173 / NATO Sea Sparrow		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue and conclude studies in support of Analysis of Alternatives and industry research to identify technologically mature candidates that will meet existing NATO SeaSparrow Surface Missile System requirements for a Tracker- Illuminator while also providing capability to pace mid-term evolving threats. This system will be required to perform tracking of the full spectrum of Air and Missile Defense threat set as well as terminal illumination to support missile guidance in final phase of intercept in a challenged Electromagnetic environment.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of funding from FY 2023 to FY 2024: Ramp up is planned in FY 2024 to begin generating Top Level Requirements to compete award via an Other Transaction Authority for development of a next generation TIS to provide capital ship (LHD/LHA/CVN) self defense engagement capability against emerging threats.						
<b>Title:</b> Next Generation Launching System  <b>Articles:</b>		11.346 -	11.899 -	3.751 -	0.000 -	3.751 -
<b>FY 2023 Plans:</b> Conclusion of Phase 1 will occur and the start of Phase 2 (starting in FY 2023) will begin. Phase 2 consists of design qualification testing, software verification and validation as well as integration testing. Qty 2. Prototypes, supporting equipment, and missile hardware will be procured to support the qualification effort. Notional test plans includes shock, vibration, effects of electromagnetic radiation, transportation and insensitive munition testing.  <b>FY 2024 Base Plans:</b> Phase 2 will come to conclusion with the completion of testing, intergration and software verification and validation. Phase 3 will begin and culminate in FY 2024. Phase 3 is the report out and delivery of all required hardware, software, and documentation to include the final delivery of a level 3 technical data package (TDP) to government.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy								<b>Date:</b> March 2023				
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>				<b>Project (Number/Name)</b> 0173 / <i>NATO Sea Sparrow</i>				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>								<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Decrease of funding from FY 2023 to FY 2024: Decrease in FY 2024 is due to the fact that development efforts will be mostly funded by FY 2023. Minor follow on efforts for the completion of system testing and delivery of completed documentation will be provided in FY 2024.												
<b>Accomplishments/Planned Programs Subtotals</b>								65.070	38.869	31.206	0.000	31.206
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
• WPN 2307: <i>ESSM</i>	239.309	276.335	290.129	-	290.129	522.391	513.145	548.752	561.593	Continuing	Continuing	
• OPN 5231: <i>Ship Missile Defense</i>	42.283	45.025	33.546	-	33.546	34.263	35.074	35.898	36.639	Continuing	Continuing	
• OMN 1D4D: <i>NATO Seasparrow</i>	31.201	35.960	47.119	-	47.119	51.058	55.118	56.256	57.251	0.000	416.335	
<b>Remarks</b>												
OMN funding is for ESSM Blk 1, NSSMS, & RIM-7; ESSM Blk 2 In-Service Support began in FY 2021.												
<b>D. Acquisition Strategy</b>												
Competitively awarded MK 9 CWTI.												
Competitively awarding the Next Generation Launching System.												
Plan to competitively award Next Generation TIS.												
ESSM Blk 2 EMD is a directed sole source contract to Raytheon Missile Systems Company.												

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Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)				Project (Number/Name) 0173 / NATO Sea Sparrow					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ESSM Systems Engineering/Firing Spt	WR	Corona : CA	13.291	0.999	Dec 2021	0.000	Dec 2022	0.000		-		0.000	0.000	14.290	-
ESSM Systems Engineering/Firing Spt Blk 2	WR	Corona : CA	0.200	0.202	Dec 2021	0.251	Dec 2022	0.000		-		0.000	0.000	0.653	-
NATO OC System Engineering	C/ FFPLOE	Raytheon : RI	1.955	0.000		0.000		0.000		-		0.000	0.000	1.955	-
NATO OC - Software	C/ FFPLOE	Raytheon : RI	8.054	0.000		0.000		0.000		-		0.000	0.000	8.054	-
Stalker System Engineering	WR	NSWC Crane : IN	4.782	0.000		0.000		0.000		-		0.000	0.000	4.782	-
Stalker Hardware Engineering	WR	NSWC Crane : IN	14.350	0.000		0.000		0.000		-		0.000	0.000	14.350	-
Stalker Software Engineering	WR	NSWC Crane : IN	2.725	0.000		0.000		0.000		-		0.000	0.000	2.725	-
ESSM Primary Hardware Development	C/CPAF	Raytheon : Tuscon	193.941	0.000		0.000		0.000		-		0.000	0.000	193.941	-
ESSM Ancillary Hardware	Various	Various : Various	71.324	0.000		0.000		0.000		-		0.000	0.000	71.324	-
ESSM Blk 2 EMD	C/CPIF	Raytheon : Tuscon	341.816	0.000		0.000		0.000		-		0.000	0.000	341.816	-
I-Stalker Systems Engineering	WR	NSWC Crane : Crane, IN	4.690	0.000		0.000		0.000		-		0.000	0.000	4.690	-
TTP	SS/FFP	Raytheon : Tuscon	49.980	0.000		0.000		0.000		-		0.000	0.000	49.980	-
ESSM Blk 2 Risk reduction	SS/ FFPLOE	Raytheon : Tuscon	44.150	0.000		0.000		0.000		-		0.000	0.000	44.150	-
NATO OC Systems Engineering SPT	WR	NSWC PHD : CA	0.700	0.000		0.000		0.000		-		0.000	0.000	0.700	-
Dual Band Tranceiver	SS/FFP	Raytheon : Tuscon	6.155	0.000		0.000		0.000		-		0.000	0.000	6.155	-
Studies/Technology Roadmap	TBD	Raytheon : Tuscon	0.375	1.287	Dec 2021	1.210	Dec 2022	1.234	Dec 2023	-		1.234	0.000	4.106	-
Other Development	TBD	Raytheon : Tucson	6.103	1.501	Dec 2021	2.500	Dec 2022	3.396	Dec 2023	-		3.396	0.000	13.500	-
Software Upgrades	TBD	Raytheon : Tucson	1.500	4.719	Dec 2021	7.500	Dec 2022	7.570	Dec 2023	-		7.570	0.000	21.289	-

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Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)						Project (Number/Name) 0173 / NATO Sea Sparrow					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
C-Band Telemetry upgrade	TBD	TBD : TBD	6.234	10.586	Nov 2021	4.334	Nov 2022	4.616	Dec 2023	-		4.616	0.000	25.770	-		
CMBRE Adaptor	TBD	NG : NA	4.000	0.000		0.000		0.000		-		0.000	0.000	4.000	-		
Illuminator System	TBD	TBD : TBD	0.960	0.978	Jan 2022	0.999	Jan 2023	3.604	Dec 2023	-		3.604	0.000	6.541	-		
Launching System	TBD	TBD : TBD	1.431	11.346	Feb 2022	11.899	Feb 2023	3.750	Dec 2023	-		3.750	0.000	28.426	-		
I-Stalker Systems Engineering	WR	NRL : TBD	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-		
I-Stalker Systems Engineering	WR	APL : TBD	0.525	0.000		0.000		0.000		-		0.000	0.000	0.525	-		
MK 9 CWTI Replacment	TBD	NSWC PHD : CA	0.000	0.000		0.000		1.006	Nov 2023	-		1.006	0.000	1.006	-		
MK 9 CWTI Replacment	C/FFP	SAAB : NY	0.000	21.850	Jan 2022	3.374	Jan 2023	0.000		-		0.000	0.000	25.224	-		
Subtotal			780.041	53.468		32.067		25.176		-		25.176	0.000	890.752	N/A		
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
NATO System TDA	SS/FP	APL : MD	7.777	1.965	Jan 2022	2.336	Jan 2023	2.382	Jan 2024	-		2.382	Continuing	Continuing	Continuing		
Stalker -ISEA/TDA/RM&A	SS/FFP	various : various	0.750	0.000		0.000		0.000		-		0.000	0.000	0.750	-		
ILS/Engineering Support	Various	Various : Various	15.543	0.000		0.000		0.000		-		0.000	0.000	15.543	-		
ESSM Blk 2 EMD	WR	APL : MD	20.454	0.000		0.000		0.000		-		0.000	0.000	20.454	-		
ESSM Blk 2 EMD	WR	NAWC CL : CA	27.315	0.000		0.000		0.000		-		0.000	0.000	27.315	-		
ESSM Blk 2 EMD	Various	Various : Various	11.581	0.000		0.000		0.000		-		0.000	0.000	11.581	-		
I-Stalker Platform Integration	WR	Norfolk Naval Shipyard (NNSY) : Norfolk, VA	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	-		
I-Stalker Platform Integration	C/BA	NSWC Dahlgren : Dahlgren, VA	0.847	0.000		0.000		0.000		-		0.000	0.000	0.847	-		
I-Stalker Platform Integration	C/BA	NSWC Crane : Crane, IN	1.124	0.000		0.000		0.000		-		0.000	0.000	1.124	-		

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>						<b>Project (Number/Name)</b> 0173 / <i>NATO Sea Sparrow</i>			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
I-Stalker Platform Integration	WR	PSNSY : Puget Sound, WA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
NATO OC Support	WR	Dahlgren : VA	2.174	0.000		0.000		0.000		-		0.000	0.000	2.174	-
Dual Band Transceiver	WR	APL : MD	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-
Dual Band Tranceiver	WR	NAWC CL : CA	1.600	0.000		0.000		0.000		-		0.000	0.000	1.600	-
<b>Subtotal</b>			90.865	1.965		2.336		2.382		-		2.382	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Operational Test & Evaluation (OT&E)	WR	NAWC CL : CA	24.881	0.945	Dec 2021	0.000	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	WR	NAWC CL : CA	0.250	0.501	Dec 2021	0.901	Dec 2022	0.921	Nov 2023	-		0.921	0.000	2.573	-
Operational Test & Evaluation (OT&E)	WR	Corona, IHD, Dahlgren, SNSWC, PHD) : Various	23.354	1.125	Nov 2021	0.000	Nov 2022	0.000		-		0.000	0.000	24.479	-
Live Fire Test & Evaluation (LFT&E)	WR	Corona, IHD, Dahlgren, SNSWC, PHD) : Various	0.150	0.302	Nov 2021	0.502	Nov 2022	0.560	Nov 2023	-		0.560	0.000	1.514	-
Operational Test & Evaluation (OT&E)	SS/FFP	APL : MD	7.617	0.620	Nov 2021	0.000	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	C/CPAF	Raytheon : Tuscon	30.123	1.501	Dec 2021	0.000	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	C/CPAF	Raytheon : Tuscon	0.599	2.911	Dec 2021	2.064	Dec 2022	1.064	Dec 2023	-		1.064	0.000	6.638	-
Operational Test & Evaluation (OT&E)	WR	Dahlgren/PHD : VA/CA	4.432	0.113	Nov 2021	0.000	Dec 2022	0.000		-		0.000	0.000	4.545	-
Operational Test & Evaluation (OT&E)	WR	Dahlgren : VA	0.418	0.000		0.000		0.000		-		0.000	0.000	0.418	-



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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	NSWC Crane : IN	0.564	0.000		0.000		0.000		-		0.000	0.000	0.564	-
Subtotal			92.388	8.018		3.467		2.545		-		2.545	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ESSM-Support and Performing Activity	Allot	PHD/NAWC CL/ APL : CA/MD	18.370	0.691	Nov 2021	0.000	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
ESSM-Travel	Allot	Program Office : VA	3.827	0.100	Oct 2021	0.100	Oct 2022	0.100	Oct 2023	-		0.100	Continuing	Continuing	Continuing
ESSM-Misc	Various	various : various	2.149	0.000		0.000		0.000		-		0.000	0.000	2.149	2.065
NATO Travel/Misc	Various	Program Office : various	2.111	0.000		0.000		0.000		-		0.000	0.000	2.111	-
ESSM-Support and Performing Activity Blk 2	Allot	PHD/NAWC CL/ APL : CA/MD	0.301	0.828	Nov 2021	0.899	Nov 2022	1.003	Nov 2023	-		1.003	0.000	3.031	-
Engineering Support	Various	Various : Various	5.458	0.000		0.000		0.000		-		0.000	0.000	5.458	-
I-Stalker Engineering Support	Various	TMB : Various	0.275	0.000		0.000		0.000		-		0.000	0.000	0.275	-
Subtotal			32.491	1.619		0.999		1.103		-		1.103	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			995.785	65.070		38.869		31.206		-		31.206	Continuing	Continuing	N/A
Remarks Various used for multiple vendors and location under threshold.															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

Date: March 2023

**Appropriation/Budget Activity**

1319 / 5

R-1 Program Element (Number/Name)	Program Element Description	Program Element Type	Program Element Status	Program Element Location	Program Element Contact	Program Element Date	Program Element Notes

PE 0604756N / Ship Self Def (Engage: Har  
d Kill)

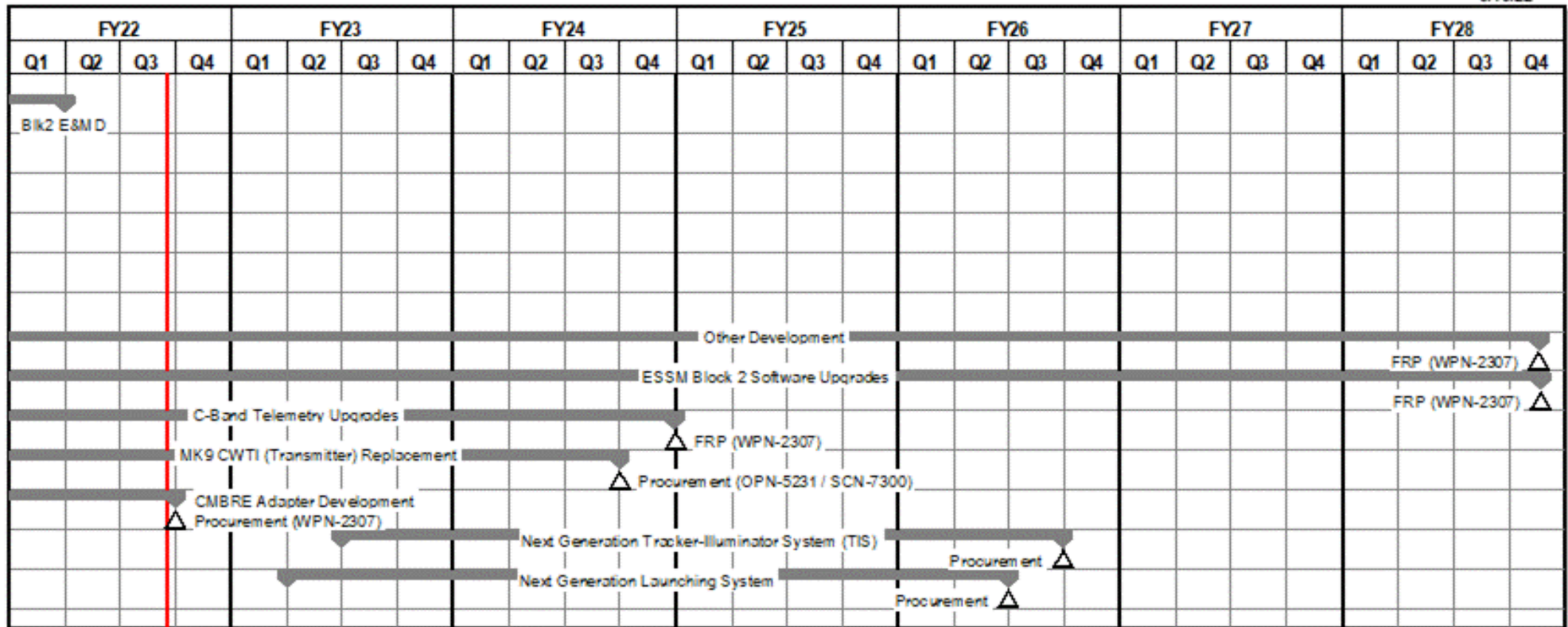
Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-31	Completed	J. Doe	150,000	148,500	100	Low	Exceeded budget by 1.5%
102/Beta	2023-02-01	2023-05-15	In Progress	A. Smith	220,000	180,000	82	Medium	Minor delays in procurement
103/Gamma	2023-03-10	2023-06-30	On Hold	M. Chen	90,000	10,000	11	High	Waiting for client approval
104/Delta	2023-04-01	2023-07-31	Planned	S. Kim	300,000	0	0	Medium	Initial planning phase
105/Epsilon	2023-05-01	2023-08-31	On Hold	L. Garcia	180,000	0	0	Low	Resource allocation pending
106/Zeta	2023-06-01	2023-09-30	Planned	K. Lee	250,000	0	0	Medium	Scope definition in progress
107/Eta	2023-07-01	2023-10-31	Planned	H. Patel	120,000	0	0	Low	Market research ongoing
108/Theta	2023-08-01	2023-11-30	Planned	B. Wong	170,000	0	0	Medium	Vendor selection process
109/Iota	2023-09-01	2023-12-31	Planned	F. Adams	110,000	0	0	Low	Initial team assembly
110/Kappa	2023-10-01	2024-01-31	Planned	C. Brown	190,000	0	0	Medium	Feasibility study phase

0173 / NATO Sea Sparrow

## 0173 Development Schedule

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6/16/22



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)	Project (Number/Name) 0173 / NATO Sea Sparrow	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0173				
ESSM DEVELOPMENT: Other Development	1	2022	4	2028
ESSM DEVELOPMENT: ESSM Blk 2 Software Upgrades	1	2022	4	2028
ESSM DEVELOPMENT: C-Band Telemetry Upgrades	1	2022	4	2024
ESSM DEVELOPMENT: MK9 CWTI (Transmitter) Replacement	1	2022	3	2024
ESSM DEVELOPMENT: CMBRE Adaptor Development	1	2022	3	2022
ESSM DEVELOPMENT: Next Generation Tracker-Illuminator System (TIS)	3	2023	3	2026
ESSM DEVELOPMENT: Next Generation Launching System	2	2023	3	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)				Project (Number/Name) 2070 / OTH Missile			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2070: OTH Missile	56.861	10.766	8.278	5.200	-	5.200	0.000	0.000	0.000	0.000	0.000	81.105
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Over-The-Horizon (OTH) Missile funds competitive acquisition, testing, integrating and fielding of a modern, technologically mature Over-the-Horizon Missile Launch System (OTH-MLS) surface to surface missile capability will be installed onto commissioned and in-production Littoral Combat Ship Variants/Frigate(LCS/FFG)beginning FY 2019.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: OTH-MLS Test and Evaluation and Systems Engineering								10.766	8.278	5.200	0.000	5.200
Articles:								-	-	-	-	-
FY 2023 Plans:												
- Continue to provide OTH-MLS missile and fire control subject matter expertise to support the program office with program execution.												
- Continue Electro-Static discharge (ESD) and Electro-magnetic vulnerability (EMV) testing to obtain safety certification.												
- Complete system environmental testing.												
- Support Fleet and User evaluation.												
- Continue with OTH-MLS and Combat System integration growth.												
- Obtain OTH WS Full Rate Production (FRP) decision.												
- Complete EOD tests as mandated by DoD EOD and												
- Continued Insensitive Munitions (IM) testing will be executed in accordance with the OTH-MLS IM test plan. IM testing includes fast/slow energetics cook offs, bullet / fragment impact testing, sympathetic reaction testing, and missile drop tests.												
- Continue safety testing to support the WSESRB												
- Continue Live Fire Test and Evaluation (LFT&E) program.												
- Continue OT in accordance with the OTH-MLS Test and Evaluation Master Plan (TEMP.)												
- Complete operational flight tests.												
FY 2024 Base Plans:												
- Continue to provide OTH-MLS missile and fire control subject matter expertise to support the program office with program execution.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)			Project (Number/Name) 2070 / OTH Missile				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Support Fleet and User evaluation - Continue with OTH-MLS and Combat System integration growth. - Continue Live Fire Test and Evaluation (LFT&E) program. - Continue OT in accordance with the OTH-MLS Test and Evaluation Master Plan (TEMP.) - Complete operational flight tests.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 decreases as program as program completes integration and safety testing. FY 2024 funds then completion of Operational Tests and Life Fire Test and Evaluation warhead arena test and sled tests.											
Accomplishments/Planned Programs Subtotals							10.766	8.278	5.200	0.000	5.200
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN /5231: Ship Missile	10.490	13.231	6.625	-	6.625	8.946	8.944	4.435	4.524	Continuing	Continuing
Support Equipment/OTH Missile											
• WPN 2292: Naval Strike Missile (NSM)	52.377	59.034	29.925	-	29.925	28.719	30.208	31.736	32.604	Continuing	Continuing
• PMC/2292: Naval Strike Missile (NSM)	0.000	174.369	169.726	-	169.726	170.845	169.913	169.878	170.428	0.000	1,025.159
• PMC/2212: GBASM NSM	105.186	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	105.186
Remarks											
OPN 5231 is a shared BLI - Funding only reflects OTH-MLS cost elements. PMC 2292 is a new LI previously executed out of PMC 2212. LI will procure same NSM configuration as the DON. PMC 2212 only reflects NSMs funded in FY 2022.											
D. Acquisition Strategy											
The OTH-MLS is an Acquisition Category (ACAT) II level weapon system production and sustainment program to provide the current Littoral Combat Ship (LCS) variants and Frigate (FFG) ships with an Over-the-Horizon Surface-To-Surface Missile (SSM) capability. The Navy awarded a seven-year competitive contract awarded to Raytheon May 31, 2018 that procures material, procures test assets, and provides installation support.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)				Project (Number/Name) 2070 / OTH Missile					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OTH All Up Round (AUR) Technical Design Agent	WR	NAWC/WD : China Lake, CA	9.037	2.600	Oct 2021	1.540	Oct 2022	2.000	Oct 2023	-		2.000	0.000	15.177	-
OTH Simulation and Analysis	WR	NSWC/COR : Corona, CA	1.699	0.413	Oct 2021	0.431	Oct 2022	0.200	Oct 2023	-		0.200	0.000	2.743	-
OTH Weapon System Design Agent	WR	NSWC/DD : Dahlgren, VA	3.337	0.310	Oct 2021	0.822	Oct 2022	0.100	Oct 2023	-		0.100	0.000	4.569	-
OTH Test & Evaluation / ILS	WR	NSWC/PHD : Port Hueneme, CA	2.753	0.976	Oct 2021	0.800	Oct 2022	0.000		-		0.000	0.000	4.529	-
OTH Weapon System Safety	WR	NSWC/DD : Dahlgren, VA	0.830	0.550	Oct 2021	0.600	Oct 2022	0.000		-		0.000	0.000	1.980	-
Weapons Systems Engineering Planning	FFRDC	JHU/APL : Laurel, MD	1.027	0.000	Dec 2021	0.000	Dec 2022	0.000		-		0.000	0.000	1.027	-
OEM Engineering Support	C/CPFF	Raytheon : Tucson, AZ	8.280	1.000	Nov 2021	0.680	Nov 2022	0.200	Nov 2023	-		0.200	0.000	10.160	-
Test & Evaluation Assets	C/FFP	Raytheon : Tucson, AZ	11.339	0.000		0.000		0.000		-		0.000	0.000	11.339	-
Range & Target	WR	Pt. Mugu : Pt. Mugu, CA	7.250	0.000	Oct 2021	2.652	Aug 2023	0.000		-		0.000	0.000	9.902	-
Test Asset Procurement	C/FFP	Raytheon : Tucson, AZ	7.353	2.500	Jul 2022	0.000	Nov 2022	0.000		-		0.000	0.000	9.853	-
OTH WEAPON System safety	WR	NSWC/IHD : Indian Head, MD	0.030	0.100	Jun 2022	0.000		0.000		-		0.000	0.000	0.130	-
Test and Eval	WR	OTF : Norfolk, VA	0.293	0.102	Jun 2022	0.000		0.000		-		0.000	0.000	0.395	-
OTH Safety Testing	WR	White Sands : White Sands, NM	0.733	0.500	Aug 2022	0.000		0.000		-		0.000	0.000	1.233	-
Survivability &Functionality Testing	MIPR	AMTC : Redstone Arsenal/ AL	0.000	0.800	Jun 2022	0.000		0.000		-		0.000	0.000	0.800	-
Subtotal			53.961	9.851		7.525		2.500		-		2.500	0.000	73.837	N/A
Remarks Required procurement of EOD, Safety and Insensitive Munition Test Assets that support continued deployment and integration efforts.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)						Project (Number/Name) 2070 / OTH Missile					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Operational Test & Evaluation (OT&E)	WR	NSWC/PHD : Port Hueneme, CA	0.000	0.000		0.000		0.100	Oct 2023	-		0.100	0.000	0.100	-		
Live Fire Test & Evaluation (LFT&E)	WR	Pt. Mugu : Pt. Mugu, CA	0.000	0.000		0.000		2.500	Aug 2024	-		2.500	0.000	2.500	-		
Operational Test & Evaluation (OT&E)	WR	OTF : Norfolk, VA	0.000	0.000		0.000		0.100	Oct 2023	-		0.100	0.000	0.100	-		
Subtotal			0.000	0.000		0.000		2.700		-		2.700	0.000	2.700	N/A		
Remarks Range and target funding supports planning and execution of the Naval Strike Missile flight test event starting FY 2023 through FY 2024.																	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
OTH Contractor Acquisition Mgt Support	C/CPIF	BAH : Arlington, VA	0.621	0.100	Dec 2021	0.150	Dec 2022	0.000		-		0.000	0.000	0.871	-		
OTH Program Management Support	C/CPIF	Strategic Insight : Arlington, VA	0.100	0.280	Dec 2021	0.050	Dec 2022	0.000		-		0.000	0.000	0.430	-		
OTH Program Management Support	WR	PEO IWS : Arlington, VA	0.950	0.215	Oct 2021	0.178	Oct 2022	0.000		-		0.000	0.000	1.343	-		
OTH Contractor Engineering Support	C/CPIF	SERCO : Arlington, VA	1.229	0.200	Dec 2021	0.225	Dec 2022	0.000		-		0.000	0.000	1.654	-		
TH Contractor Acquisition Mgt Support	C/CPIF	BAE : Arlington, VA	0.000	0.120	Aug 2022	0.150	Dec 2022	0.000		-		0.000	0.000	0.270	-		
Subtotal			2.900	0.915		0.753		0.000		-		0.000	0.000	4.568	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			56.861	10.766		8.278		5.200		-		5.200	0.000	81.105	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)						Project (Number/Name) 2070 / OTH Missile			

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 2070																												
Limited WSESRB Planning & Execution (SSSTRP, FISTRP, HERO, IM)																												
Major Review - Milestone C Decision																												
Full Deployment WSESRB																												
System Qualification																												
Full Rate Production (FRP) Decision																												
Operational Testing																												
Contract Option 5 Award																												



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)	Project (Number/Name) 2070 / OTH Missile	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2070				
Limited WSESRB Planning & Execution (SSSTRP, FISTRP, HERO, IM)	1	2022	1	2023
Major Review - Milestone C Decision	1	2022	1	2023
Full Deployment WSESRB	1	2022	4	2024
System Qualification	1	2022	4	2023
Full Rate Production (FRP) Decision	1	2024	1	2024
Operational Testing	1	2022	4	2024
Contract Option 5 Award	1	2023	1	2023

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604756N / <i>Ship Self Def (Engage: Hard Kill)</i>				<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: <i>Congressional Adds</i>	0.000	22.189	20.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.189
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
 The 57mm MK 332 HE-4G Projectile significantly increases MK 110 Gun Mount lethality and effectiveness against Fast Attack Craft and Fast In-Shore Attack Craft (FAC/FIAC). ALaMO Block 1 demonstrates an alternative seeker and guidance technologies, potentially providing improved lethality compared to base ALaMO projectile.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> ALaMO block 1 projectile	22.189	20.000
<b><i>FY 2022 Accomplishments:</i></b> Planning of prototype contract and execution of initial government engineering analysis and baseline testing.		
<b><i>FY 2023 Plans:</i></b> Award development contract; complete initial design assessment and testing; perform component down select; initiate warhead optimization and guidance, navigation, and control integration.		
<b>Congressional Adds Subtotals</b>	22.189	20.000

**C. Other Program Funding Summary (\$ in Millions)**  
 N/A

**Remarks**

**D. Acquisition Strategy**  
 MK 332 HE-4G Block 1 development and prototype hardware build will be awarded competitively in mid-2023 to support production and test of assets in FY 2023.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)					Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Design and build of prototype hardware		MIPR	DOTC PICATINNY : Arsenal, NJ	0.000	20.739	Apr 2023	14.664	Apr 2023	0.000		-		0.000	0.000	35.403	-
Subtotal			0.000	20.739		14.664		0.000		-		0.000	0.000	35.403	N/A	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Government Engineering and Test		WR	NSWC DD : Dahlgren, VA	0.000	1.450	Jul 2022	5.336	Mar 2023	0.000		-		0.000	0.000	6.786	-
Subtotal			0.000	1.450		5.336		0.000		-		0.000	0.000	6.786	N/A	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			0.000	22.189		20.000		0.000		-		0.000	0.000	42.189	N/A	
Remarks																

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Har d Kill)						Project (Number/Name) 9999 / Congressional Adds			

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 9999																												
Contract preparation and award																												
Government Engineering Assessments and Testing																												
Prototype Design Development																												
Prototype Hardware Build																												
Government Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604756N / Ship Self Def (Engage: Hard Kill)		Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Contract preparation and award	3	2022	3	2023
Government Engineering Assessments and Testing	3	2022	3	2023
Prototype Design Development	2	2023	4	2023
Prototype Hardware Build	3	2023	4	2024
Government Testing	4	2023	4	2024

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	746.350	64.200	97.537	125.206	-	125.206	134.320	84.442	53.439	53.828	Continuing	Continuing
0954: Shipboard EW Improvement Program	83.902	15.384	20.432	53.503	-	53.503	68.521	44.645	17.632	17.753	Continuing	Continuing
2190: NULKA Decoy	57.343	6.667	6.211	5.326	-	5.326	6.087	5.667	6.017	5.769	Continuing	Continuing
3068: Long Endurance Electronic Decoy (LEED)	0.000	10.637	38.363	39.364	-	39.364	35.330	22.625	22.619	23.007	Continuing	Continuing
3316: Advanced Offboard EW	325.062	28.221	26.321	18.107	-	18.107	18.084	5.460	1.140	1.170	Continuing	Continuing
3321: SEWIP Block 3	280.043	3.291	6.210	8.906	-	8.906	6.298	6.045	6.031	6.129	Continuing	Continuing

## **A. Mission Description and Budget Item Justification**

0954 - The Surface Electronic Warfare Improvement Program (SEWIP) is segmented into Block 1A, Block 1B, Block 2, Block 3 and Soft Kill Coordination System (SKCS). Block 1A upgraded the AN/SLQ-32 pulse-processing computers. Block 1B added adjunct sensors, including Specific Emitter Identification (SEI), and High Gain High Sensitivity (HGHS) (Block 1B3), a critical improvement for extending the battle space. Block 2 enhanced Surface Electronic Warfare (EW) and provided improved Anti-Ship Missile Defense (ASMD) and situational awareness (SA) through an improved Electronic Support (ES) receiver, antenna, and combat system interface. The addition of Block 2 to Block 1B3 forms the AN/SLQ-32(V)6. Block 3 will provide an enhanced Onboard Electronic Attack (EA) capability to improve ASMD and counter-targeting. The addition of Block 3 to AN/SLQ-32(V)6 forms the AN/SLQ-32(V)7 system. The SKCS will provide SK weapon coordination and enhanced situational awareness to the AN/SLQ-32(V)6 and (V)7 with EW/radar track association to support Softkill (SK) engagement decisions. EW Rapid Capability Insertion Process (RCIP) identifies system and mission capability gaps by analyzing EW baseline and fleet requirements, prioritizes those gaps based on fleet input and critical technology maturity, and develops upgrades to the AN/SLQ-32(V) product line to address those gaps. RCIP also integrates Future Naval Capability (FNC) programs into SEWIP.

The FY24 budget request supports continued development, test and integration of SKCS with AEGIS Baseline (BL) 9 and BL 10, year four efforts for RCIP #7 which analyzes and designs hardware upgrades to improve signal throughput and system reliability, and continues RCIP #8 to improve anti-ship missile defense capability of SLQ-32(V)6/7 when operating with other netted EW sensors and effectors. RCIP #9 has been added in FY23 to initiate Shipboard EW Self-Protection improvements.

Scaled Onboard Electronic Attack (SOEA) is an incremental development program added under PU 0954 by the USN to provide an advanced Electronic Attack (EA) capability against anti-ship missiles. SOEA will assimilate into the Surface Electronic Warfare Improvement Program (SEWIP) family of shipboard Electromagnetic Warfare systems. The program is intended to be scalable for Surface Combatants with size, weight, power, and cooling (SWaP-C) constraints that cannot support AN/SLQ-32(V)7 (SEWIP Block 3) installation. SOEA development executes under a Middle Tier Rapid Prototyping acquisition strategy pursuant to Section 804 of the FY16 National Defense Authorization Act.

SOEA's acquisition strategy for the first increment consists of two phases: Preliminary Prototyping and Integrated System Development. The first phase includes prototyping of critical technology elements (CTEs) via the Defense Microelectronics Agency (DMEA) to prove out and validate critical performance capability, system

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604757N / <i>Ship Self Def (Engage: Soft Kill/EW)</i>
<p>architecture functionality, and supportability requirements. The second phase will utilize a competitive, Other Transaction Authority (OTA) contract to build on the CTEs, incorporate design modularity, establish critical external interfaces for system and platform integration, and complete software development. Phase 2 will deliver integrated Engineering Development Models (EDMs) to a Land Based Test Site (LBTS) and rapid field initial Production Representative Units (PRUs).</p> <p>The SOEA Middle Tier Acquisition (MTA) leverages technology developed by the Office of Naval Research's (ONR) and Naval Research Laboratory (NRL).</p> <p>SOEA will continue to expand the integrated shipboard combat system by providing new integrated EA capability. SOEA will be integrated with AN/SLQ-32(V)6. SOEA includes a government software development and integration effort for a Soft-Kill Coordinator System (SKCS) to manage EA engagements. SOEA will leverage and expand the Electronic Warfare Test Bed (EWTB) developed under SEWIP Block 3.</p> <p>The FY24 budget request for SOEA includes procurement of preliminary prototypes to prove out and validate critical performance capability, system architecture functionality, and supportability requirements. Funding also supports failure mode analyses and platform integration studies, as well as initiation activities for the second phase of development.</p> <p>2190 - The Offboard Active Decoy (Nulka) is a joint cooperative program between the United States and Australia that developed an active offboard decoy that utilizes a broadband radio frequency repeater mounted atop a hovering rocket. Nulka counters a wide variety of present and future radar guided Anti-Ship Missiles (ASMs) by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket.</p> <p>The FY24 budget request includes Decoy Launcher Processor (DLP) technology refresh to address threat studies as well as address obsolescence issues. The Objective Architecture development will continue which provides improved Nulka decoy deployment as well as Soft Kill Coordination System (SKCS) integration.</p> <p>3068 - The Long Endurance Electronic Decoy (LEED) program will deliver an expendable long endurance autonomous off-board decoy Countermeasure system, comprised of a flight vehicle and Radio Frequency (RF) payload with modular capability allowing for rapid modification of the Electronic Warfare (EW) payload. LEED development executes under a middle tier rapid prototyping acquisition strategy pursuant to Section 804 of the FY16 National Defense Authorization Act. LEED will integrate with SLQ-32 and address EW gaps in response to a fleet requirement to counter Anti-Ship Missile (ASM) threats. LEED will provide the fleet with enhanced EW coordination and capability, including the ability to stretch engagement timelines and counter heterogeneous missile attacks.</p> <p>The overarching LEED strategy consists of two phases including a Middle Tier of Acquisition Rapid Prototyping (MTA RP) phase followed by Major Capability Acquisition. The MTA RP phase will include Preliminary and Intergrated Countermeasure Prototype Development (FY21-FY25), and Integrated System Testing (FY24-FY25). The MTA RP phase includes the development and test of operational-level Countermeasure prototypes, launch systems, and control software that demonstrate and validate critical capabilities, including flight performance, control, and RF functionality. Data collected from the initial prototypes will be used to develop Engineering Development Models (EDMs) for Qualification Testing to support a Milestone C decision for Low Rate Initial Production (LRIP) as LEED enters the Major Capability Acquisition phase. LRIP will be executed under a follow-on production OTA and will include the procurement and fielding of production representative units for at-sea capability assessments (FY28) of the Countermeasure system, while LEED transitions to full production and sustainment.?</p>		



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604757N / <i>Ship Self Def (Engage: Soft Kill/EW)</i>
<p>LEED will be developed alongside the Office of Naval Research (ONR) Long Endurance Airborne Platform (LEAP) Project, which began in FY21. LEED will leverage technologies developed and matured under the ONR LEAP Project.</p> <p>The FY24 budget request supports LEED countermeasure prototype final test demonstrations and integrated countermeasure development at the prime contractor, including material purchases, system/subsystem integration, integrated system demonstration testing and system performance testing.</p> <p>3316 - The Advanced Offboard EW (AOEW) program is for the development of long duration off-board decoys integrated with onboard systems for EW coordination to counter identified EW gaps (additional details classified) in response to an urgent operational need from the Fleet that has been approved by the CNO for execution. In FY 2012, the program began with a Rapid Response Effort (RRE) which was completed in FY 2014. The RRE consisted of the evaluation and integration of commercially available decoys. The Decoy Development Effort (DDE) consists of the development and evaluation of a long duration, active electronic offboard decoy system (payload) integrated on an existing flight vehicle (MH-60R/MH-60S), integration with ship and air systems, and a government software development effort to integrate AOEW into the Soft Kill Coordination System (SKCS) to gain maximum effectiveness from the decoy through coordination with an onboard system.</p> <p>In the DDE/E&amp;MD Contract effort, which commenced in 2017, the program is developing and integrating Engineering Development Models (EDMs) with the System of Systems (SOS) partners to include conduct of Factory Qualification Testing (FQT), preparation for the program's test phase ramping up in Q2FY23, and FY23 delivery of the Technical Data Package (TDP). Schedule shifts in program testing and delivery of TDP are due to test complexity.</p> <p>As part of the MH-60R/S Flight Certification effort, the program is required to complete NAVAIR Avionics Operating Program (AOP) software development and Flight Certification, which are critical to support fielding of the AOEW decoy. The AOP software supports integration of the AOEW decoy with the MH-60R/S airframe and is required for successful completion of Flight Certification. AOP software development was completed in FY21. Flight Certification testing includes Ground and Flight Jettison, Flight Test for Mission Performance / Spec Compliance Flight Test, Functional Software Test, and Decoy Fit and Egress Test, which ensures operational Safety of Flight and is critical to successful decoy fielding.</p> <p>The FY24 budget request supports NAVAIR conduct of Avionics Operating Program (AOP) MH-60R and MH-60S Software Testing necessary for AOEW Decoy and Helicopter Integration into the baseline and NAVAIR Air Worthiness and Flight Certification.</p> <p>3321 - SEWIP Block 3 is developing an advanced Electronic Attack (EA) capability to keep pace with the evolving Anti-Ship Missile Defense (ASMD) threat and counter targeting required for the AN/SLQ-32(V) system. SEWIP Block 3 will provide the AN/SLQ-32(V)7 system for all surface ships (CVN, DDG, LHD) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new construction platforms.</p> <p>The SEWIP Block 3 Acquisition leverages technology developed under the Office of Naval Research's (ONR) Integrated Topside (InTop) Science and Technology (S&amp;T) effort. SEWIP Block 3 will continue to expand the integrated shipboard combat system by providing a new integrated EA transmitter, array, and associated EA techniques. The AN/SLQ-32(V)7 integrates the new EA countermeasure (SEWIP Block 3) with the AN/SLQ-32(V)6. The AN/SLQ-32(V)6 includes an Electronic Support(ES) receiver (SEWIP Block 2), a High Gain High Sensitivity (HGHS) receiver (SEWIP Block 1B3), a Specific Emitter Identifier (SEI) receiver (SEWIP Block</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604757N I Ship Self Def (Engage: Soft Kill/EW)				
1B2), display console, and backend electronics. SEWIP Block 3 includes a government software development and integration effort for a SoftKill Coordinator (SKC) to manage EA engagements. SEWIP Block 3 is developing an Electronic Warfare Test Bed (EWTB) to validate system performance via modeling and simulation.						
The FY24 funding request for SEWIP Block 3 will focus on the conduct of TECHEVAL and Initial Operational Test & Evaluation (IOT&E). Additionally, training curriculum development, EWTB model upgrades, and development efforts will continue and increase for High Power Amplifier (HPA) efficiency to reduce required power and fuel consumption.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		65.307	92.687	93.096	-	93.096
Current President's Budget		64.200	97.537	125.206	-	125.206
Total Adjustments		-1.107	4.850	32.110	-	32.110
• Congressional General Reductions		-	-0.150			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	5.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.018	0.000			
• SBIR/STTR Transfer		-1.088	0.000			
• Program Adjustments		0.000	0.000	31.178	-	31.178
• Rate/Misc Adjustments		-0.001	0.000	0.932	-	0.932
Change Summary Explanation						
FY22 funding decrease of \$1.107M is due to a decrease for SBIR reductions (\$1.088M), miscellaneous rate adjustment reductions (\$0.001M), and reprogrammings (\$0.018M).						
FY23 increase is due to additional funding for shipboard EW self-protection (\$5M) and FFRDC reductions (\$0.150M).						
FY24 funding increase of \$32.110M is due to additional funding for Scaled Onboard Electronic Attack (\$31.178M) and an increase for rate/miscellaneous adjustments (\$0.932M).						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 0954 / Shipboard EW Improvement Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0954: Shipboard EW Improvement Program	83.902	15.384	20.432	53.503	-	53.503	68.521	44.645	17.632	17.753	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

0954 - The Surface Electronic Warfare Improvement Program (SEWIP) is segmented into Block 1A, Block 1B, Block 2, Block 3 and Soft Kill Coordination System (SKCS). Block 1A upgraded the AN/SLQ-32 pulse-processing computers. Block 1B added adjunct sensors, including Specific Emitter Identification (SEI), and High Gain High Sensitivity (HGHS) (Block 1B3), a critical improvement for extending the battle space. Block 2 enhanced Surface Electronic Warfare (EW) and provided improved Anti-Ship Missile Defense (ASMD) and situational awareness (SA) through an improved Electronic Support (ES) receiver, antenna, and combat system interface. The addition of Block 2 to Block 1B3 forms the AN/SLQ-32(V)6. Block 3 will provide an enhanced Onboard Electronic Attack (EA) capability to improve ASMD and counter-targeting. The addition of Block 3 to AN/SLQ-32(V)6 forms the AN/SLQ-32(V)7 system. The SKCS will provide SK weapon coordination and enhanced situational awareness to the AN/SLQ-32(V)6 and (V)7 with EW/radar track association to support Softkill (SK) engagement decisions. EW Rapid Capability Insertion Process (RCIP) identifies system and mission capability gaps by analyzing EW baseline and fleet requirements, prioritizes those gaps based on fleet input and critical technology maturity, and develops upgrades to the AN/SLQ-32(V) product line to address those gaps. RCIP also integrates Future Naval Capability (FNC) programs into SEWIP.

The FY24 budget request supports continued development, test and integration of SKCS with AEGIS Baseline (BL) 9 and BL 10, year four efforts for RCIP #7 which analyzes and designs hardware upgrades to improve signal throughput and system reliability, and continues RCIP #8 to improve anti-ship missile defense capability of SLQ-32(V)6/7 when operating with other netted EW sensors and effectors. RCIP #9 has been added in FY23 to initiate Shipboard EW Self-Protection improvements.

Scaled Onboard Electronic Attack (SOEA) is an incremental development program added by the USN to provide an advanced Electronic Attack (EA) capability against anti-ship missiles. SOEA will assimilate into the Surface Electronic Warfare Improvement Program (SEWIP) family of shipboard Electromagnetic Warfare systems. The program is intended to be scalable for Surface Combatants with size, weight, power, and cooling (SWaP-C) constraints that cannot support AN/SLQ-32(V)7 (SEWIP Block 3) installation. SOEA development executes under a Middle Tier Rapid Prototyping acquisition strategy pursuant to Section 804 of the FY16 National Defense Authorization Act.

SOEA's acquisition strategy for the first increment consists of two phases: Preliminary Prototyping and Integrated System Development. The first phase includes prototyping of critical technology elements (CTEs) via the Defense Microelectronics Agency (DMEA) to prove out and validate critical performance capability, system architecture functionality, and supportability requirements. The second phase will utilize a competitive, Other Transaction Authority (OTA) contract to build on the CTEs, incorporate design modularity, establish critical external interfaces for system and platform integration, and complete software development. Phase 2 will deliver integrated Engineering Development Models (EDMs) to a Land Based Test Site (LBTS) and rapid field initial Production Representative Units (PRUs).

The SOEA Middle Tier Acquisition (MTA) leverages technology developed by the Office of Naval Research's (ONR) and Naval Research Laboratory (NRL).

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)	Project (Number/Name) 0954 / Shipboard EW Improvement Program				
SOEA will continue to expand the integrated shipboard combat system by providing new integrated EA capability. SOEA will be integrated with AN/SLQ-32(V)6. SOEA includes a government software development and integration effort for a Soft-Kill Coordinator System (SKCS) to manage EA engagements. SOEA will leverage and expand the Electronic Warfare Test Bed (EWTB) developed under SEWIP Block 3.						
The FY24 budget request for SOEA includes procurement of preliminary prototypes to prove out and validate critical performance capability, system architecture functionality, and supportability requirements. Funding also supports failure mode analyses and platform integration studies, as well as initiation activities for the second phase of development.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Scaled Onboard Electronic Attack (SOEA)		0.000	0.000	38.178	0.000	38.178
Articles:		-	-	-	-	-
FY 2023 Plans: N/A						
FY 2024 Base Plans: - Complete Middle Tier Acquisition (MTA) Designation #1 Documentation - Conduct MTA Designation Review #1 - Award multiple Defense Microelectronics Agency (DMEA) contracts to prototype critical technology elements (CTEs) - Commence test planning to collect evidence for verification of requirements - Commence platform integration studies - Commence modularity specifications development - Commence technical and contractual planning for Phase 2 system development and FY25 Other Transaction Authority (OTA) award - Commence MTA Phase 1 preliminary prototypes to prove out and validate critical performance capability, system architecture functionality, and supportability requirements.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The FY24 increase is due to the Scaled Onboard Electronic Attack (SOEA) being established and funded starting in FY24. USN added the SOEA development to PU 0954 beginning in FY24 to address the requirement to provide an advanced Electronic Attack (EA) capability against anti-ship missiles for Surface Combatants with						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)		Project (Number/Name) 0954 / Shipboard EW Improvement Program		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
size, weight, power, and cooling (SWaP-C) constraints that cannot support AN/SLQ-32(V)7 (SEWIP Block 3) installation.						
Title: Electronic Warfare Rapid Capability Insertion Process (EW RCIP)		15.384	20.432	15.325	0.000	15.325
Articles:		-	-	-	-	-
FY 2023 Plans:						
- Continue RCIP #4 SKCS (Soft-kill Coordination System) efforts to address platform gaps for automatic and semi-automatic engagements using Nulka decoys, onboard Electronic Attack (EA) (AN/SLQ-32 (V)7), and offboard EA systems; Continue and complete software development and system integration and testing activities for delivery of completed software builds with capabilities including coordination of Nulka and combination engagements with AN/SLQ-32(V)6, AN/SLQ-32(V)7, and offboard EW for enhanced coordination technique deployment; Continue integration and testing activities in support of AEGIS ACB 20 (Baseline 10) by participating in AEGIS ACB 20 integration events and preparing a fully tested software build for element certification; Complete SKCS Factory Qualification Testing (FQT) for a software build in support of AN/SLQ-32(V)6 FQT, and continue to participate in system integration events with AN/ SLQ-32(V)6, AN/SLQ-32(V)7 and Offboard EW; Continue SSDS ACB 20, Offshore Patrol Cutter (OPC), and Constellation-class Frigate (FFG X) integration support efforts. Continue development of SKCS automated software test lab using cloud computing resources.						
- Continue SEWTT development of trainer enhancements including additional SKCS, and Offboard EW capabilities; Initiate development of trainer enhancements for SLQ-32(V)7's Onboard EA. Complete testing, integration, and documentation of the enhanced trainer and update associated training materials.						
- In support of the Propagation Channel Assessment and Prediction (PCAP) FNC transition, complete software development activities for an AN/SLQ-32(V)6 Signal Nominal Range (SNR) Tool including coding of a Tactical Computer Software Configuration Item (CSCI) for the SEWIP program to include the SNR tool functionality into the EW operator tactical interfaces. PCAP capability was successfully demonstrated at July 2022 RIMPAC event. Environmental propagation effects were successfully generated. AIS and ADS-B tracks were properly displayed and correlated to SLQ-32 tracks.						
- Continue RCIP #7 HW Processing & Reliability improvements which focus on increasing the AN/SLQ-32(V)6 operator's tactical situational awareness and confidence in both system performance and availability; Evaluate the current state of system components and analyze candidate hardware upgrades to increase system emitter processing throughput, reduce false detections/classifications, increase system fault tolerance and simplify maintenance. Develop a system product baseline in preparation for implementation of a system prototype.						

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Initiate collaborative development with the SLQ-32 Signal Identification Improvement (SI2) Future Naval Capability (FNC).</p> <ul style="list-style-type: none"> <li>- Continue RCIP #8 Netted Electronic Warfare Directed Engagement Logic (NEWDEL) improvements to the AN/SLQ-32(V)6 and AN/SLQ-32(V)7 to improve EW operator control and awareness of EW assets connected via tactical data links. Develop a Tactical Computer Software Configuration Item (CSCI) for the AN/SLQ-32(V)6 and (V)7 to monitor and control netted EW assets for improved anti-ship missile defense performance.</li> <li>- Identify additional EW technology shortfalls and capability gaps based on the current and emerging Anti-Ship Missile (ASM) threats and fleet requirements; Solicit industry, University Affiliate Research Centers or government activities for technical solutions; Evaluate and select RCIP technology candidates; Evaluate RCIP technologies production readiness; Develop execution plans for selected candidates based on evaluated readiness and countermeasure technology prioritization.</li> <li>- Initiate RCIP #9 Shipboard EW Self-Protection improvements against Anti-Ship Missiles (ASMs). Leverage previous Navy and industry investments in successful technology developments and enhance the industrial capacity to tailor relevant technology to provide EW capacity and capability needs to counter emerging threats.</li> </ul> <p><b><i>FY 2024 Base Plans:</i></b></p> <ul style="list-style-type: none"> <li>- Continue RCIP #4 SKCS efforts to address platform gaps for automatic and semi-automatic engagements using Nulka decoys, onboard Electronic Attack (EA) (AN/SLQ-32 (V)7), and offboard EA systems; Continue and complete software development and system integration and testing activities for delivery of completed software builds with capabilities including coordination of Nulka and combination engagements with AN/SLQ-32(V)6, AN/SLQ-32(V)7, and offboard EW for enhanced coordination technique deployment; Continue integration and testing activities in support of AEGIS ACB 20 (Baseline 10) by participating in AEGIS ACB 20 integration events and preparing a fully tested software build for element certification; Complete SKCS FQT for a software build in support of AN/SLQ-32(V)6 FQT, and continue to participate in system integration events with AN/ SLQ-32(V)6, AN/SLQ-32(V)7 and Offboard EW; Continue SSDS ACB 20, OPC, and FFG(X) integration support efforts. Continue development of SKCS automated software test lab using cloud computing resources.</li> <li>- Continue SEWTT development of trainer enhancements including additional SKCS, and Offboard EW capabilities; Continue development of trainer enhancements for SLQ-32(V)7's Onboard EA.</li> <li>- Continue RCIP #7 HW Processing &amp; Reliability improvements which focus on increasing the AN/SLQ-32(V)6 operator's tactical situational awareness and confidence in both system performance and availability; Evaluate the current state of system components and analyze candidate hardware upgrades to increase system emitter processing throughput, reduce false detections/classifications, increase system fault tolerance and simplify</li> </ul>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 0954 / Shipboard EW Improvement Program			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
maintenance. Develop a system product baseline in preparation for implementation of a system prototype. Initiate collaborative development with the SLQ-32 Signal Identification Improvement (SI2) FNC. - Continue RCIP #8 Netted Electronic Warfare Directed Engagement Logic (NEWDEL) improvements to the AN/SLQ-32(V)6 and AN/SLQ-32(V)7 to improve EW operator control and awareness of EW assets connected via tactical data links. Develop a Tactical Computer Software Configuration Item (CSCI) for the AN/SLQ-32(V)6 and (V)7 to monitor and control netted EW assets for improved anti-ship missile defense performance. - Identify additional EW technology shortfalls and capability gaps based on the current and emerging Anti-Ship Missile (ASM) threats and fleet requirements; Solicit industry, University Affiliate Research Centers or government activities for technical solutions; Evaluate and select RCIP technology candidates; Evaluate RCIP technologies production readiness; - Develop execution plans for selected candidates based on evaluated readiness and countermeasure technology prioritization. - Complete RCIP #9 Shipboard EW Self-Protection improvements against Anti-Ship Missiles (ASMs).  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 is due to reduction in tasking that better aligns with Navy priorities.											
Accomplishments/Planned Programs Subtotals							15.384	20.432	53.503	0.000	53.503
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/2312: OPN BA-2 AN/SLQ-32(V)	313.817	292.417	329.513	-	329.513	278.251	513.853	594.041	606.214	3,871.034	8,905.177
• OMN PE 0204575N: OMN BA-1 AN/SLQ-32(V)	4.337	4.741	4.979	-	4.979	5.043	5.370	5.476	5.586	Continuing	Continuing
Remarks											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604757N / <i>Ship Self Def (Engage: Soft Kill/EW)</i>	<b>Project (Number/Name)</b> 0954 / <i>Shipboard EW Improvement Program</i>

**D. Acquisition Strategy**

RCIP matures, develops and validates technology solutions to address requirements gaps for insertion into SEWIP Block upgrades. Technology solutions result in Government owned technical data packages with Government owned data rights. Solutions are incorporated into the SEWIP Block technical data packages for incorporation into production and/or back-fit of fielded systems. Acquisition strategy supports full and open completion for technical solutions.

SOEA development executes under a middle tier rapid prototyping acquisition strategy pursuant to Section 804 of the FY16 National Defense Authorization Act. The acquisition strategy for SOEA is based on the validated SOEA Top Level Requirements (TLR) document and ASN(RDA) Middle Tier Acquisition and Acquisition Agility Interim Guidance Update Memorandum (10 Jan 2019) and will be finalized with successful completion of an Acquisition Decision Memorandum (ADM) for Middle Tier of Acquisition (MTA) Rapid Prototyping Designation in the Q1FY24.

To accomplish the SOEA development, Defense Microelectronics Agency (DMEA) contracting and Other Transaction Authority (OTA) agreements will be utilized for system development by one or more vendors in a cooperative acquisition approach with the Office of Naval Research (ONR), Naval Research Laboratory (NRL) and industry partners. SOEA acquisition leverages technology developed by the Office of Naval Research's (ONR) and Naval Research Laboratory (NRL).



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 0954 / Shipboard EW Improvement Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RCIP #4 SKCS	SS/CPFF	JHU APL : Laurel, MD	9.971	2.061	Nov 2021	1.830	Feb 2023	1.794	Dec 2023	-		1.794	Continuing	Continuing	Continuing
RCIP #4 SKCS	WR	NSWC Dahlgren : Dahlgren, VA	20.675	4.912	Nov 2021	4.866	Oct 2022	5.012	Nov 2023	-		5.012	Continuing	Continuing	Continuing
RCIP #5 TACSIM	WR	NSWC Dahlgren : Dahlgren, VA	5.310	0.224	Nov 2021	0.000		0.000		-		0.000	0.000	5.534	-
SEWTT Development	SS/CPFF	EWA : Fairmont, WV	1.770	0.549	Sep 2022	0.242	Dec 2022	0.249	Nov 2023	-		0.249	Continuing	Continuing	Continuing
CESARS	WR	NRL : Washington, DC	1.411	0.000	May 2022	0.000		0.000		-		0.000	0.000	1.411	-
PCAP	WR	NRL : Washington DC	0.527	0.116	May 2022	0.025	Mar 2023	0.000		-		0.000	0.000	0.668	-
PCAP	C/CPFF	LM : Syracuse, NY	0.570	0.166	May 2022	0.025	Mar 2023	0.000		-		0.000	0.000	0.761	-
RCIP #7 HW Processing & Reliability Improvements	C/CPFF	LM : Syracuse, NY	2.480	3.546	Jan 2022	4.202	Oct 2022	3.180	Nov 2023	-		3.180	Continuing	Continuing	Continuing
AN/SLQ-32(V)6 and (V)7 SW Algorithm Enhancements	MIPR	MIT : Hanscom AFB, MA	0.976	0.328	Jan 2022	0.000		0.000		-		0.000	0.000	1.304	-
RCIP #4 SKCS	C/CPFF	IDT : San Jose, CA	0.350	0.251	Nov 2021	0.229	Feb 2023	0.100	Apr 2024	-		0.100	Continuing	Continuing	Continuing
RCIP #8 Netted EW Improvements	SS/CPFF	JHU APL : Laurel, MD	0.000	0.000		0.230	Feb 2023	0.496	Dec 2023	-		0.496	Continuing	Continuing	Continuing
RCIP #8 Netted EW Improvements	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.542	Oct 2022	0.983	Nov 2023	-		0.983	Continuing	Continuing	Continuing
RCIP#9 Shipboard EW Self-Protection Improvements	C/FFP	Cobham : Dorset, England, UK	0.000	0.000		5.000	Apr 2023	0.000		-		0.000	0.000	5.000	-
SOEA Rapid Prototype Development #1	SS/FFP	TBD : TBD	0.000	0.000		0.000		9.071	Apr 2024	-		9.071	0.000	9.071	-
SOEA Rapid Prototype Development #2	SS/FFP	TBD : TBD	0.000	0.000		0.000		9.072	May 2024	-		9.072	0.000	9.072	-
SOEA Rapid Prototype Development #3	SS/FFP	TBD : TBD	0.000	0.000		0.000		9.071	Apr 2024	-		9.071	0.000	9.071	-
Subtotal			44.040	12.153		17.191		39.028		-		39.028	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 0954 / Shipboard EW Improvement Program					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
- In FY23, RCIP #8 is initiating for Netted Electronic Warfare Directed Engagement Logic (NEWDEL). - Increase in RCIP #8 from FY23 to FY24 is due to additional tasking for the design, build and integration of the Netted Electronic Warfare Directed Engagement Logic (NEWDEL) Computer Software Configuration Item (CSCI) for the AN/SLQ-32(V)6 and (V)7. - Decrease in RCIP #7 from FY23 to FY24 is due to a shift in the start of qualification testing during original equipment manufacturer (OEM) product development to Q2 of FY25. - RCIP #9 has been added in FY23 to initiate Shipboard EW Self-Protection improvements. - Increase from FY23 to FY24 is due to the start of SOEA in FY24. Funding supports the middle tier rapid prototyping strategy for the procurement of preliminary prototypes to prove out and validate critical performance capability, system architecture functionality, and supportability requirements. Funding also supports failure mode analyses and platform integration studies, as well as initiation activities for the second phase of development.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 1 Government Engineering Support	WR	NSWC Dahlgren : Dahlgren, VA	8.199	0.180	Nov 2021	0.192	Nov 2022	0.198	Nov 2023	-		0.198	Continuing	Continuing	Continuing
Block 1 Government Engineering Support	WR	NSWC Crane : Crane, IN	6.764	0.487	Dec 2021	0.438	Nov 2022	0.451	Nov 2023	-		0.451	Continuing	Continuing	Continuing
Block 1 Government Engineering Support	WR	NRL : Washington, DC	4.517	0.000		0.000		0.000		-		0.000	0.000	4.517	Continuing
Block 1 Government Engineering Support	SS/CPFF	APL : Laurel, MD	4.048	0.265	Nov 2021	0.287	Nov 2022	0.296	Nov 2023	-		0.296	Continuing	Continuing	Continuing
Block 1 Government Engineering Support	MIPR	MIT : Hanscom AFB, MA	3.420	0.669	Jan 2022	0.598	Nov 2022	0.687	Nov 2023	-		0.687	Continuing	Continuing	Continuing
Block 1 Government Engineering Support	MIPR	DISA : Fort Meade, MD	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	-
SOEA Integrated Logistics Support	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.250	Nov 2023	-		0.250	0.000	0.250	-
SOEA Systems Engineering Support	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.500	Nov 2023	-		0.500	0.000	0.500	-
SOEA Systems Engineering Support	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.000		1.000	Nov 2023	-		1.000	0.000	1.000	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)						<b>Project (Number/Name)</b> 0954 / Shipboard EW Improvement Program			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
SOEA Systems Engineering Support	WR	NRL : Washington, DC	0.000	0.000		0.000		5.984	Oct 2023	-		5.984	0.000	5.984	-
SOEA Systems Engineering Support	SS/CPFF	APL : Laurel, MD	0.000	0.000		0.000		1.000	Nov 2023	-		1.000	0.000	1.000	-
SOEA Platform Integration Studies	C/BA	TBD : Not Specified	0.000	0.000		0.000		0.500	Nov 2023	-		0.500	0.000	0.500	-
<b>Subtotal</b>			26.998	1.601		1.515		10.866		-		10.866	Continuing	Continuing	N/A
<b>Remarks</b> - FY23 to FY24 increase supports the Middle Tier Acquisition strategy to procure prototypes, awarding Defense Microelectronics Agency (DEMA) contracts, starting platform integration studies, starting modularity specification development, technical and contract planning for Phase 2 of the SOEA development.															
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	NSWC Dahlgren : Dahlgren, VA	3.623	0.429	Nov 2021	0.455	Nov 2022	0.799	Nov 2023	-		0.799	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	0.889	0.000		0.000		0.230	Nov 2023	-		0.230	0.000	1.119	-
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	2.476	0.000		0.000		0.500	Nov 2023	-		0.500	0.000	2.976	-
Developmental Test & Evaluation (DT&E)	SS/CPFF	APL : Laurel, MD	0.100	0.000		0.251	Nov 2022	0.559	Nov 2023	-		0.559	0.000	0.910	-
Developmental Test & Evaluation (DT&E)	WR	COMOPTEVFOR : Norfolk, VA	0.104	0.178	Nov 2022	0.000		0.050	Nov 2023	-		0.050	0.000	0.332	-
<b>Subtotal</b>			7.192	0.607		0.706		2.138		-		2.138	Continuing	Continuing	N/A
<b>Remarks</b> - FY23 to FY24 increase is due to cost for hardware and recurring software license upgrades to the Softkill Coordination Subsystem integration and test laboratory at NSWC Dahlgren. These upgrades are necessary to maintain compatibility with the combat system. - Test and evaluation increase from FY23 to FY24 is due to the start of SOEA development efforts. Increase is for SOEA test planning and for verification of requirements. Total SOEA and RCIP/Block 1 costs per activity are reflected in FY24.															

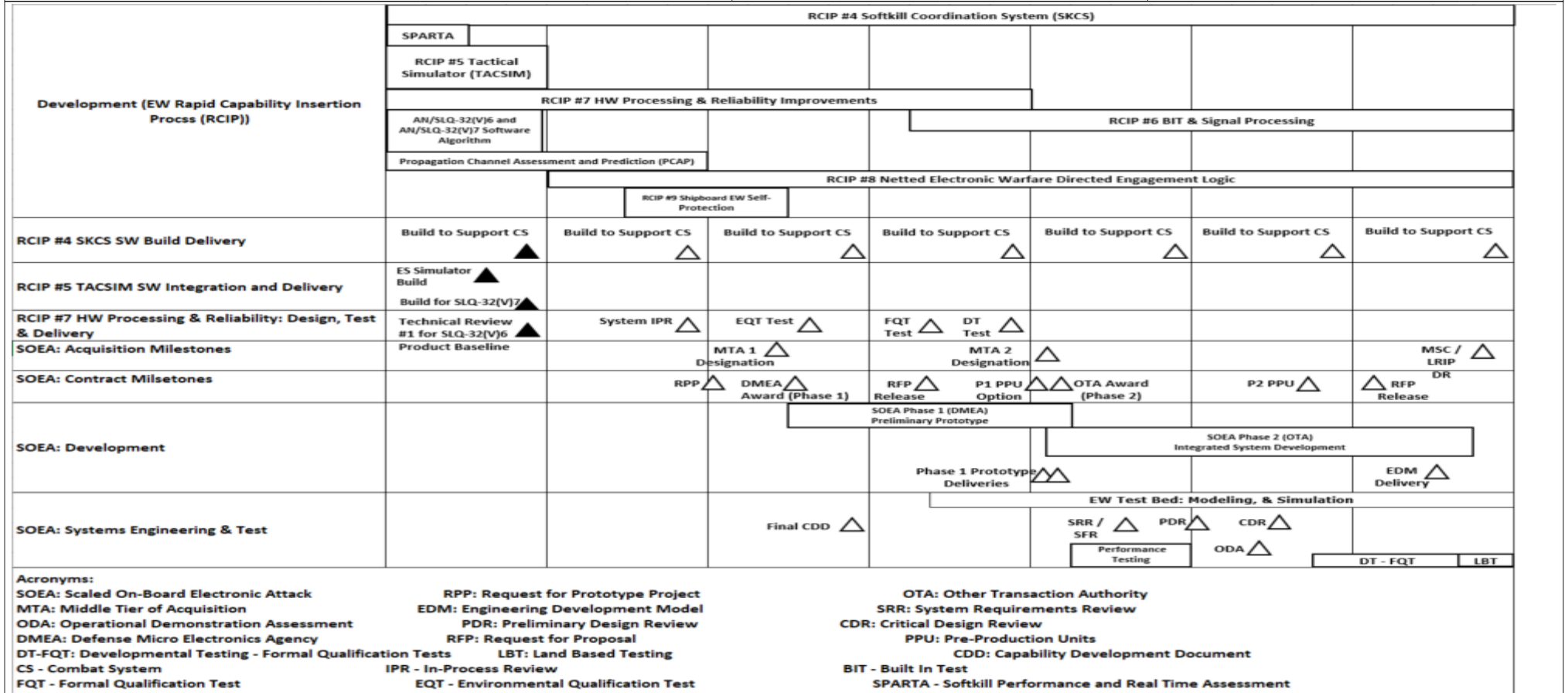
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 0954 / Shipboard EW Improvement Program					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 1 Program Management Support	C/CPIF	TMB (SEAPORT) : Washington, D.C.	1.698	0.000		0.405	Mar 2023	0.417	Nov 2023	-		0.417	Continuing	Continuing	Continuing
Block 1 Program Management Support	C/CPIF	SPA (SEAPORT) : Washington, DC	1.606	0.818	Jan 2022	0.385	Nov 2022	0.397	Nov 2023	-		0.397	Continuing	Continuing	Continuing
Block 1 Program Management Support	C/CPIF	CACI (SEAPORT) : Washington, DC	0.962	0.000		0.000		0.000		-		0.000	0.000	0.962	-
Block 1 Travel	WR	NAVSEA Program Office Travel : Washington, DC	1.406	0.005	Sep 2022	0.020	Jan 2023	0.021	Nov 2023	-		0.021	Continuing	Continuing	Continuing
Block 1 Program Management Support	C/CPIF	BAH (SEAPORT) : Washington, DC	0.000	0.200	Jun 2022	0.210	Mar 2023	0.216	Nov 2023	-		0.216	0.000	0.626	-
SOEA Program Management	C/CPFF	SPA (SEAPORT) : Washington, DC	0.000	0.000		0.000		0.250	Nov 2023	-		0.250	0.000	0.250	-
SOEA Program Management	C/CPFF	TBD BFM Support (SEAPORT) : TBD	0.000	0.000		0.000		0.150	Nov 2023	-		0.150	0.000	0.150	-
SOEA Program Management.	WR	NAVSEA Program Office Travel : Washington, DC	0.000	0.000		0.000		0.020	Nov 2023	-		0.020	0.000	0.020	-
Subtotal			5.672	1.023		1.020		1.471		-		1.471	Continuing	Continuing	N/A
Remarks															
- Increase in management services from FY23 to FY24 is due to additional requirements for SOEA starting in FY24. Increase supports SOEA verification of requirements, platform integration studies, specification development and financial management.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			83.902	15.384		20.432		53.503		-		53.503	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)	<b>Project (Number/Name)</b> 0954 / Shipboard EW Improvement Program
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- Since the FY23 Budget Request, RCIP #7 FQT (Formal Qualification Test) has shifted from Q4 FY24 to Q2 of FY25.  
 - Since the FY23 Budget Request, RCIP #7 DT Test (Development Testing) has been added to the schedule, and commences in Q4 of FY25.  
 - Since the FY23 Budget Request, RCIP #4, #6 and #8 will continue through the FYDP.  
 - Since the FY23 Budget Request, RCIP #9 Shipboard EW Self-Protection has been added to the schedule, and commences in Q3 of FY23.  
 - Since the FY23 Budget Request, Scaled Onboard EA has been added to the schedule, and commences in Q1 of FY24.

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)

## Project (Number/Name)

0954 / Shipboard EW Improvement Program

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0954</b>				
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): EW Rapid Capability Insertion Process (RCIP)	1	2022	4	2028
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #4: SKCS	1	2022	4	2028
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): Softkill Performance and Real-Time Assessment (SPARTA)	1	2022	2	2022
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #5 TACSIM	1	2022	4	2022
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): AN/SLQ-32(V)6 and AN/SLQ-32(V)7 Software Algorithm Enhancements	1	2022	4	2022
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): Propagation Channel Assessment and Prediction (PCAP)	1	2022	4	2023
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #4 SKCS SW Build Delivery	1	2022	4	2028
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #5 TACSIM SW Integration and Delivery	1	2022	4	2022
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #7: HW Processing & Reliability Improvements	2	2022	4	2025
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #7: HW Processing & Reliability Improvements - System Prototype Delivery	4	2022	4	2025
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #8 Netted Electronic Warfare Directed Engagement Logic (NEWDEL)	1	2023	4	2028
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #6: BIT and Signal Processing	2	2025	4	2028
Electronic Warfare Rapid Capability Insertion Process (EW RCIP): RCIP #9 Shipboard EW Self-Protection	3	2023	2	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)		Project (Number/Name) 0954 / Shipboard EW Improvement Program	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Scaled Onboard Electronic Attack (SOEA): Request for Prototype Project (RPP)		1	2024	2	2024
Scaled Onboard Electronic Attack (SOEA): Middle Tier Acquisition Phase 1 Designation		2	2024	2	2024
Scaled Onboard Electronic Attack (SOEA): Defense Micro Electronics Agency (DMEA) Contract		3	2024	1	2026
Scaled Onboard Electronic Attack (SOEA): EW Test Bed Modeling & Simulation		2	2025	4	2028
Scaled Onboard Electronic Attack (SOEA): Preliminary Prototype Deliveries		1	2026	1	2026
Scaled Onboard Electronic Attack (SOEA): Middle Tier Acquisition Phase 2 Designation		1	2026	1	2026
Scaled Onboard Electronic Attack (SOEA): Other Transactional Authority (OTA) Phase 2 Contract		1	2026	3	2028
Scaled Onboard Electronic Attack (SOEA): MTA Phase 1 Pre-Production Prototype Procurement Option Award		1	2026	1	2026
Scaled Onboard Electronic Attack (SOEA): MTA Phase 1 Performance Testing		2	2026	4	2026
Scaled Onboard Electronic Attack (SOEA): MTA Phase 2 System Requirements Review (SRR)/ System Functional Review (SFR)		3	2026	3	2026
Scaled Onboard Electronic Attack (SOEA): MTA Phase 2 Preliminary Design Review (PDR)		1	2027	1	2027
Scaled Onboard Electronic Attack (SOEA): MTA Phase 1 Operational Demonstration Assessment (ODA)		2	2027	2	2027
Scaled Onboard Electronic Attack (SOEA): MTA Phase 2 Critical Design Review (CDR)		3	2027	3	2027
Scaled Onboard Electronic Attack (SOEA): MTA Phase 2 Pre-Production Units Option Award		3	2027	3	2027
Scaled Onboard Electronic Attack (SOEA): Milestone C / LRIP DR		4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 2190 / NULKA Decoy			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2190: NULKA Decoy	57.343	6.667	6.211	5.326	-	5.326	6.087	5.667	6.017	5.769	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Offboard Active Decoy (Nulka) is a joint cooperative program between the United States and Australia that developed an active offboard decoy that utilizes a broadband radio frequency repeater mounted atop a hovering rocket. Nulka counters a wide variety of present and future radar guided Anti-Ship Missiles (ASMs) by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket.

The FY24 budget request includes Decoy Launcher Processor (DLP) technology refresh to address threat studies as well as address obsolescence issues. The Objective Architecture development will continue which provides improved Nulka decoy deployment as well as Soft Kill Coordination System (SKCS) integration.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> NULKA Decoy Subsystem	6.667	6.211	5.326	0.000	5.326
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Continue engineering and effectiveness studies to evaluate new and existing threats; update Fly-Out Tactics table for specific platforms (as appropriate)</li> <li>- Continue to develop and test new Nulka library files to support new platforms with SKCS (as appropriate)</li> <li>- Continue DLP technology refresh to design and develop hardware obsolescence solutions</li> <li>- Support Nulka Objective Architecture integration with SKCS</li> <li>- Complete the development and test of Decoy Launch Controller (DLC)</li> <li>- Continue to develop and test Nulka Launch Management (NLMt) to support the Nulka Objective Architecture</li> <li>- Complete Factory Qualification Testing (FQT) to improve employment of Nulka system</li> </ul>					
<b>FY 2024 Base Plans:</b> <ul style="list-style-type: none"> <li>- Continue engineering and effectiveness studies to evaluate new and existing threats; update Fly-Out Tactics table for specific platforms (as appropriate)</li> <li>- Continue to develop and test new Nulka library files to support new platforms with SKCS (as appropriate)</li> <li>- Continue DLP technology refresh to design and develop hardware obsolescence solutions</li> <li>- Continue to support Nulka Objective Architecture integration with SKCS</li> </ul>					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 2190 / NULKA Decoy			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
- Continue to develop Nulka Launch Management (NLMt) to support the Nulka Objective Architecture											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: FY23 to FY24 decrease is due to reduction in Nulka Decoy development in order to fund higher Navy priorities.											
Accomplishments/Planned Programs Subtotals						6.667	6.211	5.326	0.000	5.326	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/5530: Anti-Ship Missile Decoy System	76.994	86.264	56.630	-	56.630	80.039	93.436	129.073	131.621	942.752	1,706.317
• OMN/11CD0 (1C1C): NULKA	7.248	7.849	8.262	-	8.262	8.188	8.205	8.372	8.542	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Nulka is a joint cooperative program between United States and Australia.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)						Project (Number/Name) 2190 / NULKA Decoy			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NRL : Washington, DC	24.585	1.782	Nov 2021	1.854	Oct 2022	1.761	Nov 2023	-		1.761	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC Dahlgren : Dahlgren, VA	19.407	3.431	Oct 2021	3.510	Jan 2023	2.867	Nov 2023	-		2.867	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC Crane : Crane, IN	10.341	0.971	Oct 2021	0.371	Oct 2022	0.297	Nov 2023	-		0.297	Continuing	Continuing	Continuing
Subtotal			54.333	6.184		5.735		4.925		-		4.925	Continuing	Continuing	N/A
Remarks FY23 to FY24 decreased funding is due to reduction in Nulka Decoy development to fund higher Navy priorities.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPIF	ICI (SEAPORT) : Washington, DC	0.323	0.000		0.000		0.000		-		0.000	0.000	0.323	-
Program Management Support	C/CPIF	TMB (SEAPORT) : Washington, DC	0.677	0.136	Jun 2022	0.139	Feb 2023	0.116	Nov 2023	-		0.116	Continuing	Continuing	Continuing
Program Management Support	C/CPIF	SPA (SEAPORT) : Washington, DC	1.287	0.322	Jun 2022	0.329	Feb 2023	0.275	Nov 2023	-		0.275	Continuing	Continuing	Continuing
Travel	Allot	NAVSEA Program Office Travel : Washington, DC	0.723	0.025	Aug 2022	0.008	Feb 2023	0.010	Nov 2023	-		0.010	Continuing	Continuing	Continuing
Subtotal			3.010	0.483		0.476		0.401		-		0.401	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			57.343	6.667		6.211		5.326		-		5.326	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023																
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)								Project (Number/Name) 2190 / NULKA Decoy								
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Development	Threat Assessment Updates																											
	DLP Tech Refresh																											
	DLPP 6_9																											
	Nulka Objective Architecture																											
Test & Evaluation	DLMC Development																											
	DLMC FQT																											
	DLMC EQT																											

Acronyms: DLMC - Decoy Launch Message Convertor; DLP - Decoy Launch Processor; DLPP - Decoy Launch Processor Program; EQT - Environmental Qualification Testing; FQT - Factory Qualification Testing

Note: DLMC FQT completion delayed from Q4 FY22 to Q1 FY23 due to circuit card production delays.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)	Project (Number/Name) 2190 / NULKA Decoy	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2190				
Threat Assessment Updates	1	2022	4	2028
Decoy Launch Processor (DLP) Tech Refresh	1	2022	4	2028
Decoy Launch Processor Program (DLPP 6_9)	1	2022	4	2022
Nulka Objective Architecture	1	2022	4	2028
Decoy Launch Message Convertor (DLMC) Development	1	2022	4	2022
DLMC Facotry Qualification Testing (FQT)	1	2022	1	2023
DLMC Environmental Qualification Testing (EQT)	2	2022	4	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 3068 / Long Endurance Electronic Decoy (LEED)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3068: Long Endurance Electronic Decoy (LEED)	0.000	10.637	38.363	39.364	-	39.364	35.330	22.625	22.619	23.007	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

This project is a new start in FY 2022

**A. Mission Description and Budget Item Justification**

3068 - The Long Endurance Electronic Decoy (LEED) program will deliver an expendable long endurance autonomous off-board decoy Countermeasure system, comprised of a flight vehicle and Radio Frequency (RF) payload with modular capability allowing for rapid modification of the Electronic Warfare (EW) payload. LEED development executes under a middle tier rapid prototyping acquisition strategy pursuant to Section 804 of the FY16 National Defense Authorization Act. LEED will integrate with SLQ-32 and address EW gaps in response to a fleet requirement to counter Anti-Ship Missile (ASM) threats. LEED will provide the fleet with enhanced EW coordination and capability, including the ability to stretch engagement timelines and counter heterogeneous missile attacks.

The overarching LEED strategy consists of two phases including a Middle Tier of Acquisition Rapid Prototyping (MTA RP) phase followed by Major Capability Acquisition. The MTA RP phase will include Preliminary and Integrated Countermeasure Prototype Development (FY21-FY25) and Integrated System Testing (FY24-FY25). The MTA RP phase includes the development and test of operational-level Countermeasure prototypes, launch systems, and control software that demonstrate and validate critical capabilities, including flight performance, control, and RF functionality. Data collected from the initial prototypes will be used to develop Engineering Development Models (EDMs) for Qualification Testing to support a Milestone C decision for Low Rate Initial Production (LRIP) as LEED enters the Major Capability Acquisition phase. LRIP will be executed under a follow-on production OTA and will include the procurement and fielding of production representative units for at-sea capability assessments (FY28) of the Countermeasure system, while LEED transitions to full production and sustainment.

LEED will be developed alongside the Office of Naval Research (ONR) Long Endurance Airborne Platform (LEAP) Project, which began in FY21. LEED will leverage technologies developed and matured under the ONR LEAP Project.

The FY24 budget request supports LEED countermeasure prototype final test demonstrations and integrated countermeasure development at the prime contractor, including material purchases, system/subsystem integration, integrated system demonstration testing and system performance testing.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Long Endurance Electronic Decoy (LEED)	10.637	38.363	39.364	0.000	39.364
<b>Articles:</b>	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)		Project (Number/Name) 3068 / Long Endurance Electronic Decoy (LEED)	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>FY 2023 Plans:</b> - Continue the first phase of LEED Countermeasure Development with development and testing of a LEED Countermeasure prototype. - Complete hardware purchases and execute non-recurring engineering design, software development, and contract support activities in order to develop, test and deliver a functional Countermeasure system that meets specified TPMs. - Develop test procedures and facilities to demonstrate Countermeasure prototype performance that meets specified TPMs, with a focus on RF performance and vehicle flight performance test procedures. - Conduct preliminary demonstration testing of the Countermeasure prototype to assess key risk areas against a subset of TPMs with a focus on RF functionality, and utilize results to inform final prototype development activities in preparation for formal Countermeasure Performance Testing. - Conduct the Countermeasure Critical Design Review (CDR). - Conduct formal Countermeasure Performance Testing to measure Countermeasure prototype performance against all TPMs and government approved requirements. - Integrate the payload and flight vehicle into a functional Countermeasure. - Continue developing preliminary concepts for a ship launch system, based on feasibility studies and Countermeasure development, for modification of an existing decoy ship launch system. - Continue developing modeling and simulation tools to support threat and countermeasure performance assessments. - Continue execution of an IPT to support requirements, systems engineering, testing, and product support: Coordinate and conduct government led testing events; Support the development of test procedures and testing facilities, monitor and engage in Prime Contractor performance, attend and provide technical support for Contractor-led testing events, and assess all testing outcomes for effectiveness; Utilize modeling and simulation tools to support threat and countermeasure performance assessments; Commence ship design and ship integration planning activities. - Initiate technical and contractual planning activities for integrated LEED Countermeasure development.					
<b>FY 2024 Base Plans:</b> - Complete LEED initial Countermeasure prototype development, including final testing. - Complete delivery of initial Countermeasure prototype. - Continue LEED Countermeasure development of Integrated Countermeasure prototypes. - Coordinate and conduct the System Critical Design Review (CDR). - Develop a detailed system design through the System CDR and update to Countermeasure CDR products.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)		<b>Project (Number/Name)</b> 3068 / Long Endurance Electronic Decoy (LEED)		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<ul style="list-style-type: none"> <li>- Perform spares analysis.</li> <li>- Develop a laboratory version of the payload.</li> <li>- Conduct formal testing to collect evidence for verification of requirements.</li> <li>- Initiate integration, testing, and checkout activities for the EDM Countermeasure, launcher subsystem, and integrated system testing.</li> <li>- Continue developing preliminary concepts for modification of an existing decoy ship launch system.</li> <li>- Continue developing modeling and simulation tools to support threat and countermeasure performance assessments.</li> <li>- Continue execution of an IPT to support requirements, systems engineering, testing, and product support: Coordinate and conduct government led testing events; Support the development of test procedures and testing facilities, monitor and engage in Prime Contractor performance, attend and provide technical support for Contractor-led testing events, and assess all testing outcomes for effectiveness; Utilize modeling and simulation tools to support threat and countermeasure performance assessments; Commence ship design and ship integration planning activities.</li> <li>- Continue technical and contractual planning activities for integrated LEED Countermeasure development.</li> <li>- Initiate planning and execution activities for the transition to major capability acquisition for initial production, including preparation for a milestone decision.</li> <li>- Develop Countermeasure tactics and SKCS control algorithms.</li> </ul> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase from FY23 to FY24 is due to the additional scope and complexity required for system integration and testing activities.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		10.637	38.363	39.364	0.000	39.364
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604757N / <i>Ship Self Def (Engage: Soft Kill/EW)</i>	<b>Project (Number/Name)</b> 3068 / <i>Long Endurance Electronic Decoy (LEED)</i>
<p><b><u>D. Acquisition Strategy</u></b></p> <p>LEED development executes under a middle tier rapid prototyping acquisition strategy pursuant to Section 804 of the FY16 National Defense Authorization Act. The acquisition strategy for LEED is based on the validated LEED Top Level Requirements document and ASN(RDA) Middle Tier Acquisition and Acquisition Agility Interim Guidance Update Memorandum (10 Jan 2019) and was finalized with successful completion of an Acquisition Decision Memorandum (ADM) for Middle Tier of Acquisition (MTA) Rapid Prototyping Designation in Q1FY23.</p> <p>To accomplish the LEED Countermeasure Development, Other Transaction Authority (OTA) agreements will be utilized for development by one or more vendors in a cooperative acquisition approach with the Office of Naval Research (ONR). ONR initiated technology maturation efforts in FY21 as part of their LEAP project, which LEED will capitalize on. The FY21 ONR efforts allowed for the matured technologies in LEAP to be leveraged sooner by LEED and support the overall LEED development and fielding timeline. The OTA agreement for initial Countermeasure development was awarded to Prime Contractor Lockheed Martin via NSWC Dahlgren Naval Surface Technology Innovation Consortium (NSTIC). This OTA agreement will be utilized through initial Countermeasure development, with the plan to use a follow-on production OTA for Low Rate Initial Production (LRIP), while transitioning to Major Capability Acquisition with a Milestone (MS) C Decision. LEED will use Federal Acquisition Regulation (FAR)-based contracting, within Major Capability Acquisition, for Full Rate Production (FRP).</p>		



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 3068 / Long Endurance Electronic Decoy (LEED)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LEED Rapid Development	C/CPFF	NSWC Dahlgren : Dahlgren, VA	0.000	9.326	Apr 2022	29.270	Oct 2022	29.320	Nov 2023	-		29.320	Continuing	Continuing	Continuing
Subtotal			0.000	9.326		29.270		29.320		-		29.320	Continuing	Continuing	N/A
Remarks															
- Performing Activity changed from Lockheed Martin to NSWC Dahlgren due to OTA agreement for initial Countermeasure development being awarded to Prime Contractor Lockheed Martin via NSWC Dahlgren Naval Surface Technology Innovation Consortium (NSTIC).															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Support	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.031	Apr 2022	0.401	Oct 2022	0.449	Nov 2023	-		0.449	Continuing	Continuing	Continuing
Technical Support	WR	NSWC Crane : Crane, IN	0.000	0.103	Apr 2022	0.967	Oct 2022	1.089	Nov 2023	-		1.089	Continuing	Continuing	Continuing
Technical Support	WR	NRL : Washington, DC	0.000	0.206	May 2022	1.057	Jan 2023	1.191	Nov 2023	-		1.191	Continuing	Continuing	Continuing
Systems Engineering Support	SS/CPFF	APL : Laurel, MD	0.000	0.129	May 2022	1.316	Dec 2022	1.482	Nov 2023	-		1.482	Continuing	Continuing	Continuing
Technical Support	MIPR	MT-LL : Boston, MA	0.000	0.000		0.987	Nov 2022	1.111	Nov 2023	-		1.111	Continuing	Continuing	Continuing
Subtotal			0.000	0.469		4.728		5.322		-		5.322	Continuing	Continuing	N/A
Remarks															
- FY23 to FY24 increase is due to continued ramp up of Government oversight and support of Prime Contractor Countermeasure development integration efforts.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	0.000	0.214	Apr 2022	1.057	Jan 2023	1.191	Nov 2023	-		1.191	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)						Project (Number/Name) 3068 / Long Endurance Electronic Decoy (LEED)					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	0.000	0.026	Apr 2022	0.967	Jan 2023	1.089	Nov 2023	-		1.089	Continuing	Continuing	Continuing		
Developmental Test & Evaluation (DT&E)	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.401	Jan 2023	0.452	Nov 2023	-		0.452	Continuing	Continuing	Continuing		
Developmental Test & Evaluation (DT&E)	WR	OPTEVFOR : Norfolk, VA	0.000	0.000		0.000		0.050	Nov 2023	-		0.050	0.000	0.050	-		
Subtotal			0.000	0.240		2.425		2.782		-		2.782	Continuing	Continuing	N/A		
Remarks																	
- FY23 to FY24 increase is due to continued ramp up of Government oversight and support of prime contractor test events and demonstrations.																	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Management Support	C/CPIF	TMB (SEAPORT) : Washington, DC	0.000	0.281	Apr 2022	0.950	Mar 2023	0.950	Nov 2023	-		0.950	Continuing	Continuing	Continuing		
Program Management Support	C/CPIF	SPA (SEAPORT) : Washington, DC	0.000	0.281	Apr 2022	0.950	Mar 2023	0.950	Nov 2023	-		0.950	Continuing	Continuing	Continuing		
Travel	Sub Allot	NAVSEA Program Office : Washington, DC	0.000	0.040	Apr 2022	0.040	Mar 2023	0.040	Nov 2023	-		0.040	Continuing	Continuing	Continuing		
Subtotal			0.000	0.602		1.940		1.940		-		1.940	Continuing	Continuing	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.000	10.637		38.363		39.364		-		39.364	Continuing	Continuing	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

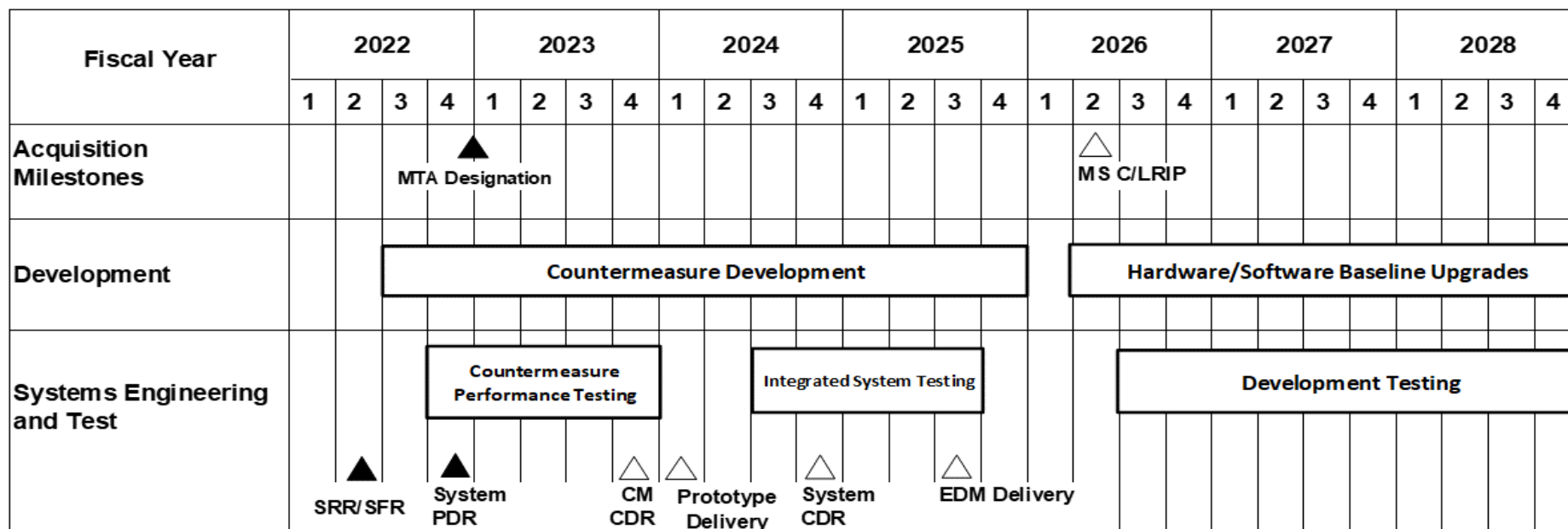
1319 / 5

R-1 Program Element (Number/Name)

PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)

Project (Number/Name)

3068 / Long Endurance Electronic Decoy (LEED)



Acronyms: CDR - Critical Design Review; CM - Countermeasure; EDM - Engineering Development Model; LRIP - Low-Rate Initial Production; MS - Milestone; MTA - Middle Tier Acquisition; PDR - Preliminary Design Review; SFR - System Functional Review; SRR - System Requirements Review

## Notes:

MTA designation shifted from Q3 FY22 to Q1 FY23 due to late release of FY22 funds. CM CDR shifted two quarters, Prototype Delivery shifted one quarter and the Integrated System Testing now starts in FY24. These schedule changes are based on current established OTA (awarded Q4FY21) and alignment with the Prime Contractor's current Integrated Master Schedule (IMS). Removed Phase 2 and 3 Awards to align with countermeasure development completing under the current established developmental OTA awarded to Lockheed Martin via NSWC Dahlgren Naval Surface Technology Innovation Consortium (NSTIC).

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604757N / <i>Ship Self Def (Engage: Soft Kill/EW)</i>	<b>Project (Number/Name)</b> 3068 / <i>Long Endurance Electronic Decoy (LEED)</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 3068</i></b>				
System Requirements Review (SRR)/System Functional Review (SFR)	2	2022	2	2022
Countermeasure Development	3	2022	4	2025
Countermeasure Performance Testing	4	2022	4	2023
System Preliminary Design Review (PDR)	4	2022	4	2022
Middle Tier Acquisition (MTA) Designation	1	2023	1	2023
Countermeasure Critical Design Review (CDR)	4	2023	4	2023
Prototype Delivery	1	2024	1	2024
Integrated System Testing	3	2024	3	2025
System Critical Design Review (CDR)	4	2024	4	2024
Engineering Development Model (EDM) Delivery	3	2025	3	2025
MS C / LRIP	2	2026	2	2026
Hardware/Software Baseline Updates	2	2026	4	2028
Development Testing	3	2026	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 3316 / Advanced Offboard EW			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3316: Advanced Offboard EW	325.062	28.221	26.321	18.107	-	18.107	18.084	5.460	1.140	1.170	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
<p>3316 - The Advanced Offboard EW (AOEW) program is for the development of long duration off-board decoys integrated with onboard systems for EW coordination to counter identified EW gaps (additional details classified) in response to an urgent operational need from the Fleet that has been approved by the CNO for execution. In FY 2012, the program began with a Rapid Response Effort (RRE) which was completed in FY 2014. The RRE consisted of the evaluation and integration of commercially available decoys. The Decoy Development Effort (DDE) consists of the development and evaluation of a long duration, active electronic offboard decoy system (payload) integrated on an existing flight vehicle (MH-60R/MH-60S), integration with ship and air systems, and a government software development effort to integrate AOEW into the Soft Kill Coordination System (SKCS) to gain maximum effectiveness from the decoy through coordination with an onboard system.</p> <p>In the DDE/E&amp;MD Contract effort, which commenced in 2017, the program is developing and integrating Engineering Development Models (EDMs) with the System of Systems (SOS) partners to include conduct of Factory Qualification Testing (FQT), preparation for the program's test phase ramping up in Q2FY23, and FY23 delivery of the Technical Data Package (TDP). Schedule shifts in program testing and delivery of TDP are due to test complexity.</p> <p>As part of the MH-60R/S Flight Certification effort, the program is required to complete NAVAIR Avionics Operating Program (AOP) software development and Flight Certification, which are critical to support fielding of the AOEW decoy. The AOP software supports integration of the AOEW decoy with the MH-60R/S airframe and is required for successful completion of Flight Certification. AOP software development was completed in FY21. Flight Certification testing includes Ground and Flight Jettison, Flight Test for Mission Performance / Spec Compliance Flight Test, Functional Software Test, and Decoy Fit and Egress Test, which ensures operational Safety of Flight and is critical to successful decoy fielding.</p> <p>The FY24 budget request supports NAVAIR conduct of Avionics Operating Program (AOP) MH-60R and MH-60S Software Testing necessary for AOEW Decoy and Helicopter Integration into the baseline and NAVAIR Air Worthiness and Flight Certification.</p>												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
					FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
Title: AOEW - Decoy Development Effort (DDE) Government Engineering					10.586	15.794	16.616	0.000	16.616			
Articles:					-	-	-	-	-			
FY 2023 Plans:												
- Complete Support of Development of TDP												
- Complete support of Security Software development												
- Complete Battery Certification												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)		Project (Number/Name) 3316 / Advanced Offboard EW		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div><div>- Complete support of AOEW Model Development</div><div>- Continue identification of and update of test assets needed to support Operational Testing</div><div>- Continue Technique Verification Test Planning</div><div>- Continue tactics development and continue tactics analysis</div><div>- Commence and complete support of FQT</div><div>- Continue integration of ship and air interfaces</div><div>- Continue interoperability analysis to ensure all System Of Systems (SOS) are compatible</div><div>- Commence and complete test planning for PAX chamber test (one government-led DT Test event)</div><div>- Conduct one government-led Developmental Testing event (PAX chamber test) and commence test analysis</div><div>- Commence integration test planning for Dahlgren open air test</div><div>- Continue testing of AOP to update MH-60R/S software necessary for AOEW decoy and helicopter integration</div><div>- Continue Engineering Data Requirements Agreement Plan (EDRAP) development</div><div>- Continue NAVAIR MH-60R/S Flight Certification Testing</div><div>- Continue sustainment and training plan development</div><div>- Continue Installation Planning</div><div>- Commence update of Improved Control and Displays (ICADs)</div><div>- Commence test and operational library development</div><div>- Continue SKCS development</div></div>						
<div><div>FY 2024 Base Plans:</div><div>- Continue identification of and update of test assets needed to support Operational Testing</div><div>- Complete Technique Verification Test Planning (one government-led DT Test event)</div><div>- Conduct one government-led Developmental Test Event (Technique Verification) and commence test analysis</div><div>- Continue tactics development and continue tactics analysis</div><div>- Continue integration of ship and air interfaces</div><div>- Continue interoperability analysis to ensure all SOS are compatible</div><div>- Complete integration test planning for Dahlgren open air test (one government-led DT Test)</div><div>- Conduct one government-led Developmental Test Event (Dahlgren open air test) and commence test analysis</div><div>- Complete test analysis for three government-led Developmental Test Events</div><div>- Continue testing of AOP to update MH-60R/S software necessary for AOEW decoy and helicopter integration</div><div>- Complete EDRAP development</div><div>- Continue NAVAIR MH-60R/S Flight Certification Testing</div><div>- Continue sustainment and training plan development</div></div>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)		Project (Number/Name) 3316 / Advanced Offboard EW		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue Installation Planning</div> <div>- Complete update of ICADs</div> <div>- Commence and complete Environmental Qualification Test (EQT)</div> <div>- Continue test and operational library development</div> <div>- Complete SKCS development</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Increase for Government Engineering in FY24 is due to conduct of two (2) Developmental Test events led by the government and conduct of Environmental Qualification Test.</div>						
<div>Title: AOEW - Decoy Development Effort (DDE) Development</div> <div>Articles:</div> <div>FY 2023 Plans:</div> <div>- Complete EDM Hardware and Software development and integration</div> <div>- Complete assembly and delivery of one EDM (with arrays)</div> <div>- Complete delivery of one EDM (without arrays)</div> <div>- Complete development of TDP</div> <div>- Complete Security Software development</div> <div>- Complete Support of Battery Certification</div> <div>- Complete AOEW Model Development</div> <div>- Complete Support of Technique Verification</div> <div>- Conduct FQT</div> <div>- Continue Integration Support of Ship and Air Interfaces</div> <div>- Commence and complete Support of Test Planning for PAX Chamber Test (DT Testing)</div> <div>- Commence and complete support of one government-led Developmental Testing Event (PAX Chamber Test)</div> <div>- Commence and complete support of Integration Test Planning for Dahlgren Open Air Test (DT Test event)</div> <div>- Continue support of Avionics Operating Program (AOP) MH-60R and MH-60S Software Testing Necessary for AOEW Decoy and Helicopter Integration</div> <div>- Continue support for NAVAIR Flight Certification Testing</div> <div>- Continue support of Sustainment and Training Plan Development</div> <div>- Commence and complete support of ICAD update</div>		17.635 -	10.527 -	1.491 -	0.000 -	1.491 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 3316 / Advanced Offboard EW				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>												
				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total				
- Commence and complete support of test and operational library development - Complete support of SKCS development  <b>FY 2024 Base Plans:</b> - Complete integration support of Ship and Air interfaces - Complete support of Avionics Operating Program (AOP) MH-60R and MH-60S Software Testing Necessary for AOEW Decoy and Helicopter Integration - Complete support for NAVAIR Flight Certification Testing - Complete support of Sustainment and Training Plan Development  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease for Development Engineering in FY24 is due to the FY23 delivery of two (2) EDMs, and completion of Security Software Development and Model Development.												
<b>Accomplishments/Planned Programs Subtotals</b>				28.221	26.321	18.107	0.000	18.107				
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
			FY 2024	FY 2024	FY 2024						Cost To	
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Base</b>	<b>OCO</b>	<b>Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Complete</b>	<b>Total Cost</b>	
• OPN/5530: Anti-ship Missile Decoy System	76.994	86.264	56.630	-	56.630	80.039	93.436	129.073	131.621	942.752	1,706.317	
• OMN/11CD0 (1C1C): AOEW	0.000	5.997	9.726	-	9.726	10.536	11.250	12.063	12.307	Continuing	Continuing	
<b>Remarks</b>												
<b>D. Acquisition Strategy</b> A sole-source contract is planned in FY23-FY24 for LRIPs and Design Agent services. A competitive contract is planned for production of additional LRIPs and Full-Rate Production (FRP) units in FY25-FY29.												



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)						Project (Number/Name) 3316 / Advanced Offboard EW			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Concept Analysis and Integration Assessment	SS/CPFF	APL : Laurel, MD	11.707	0.000		0.000		0.000		-		0.000	0.000	11.707	Continuing
Concept Analysis and Technology Studies	MIPR	MIT-LL : Boston, MA	4.857	0.000		0.000		0.000		-		0.000	0.000	4.857	Continuing
Concept Development and Technology Studies	WR	NRL : Washington, D.C.	25.856	0.000		0.000		0.000		-		0.000	0.000	25.856	Continuing
Technology Development and Systems Requirements	WR	NSWC Dahlgren : Dahlgren, VA	14.595	0.000		0.000		0.000		-		0.000	0.000	14.595	Continuing
DDE Avionics Development	WR	NAVAIR : Patuxent River, MD	17.667	0.402	Nov 2021	1.636	Oct 2022	1.377	Nov 2023	-		1.377	Continuing	Continuing	Continuing
DDE Preliminary Design/ E&MD	C/CPIF	Lockheed Martin : Syracuse, NY	149.216	17.635	Dec 2021	10.527	Oct 2022	1.491	Nov 2023	-		1.491	Continuing	Continuing	Continuing
Ship Integration	WR	SPAWAR : San Diego, CA	0.975	0.000		0.000		0.000		-		0.000	0.000	0.975	-
Ship Integration	WR	NSWC Dahlgren : Dahlgren, VA	0.330	0.000		0.000		0.000		-		0.000	0.000	0.330	-
Subtotal			225.203	18.037		12.163		2.868		-		2.868	Continuing	Continuing	N/A
Remarks															
- Since the FY23 budget request, funding within FY23 was internally realigned from Support and T&E to Product Development to support DDE Preliminary Design/E&MD for the completion of EDM Hardware and Software development and integration, conduct of FQT, support of Battery Certification, and finalization of TDP.															
- FY23 to FY24 funding for DDE Preliminary Design/E&MD decreases due to the delivery of two (2) EDMs and completion of Security Software Development and Model Development.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Development Support	WR	NRL : Washington, DC	20.297	1.437	Nov 2021	2.140	Nov 2022	1.226	Nov 2023	-		1.226	Continuing	Continuing	Continuing
Government Development and Engineering Support	WR	NSWC Dahlgren : Dahlgren, VA	15.561	0.866	Nov 2021	0.848	Nov 2022	1.944	Nov 2023	-		1.944	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 3316 / Advanced Offboard EW					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC Crane : Crane, IN	19.449	1.396	Nov 2021	3.402	Nov 2022	2.102	Nov 2023	-		2.102	Continuing	Continuing	Continuing
Logistics/Training	SS/CPFF	EWA : Fairmont, WV	1.616	0.000		0.000		0.000		-		0.000	0.000	1.616	Continuing
Government Engineering Support	WR	NSWC Carderock : Bethesda, MD	1.494	0.000		0.183	Jan 2023	0.000		-		0.000	0.000	1.677	-
Systems Engineering Support	SS/CPFF	APL : Laurel, MD	8.333	0.275	Apr 2022	0.605	Mar 2023	0.257	Nov 2023	-		0.257	Continuing	Continuing	Continuing
Government Development Support	WR	NAVAIR : Patuxent River, MD	6.725	0.301	Nov 2021	1.345	Nov 2022	1.056	Nov 2023	-		1.056	Continuing	Continuing	Continuing
Systems Engineering Support	MIPR	MIT-LL : Boston, MA	0.034	0.000		0.000		0.000		-		0.000	0.000	0.034	-
Program Management Support	MIPR	DISA : Pensacola, FL	0.195	0.000		0.000		0.000		-		0.000	0.000	0.195	-
Installation Support	WR	SUPSHIP : Bath, ME	0.098	0.014	Feb 2022	0.127	Mar 2023	0.000		-		0.000	0.000	0.239	-
Integrated Logistics Assessment	WR	NSWC PHD : Port Hueneme, CA	0.021	0.000		0.000		0.000		-		0.000	0.000	0.021	-
Integrated Logistics Assessment	WR	NSWC Panama City : Panama City Beach, FL	0.009	0.000		0.000		0.000		-		0.000	0.000	0.009	-
Integrated Logistics Assessment	WR	NAVSUP WSS : Philadelphia, PA	0.004	0.000		0.000		0.000		-		0.000	0.000	0.004	-
Integrated Logistics Assessment	WR	NSWC IHEOD : Indian Head, MD	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011	-
MRTS Support	WR	NAWC TSD : Orlando, FL	0.015	0.000		0.000		0.000		-		0.000	0.000	0.015	-
Ship Integration	WR	NIWC PAC : San Diego, CA	0.028	0.000		0.000		0.000		-		0.000	0.000	0.028	-
Subtotal			73.890	4.289		8.650		6.585		-		6.585	Continuing	Continuing	N/A
Remarks - FY23 to FY24 funding for Support decreased due to the completion of Battery Certification, support of FQT, and support of Security Software Development and Model Development.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)						Project (Number/Name) 3316 / Advanced Offboard EW			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
- Since the FY23 budget request, FY23 funding was internally realigned from Support to Product Development for the completion of EDM Hardware and Software development and integration, conduct of FQT, support of Battery Certification, and finalization of TDP.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	6.148	0.708	Nov 2021	1.997	Oct 2022	2.371	Nov 2023	-		2.371	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC/Dahlgren : Dahlgren, VA	4.617	1.032	Oct 2021	1.525	Oct 2022	2.298	Nov 2023	-		2.298	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	1.471	0.000		0.127	Oct 2022	0.210	Nov 2023	-		0.210	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAVAIR : Patuxent River, MD	8.615	3.860	Nov 2021	1.584	Oct 2022	3.569	Nov 2023	-		3.569	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	OPTEVFOR : Norfolk, VA	0.819	0.275	Dec 2021	0.200	Mar 2023	0.146	Nov 2023	-		0.146	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	SS/CPFF	APL : Laurel, MD	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			21.670	5.875		5.433		8.594		-		8.594	Continuing	Continuing	N/A
Remarks															
- FY23 to FY24 funding for Test and Evaluation increases due to the conduct of two (2) Developmental Test Events in FY24.															
- Since the FY23 budget request, FY23 funding was internally realigned from T&E to Product Development for the completion of EDM Hardware and Software development and integration, conduct of FQT, support of Battery Certification, and finalization of TDP.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPIF	CACI (SEAPORT) : Washington, DC	1.170	0.000		0.000		0.000		-		0.000	0.000	1.170	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)						Project (Number/Name) 3316 / Advanced Offboard EW			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPIF	SPA : Washington, DC	0.821	0.000		0.000		0.000		-		0.000	0.000	0.821	-
Program Management Support	C/CPIF	TMB (SEAPORT) : Washington, DC	1.693	0.000		0.000		0.000		-		0.000	0.000	1.693	-
Program Management Support	C/CPIF	STRATEGIC INSIGHT (SEAPORT) : Washington, DC	0.058	0.000		0.000		0.000		-		0.000	0.000	0.058	-
Program Management Support	WR	NSWC Indian Head : Indian Head, MD	0.053	0.000		0.000		0.000		-		0.000	0.000	0.053	-
Travel	Allot	NAVSEA Program Office Travel : Washington, DC	0.239	0.020	Oct 2021	0.075	Jan 2023	0.060	Nov 2023	-		0.060	Continuing	Continuing	Continuing
Cost Management Support	C/CPIF	CACI (SEAPORT) : Washington, DC	0.265	0.000		0.000		0.000		-		0.000	0.000	0.265	-
Subtotal			4.299	0.020		0.075		0.060		-		0.060	Continuing	Continuing	N/A
Remarks															
- Since the FY23 budget request, FY23 funding for travel increased to support Security Software Development, AOEW Model Development, the conduct of FQT in New York, and the conduct of NAVAIR MH-60R/S Flight Certification Testing.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			325.062	28.221		26.321		18.107		-		18.107	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)

Project (Number/Name)

3316 / Advanced Offboard EW

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																				△	FRP/DR							
Development	DDE/Engineering and Manufacturing Development (E&MD)																											
																					Autonomous Flight Vehicle Requirements Definition							
Test & Evaluation	MH-60R/S Flight Certification																											
Development Test	DDE Landbased Test and Certification																											
																				△	IOT&E						△	FOT&E

Acronyms: DDE - Decoy Development Effort; DR - Decision Review; FOT&E - Follow-on Operational Test and Evaluation; FRP - Full Rate Production; IOT&E - Initial Operational Test and Evaluation

## Notes:

Since the FY23 budget request, DDE/Engineering and Manufacturing Development (E&MD) extended from Q4FY23 to Q2FY24 due to continued Integration Support of Ship and Air Interfaces, Support of AOP Software Testing, and Support of NAVAIR Flight Certification Testing.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)	Project (Number/Name) 3316 / Advanced Offboard EW	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3316				
DDE / E&MD	1	2022	2	2024
MH60-R/S Flight Certification	1	2022	4	2025
DDE Land-Based Test and Certification	1	2022	1	2026
Initial Operational Test and Evaluation (IOT&E)	3	2026	3	2026
Full Rate Production (FRP) / Decision Review (DR)	4	2026	4	2026
Autonomous Flight Vehicle Requirements Definition	1	2027	4	2028
Follow-On Operational Test and Evaluation (FOT&E)	4	2027	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 3321 / SEWIP Block 3			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3321: SEWIP Block 3	280.043	3.291	6.210	8.906	-	8.906	6.298	6.045	6.031	6.129	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

SEWIP Block 3 is developing an advanced Electronic Attack (EA) capability to keep pace with the evolving Anti-Ship Missile Defense (ASMD) threat and counter-targeting required for the AN/SLQ-32(V) system. SEWIP Block 3 will provide the AN/SLQ-32(V)7 system for all surface ships (CVN, DDG, LHD) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new construction platforms.

The SEWIP Block 3 Acquisition leverages technology developed under the Office of Naval Research's (ONR) Integrated Topside (InTop) Science and Technology (S&T) effort. SEWIP Block 3 will continue to expand the integrated shipboard combat system by providing new integrated EA transmitters, arrays, and associated EA techniques. The AN/SLQ-32(V)7 integrates the new EA countermeasure (SEWIP Block 3) with the AN/SLQ-32(V)6. The AN/SLQ-32(V)6 includes an Electronic Support (ES) receiver (SEWIP Block 2), a High Gain High Sensitivity (HGHS) receiver (SEWIP Block 1B3), a Specific Emitter Identifier (SEI) receiver (SEWIP Block 1B2), display console, and backend electronics. SEWIP Block 3 includes the government software development and integration effort for a SoftKill Coordinator (SKC) to manage EA engagements. SEWIP Block 3 is developing an Electronic Warfare Test Bed (EWTB) to validate system performance via modeling and simulation.

The FY24 funding request for SEWIP Block 3 will focus on the conduct of TECHEVAL and Initial Operational Test & Evaluation (IOT&E). Additionally, training curriculum development, EWTB model upgrades, and development efforts will continue and increase for High Power Amplifier (HPA) efficiency to reduce required power and fuel consumption.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> SEWIP Block 3 Government Engineering	2.884	4.272	6.544	0.000	6.544
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Complete Land Based Testing (LBT) events at Wallops Island.</li> <li>- Continue EWTB model upgrades and verification/validation of model performance.</li> <li>- Continue test planning for TECHEVAL/IOT&amp;E.</li> <li>- Commence HPA energy efficiency engineering design and development.</li> <li>- Continue monitoring of software and hardware fixes/upgrades.</li> <li>- Continue monitoring training curriculum development.</li> </ul>					
<b>FY 2024 Base Plans:</b> <ul style="list-style-type: none"> <li>- Continue EWTB model upgrades and verification/validation of model performance.</li> </ul>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)		Project (Number/Name) 3321 / SEWIP Block 3		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue test planning and conduct TECHEVAL/IOTE.</div> <div>- Continue HPA energy efficiency engineering design and development.</div> <div>- Continue monitoring of software and hardware fixes/upgrades.</div> <div>- Continue monitoring training curriculum development.</div> <div>- Commence preparation and conduct of Full Rate Production Decision Review (FRP DR).</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: The increase in FY24 is due to executing TECHEVAL/IOT&amp;E, continued HPA efficiency engineering design and development efforts, and preparing for FRP. The program's primary focus in FY24 is executing TECHEVAL/IOT&amp;E.</div>						
<div>Title: SEWIP Block 3 Development</div> <div>Articles:</div> <div>FY 2023 Plans: - Continue upgrades of software and hardware baseline based on LBT results. - Continue developing the SEWIP Block 3 training modules of the Surface EW Tactical Trainer (SEWTT). - Commence HPA energy efficiency engineering design and development.</div> <div>FY 2024 Base Plans: - Continue upgrades of software and hardware baseline based on LBT results - Continue effort to complete the SEWIP Block 3 training modules of the SEWTT. - Continue HPA energy efficiency engineering design and development.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY24 is due to efforts associated with HPA efficiency engineering design and development efforts.</div>		0.407 -	1.938 -	2.362 -	0.000 -	2.362 -
Accomplishments/Planned Programs Subtotals		3.291	6.210	8.906	0.000	8.906



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604757N / <i>Ship Self Def (Engage: Soft Kill/EW)</i>	<b>Project (Number/Name)</b> 3321 / <i>SEWIP Block 3</i>	

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2312: AN/SLQ-32	313.817	292.417	329.513	-	329.513	278.251	513.853	594.041	606.214	3,871.034	8,905.177
• OMN PE 0204575N: AN/SLQ-32	4.464	16.609	18.611	-	18.611	19.664	17.961	19.822	20.225	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

SEWIP developed Block upgrades to AN/SLQ-32 based on integrating technology advances and adding functional capabilities in an incremental fashion. Each Block and sub-Block was developed and contracted in an individual yet coordinated and overlapping fashion. Specifically, SEWIP Block 3 involves the transitioning and leveraging of work performed under the Integrated Topside (INTOP) program sponsored by ONR, which focused on designing/architecting an integrated Electronic Attack (EA), Information Operations (IO), and Line of Site (LOS) Comms system for Naval Surface Platforms. The SEWIP Block 3 acquisition strategy included a full and open competition for EM&D and the first LRIP units. As part of EMD and LRIP, the OEM delivered a level III, build-to-print Technical Data Package (TDP) to support full and open competition for additional LRIP and FRP units.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)						Project (Number/Name) 3321 / SEWIP Block 3					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Block 3 SEWTT Development	SS/CPFF	EWA-GSI : Fairmont, WV	2.326	0.407	Jun 2022	0.705	Feb 2023	0.362	Nov 2023	-		0.362	Continuing	Continuing	Continuing		
Block 3 Preliminary Design/E&MD	C/CPIF	Northrop Grumman : Baltimore, MD	267.436	0.000		1.233	Feb 2023	2.000	Nov 2023	-		2.000	Continuing	Continuing	Continuing		
Subtotal			269.762	0.407		1.938		2.362		-		2.362	Continuing	Continuing	N/A		
Remarks																	
- Product Development increase in FY23 from the FY23 budget request is due to additional training module requirements within the Surface EW Tactical Trainer (SEWTT).																	
- Product Development increase in FY24 is due to continued efforts associated with HPA efficiency engineering design and development.																	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Block 3 Integrated Logistics Support	WR	NSWC Corona : Corona, CA	0.023	0.000		0.000		0.000		-		0.000	0.000	0.023	-		
Block 3 Government Engineering Support	MIPR	MIT-LL : Cambridge, MA	4.794	0.000		0.000		0.000		-		0.000	0.000	4.794	-		
Block 3 Feasibility Studies	WR	BIW : Bath, ME	0.510	0.000		0.000		0.000		-		0.000	0.000	0.510	-		
Block 3 Platform Integration Studies	WR	Norfolk Naval Shipyard (NNSY) : Norfolk, VA	0.040	0.000		0.000		0.000		-		0.000	0.000	0.040	-		
Block 3 Platform Integration Studies	WR	SUPSHIP Gulf Coast : Pascagoula, MS	0.062	0.000		0.000		0.000		-		0.000	0.000	0.062	-		
Block 3 Platform Integration Studies	WR	NSWC Philadelphia : Philadelphia, PA	0.212	0.000		0.000		0.000		-		0.000	0.000	0.212	-		
Block 3 Platform Integration Studies	WR	NAVSEA 05 (Alion) : Washington, DC	0.297	0.000		0.000		0.000		-		0.000	0.000	0.297	-		
Block 3 Platform Integration Studies	WR	NAVSEA 05 (CSRA) : Washington, DC	0.149	0.000		0.000		0.000		-		0.000	0.000	0.149	-		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)					Project (Number/Name) 3321 / SEWIP Block 3				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 3 Platform Integration Studies	WR	Lockheed Martin : Moorstown, NJ	0.202	0.000		0.000		0.000		-		0.000	0.000	0.202	-
Subtotal			6.289	0.000		0.000		0.000		-		0.000	0.000	6.289	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC Dahlgren : Dahlgren, VA	0.378	0.000		0.000		0.000		-		0.000	0.000	0.378	-
Developmental Test & Evaluation (DT&E)	WR	NSWC Crane : Crane, IN	0.051	0.266	Jan 2022	0.341	Nov 2022	0.075	Nov 2023	-		0.075	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NSWC Crane : Crane, IN	0.000	0.000		0.000		0.342	Nov 2023	-		0.342	0.000	0.342	-
Developmental Test & Evaluation (DT&E)	WR	NRL : Washington, DC	1.254	1.353	Feb 2022	2.509	Dec 2022	0.374	Nov 2023	-		0.374	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NRL : Washington, DC	0.000	0.000		0.000		4.500	Nov 2023	-		4.500	0.000	4.500	-
Developmental Test & Evaluation (DT&E)	SS/CPFF	APL : Laurel, MD	0.767	0.000		0.275	Dec 2022	0.050	Nov 2023	-		0.050	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	SS/CPFF	APL : Laurel, MD	0.000	0.000		0.000		0.075	Nov 2023	-		0.075	0.000	0.075	-
Developmental Test & Evaluation (DT&E)	WR	COMOPTEVFOR : Norfolk, VA	0.070	0.448	Feb 2022	0.245	Jun 2023	0.050	Nov 2023	-		0.050	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	COMOPTEVFOR : Norfolk, VA	0.000	0.000		0.000		0.310	Nov 2023	-		0.310	0.000	0.310	-
Developmental Test & Evaluation (DT&E)	WR	Surface Combat Systems Center : Wallops Island, VA	1.028	0.505	Apr 2022	0.628	Feb 2023	0.457	Nov 2023	-		0.457	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	USACE (DREN) : Wallops Island, VA	0.090	0.000		0.021	Dec 2022	0.021	Nov 2023	-		0.021	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)				Project (Number/Name) 3321 / SEWIP Block 3					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAVFAC Mid-Atlantic : Norfolk, VA	0.192	0.000		0.000		0.000		-		0.000	0.000	0.192	-
Subtotal			3.830	2.572		4.019		6.254		-		6.254	Continuing	Continuing	N/A
Remarks															
- Test & Evaluation decrease in FY23 from the FY23 budget request is due to reduced Land-Based Test Site (LBTS) NRE infrastructure requirements.															
- Test and Evaluation increase in FY24 is due to executing TECHEVAL/IOT&E and continued HPA efficiency engineering design and development efforts. The program's primary focus in FY24 is executing TECHEVAL/IOT&E.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 3 Program Management Support	C/CPIF	TMB (SEAPORT) : Washington, DC	0.027	0.124	Feb 2022	0.100	Dec 2022	0.115	Nov 2023	-		0.115	Continuing	Continuing	Continuing
Block 3 Program Management Support	C/CPIF	BAH (SEAPORT) : Washington, DC	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Block 3 Program Management Support	C/CPIF	SPA (SEAPORT) : Washington, DC	0.105	0.128	Dec 2021	0.100	Dec 2022	0.115	Nov 2023	-		0.115	Continuing	Continuing	Continuing
Block 3 Travel	Sub Allot	NAVSEA Program Office : Washington, DC	0.030	0.060	Dec 2021	0.053	Feb 2023	0.060	Nov 2023	-		0.060	Continuing	Continuing	Continuing
Subtotal			0.162	0.312		0.253		0.290		-		0.290	Continuing	Continuing	N/A
Remarks															
- Management Services increase in FY24 is due to planned oversight and monitoring required for HPA efficiency engineering design and development oversight.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			280.043	3.291		6.210		8.906		-		8.906	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)

Project (Number/Name)

3321 / SEWIP Block 3

Fiscal Year	2022				2023				2024				2025				2026				2027				2028							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones												△ FRP DR																				
Development	Software and Hardware Baseline Upgrades																															
	EW Test Bed																															
	HPA Efficiency Design & Development																															
	Multifunction Aperture Capability Improvements																															
Test & Evaluation Milestones																																
Development Test					IT,DT*				△																							
Operational Test									TECHEVAL/IOT&E																							
Installations	AMOD DDG (Test Ship)								△																							
																	AMOD DDG								△							

\* Includes the following test events: Land Test-Block 3 Stand-Alone Operation, Flight Test-Threat Engagements (over water), IA / Maint Demo (Dry Run), CMS Integration (Aegis), DDG-51 Combat System Certification (Aegis Integration), Environment, EMI, RCS, and Shock Tests

Acronyms: DR-Decision Review; DT-Developmental Test; FRP-Full Rate Production; IOT&E-Initial Operational Test & Evaluation; IT-Integrated Testing; FQT- Formal Qualification Test; AMOD- Aegis Modernization; HPA - High Power Amplifier; FOT&E - Follow-on Test & Evaluation

Note 1: Since the FY23 budget request, High Power Amplifier (HPA) efficiency design & development has been added to the schedule and commences in 1QTRFY23.

Note 2: Since the FY23 budget request, Multifunction Improvements has been added to the schedule and commences in 1QTRFY25.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604757N / Ship Self Def (Engage: Soft Kill/EW)	Project (Number/Name) 3321 / SEWIP Block 3	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3321.L24				
EW Testbed	1	2022	4	2026
IT-DT	1	2022	4	2023
Software and Hardware Baseline Upgrades	1	2022	4	2027
AMOD DDG (Test Ship)	1	2022	1	2024
HPA Efficiency Design & Development	1	2023	3	2025
AMOD DDG	1	2024	2	2026
Block 3 TECHEVAL and IOT&E	1	2024	3	2024
Block 3 FRP DR	4	2024	4	2024
Multifunction Aperture Capability Improvements	1	2025	4	2028

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0604761N / <i>Intelligence Engineering</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	33.049	20.684	23.742	19.969	-	19.969	26.789	26.178	24.777	25.344	Continuing	Continuing
3103: <i>Intelligence Engineering</i>	9.642	3.887	5.640	5.843	-	5.843	7.553	7.247	6.800	7.006	Continuing	Continuing
3421: <i>Non-Kinetic Countermeasure Support</i>	23.407	16.797	18.102	14.126	-	14.126	19.236	18.931	17.977	18.338	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

<b><u>B. Program Change Summary (\$ in Millions)</u></b>	<b><u>FY 2022</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024 Base</u></b>	<b><u>FY 2024 OCO</u></b>	<b><u>FY 2024 Total</u></b>
Previous President's Budget	20.684	23.742	22.765	-	22.765
Current President's Budget	20.684	23.742	19.969	-	19.969
Total Adjustments	0.000	0.000	-2.796	-	-2.796
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	1.550	-	1.550
• Rate/Misc Adjustments	0.000	0.000	-4.346	-	-4.346

**Change Summary Explanation**

The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604761N / <i>Intelligence Engineering</i>				Project (Number/Name) 3103 / <i>Intelligence Engineering</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3103: <i>Intelligence Engineering</i>	9.642	3.887	5.640	5.843	-	5.843	7.553	7.247	6.800	7.006	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604761N / Intelligence Engineering				Project (Number/Name) 3421 / Non-Kinetic Countermeasure Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3421: Non-Kinetic Countermeasure Support	23.407	16.797	18.102	14.126	-	14.126	19.236	18.931	17.977	18.338	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604771N / <i>Medical Development</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	276.185	30.429	16.178	6.061	-	6.061	8.419	7.920	7.416	7.568	Continuing	Continuing
0933: <i>Medical/Dental Equipment Dev</i>	27.549	3.882	3.178	6.061	-	6.061	8.419	7.920	7.416	7.568	Continuing	Continuing
9999: <i>Congressional Adds</i>	248.636	26.547	13.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	288.183

**A. Mission Description and Budget Item Justification**

The purpose of this program is to develop biomedical equipment and related techniques to reduce morbidity; to enhance the logistic feasibility of modern medical care for combat casualties; to sustain casualties for evacuation to fixed medical facilities for definitive care; and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firm/industry participation in the projects.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	31.467	3.178	7.639	-	7.639
Current President's Budget	30.429	16.178	6.061	-	6.061
Total Adjustments	-1.038	13.000	-1.578	-	-1.578
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	13.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.038	0.000			
• Program Adjustments	0.000	0.000	-1.622	-	-1.622
• Rate/Misc Adjustments	0.000	0.000	0.044	-	0.044

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 9999: *Congressional Adds*

Congressional Add: *Military dental research*

Congressional Add: *Wound Care Research*

Congressional Add: *Autonomous Aerial Technology for Distributed Logistics*

Congressional Add: *Mitigating circadian misalignment*

FY 2022	FY 2023
9.653	10.000
9.654	0.000
7.240	0.000
0.000	3.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023	
<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		<b>R-1 Program Element (Number/Name)</b> PE 0604771N / Medical Development	
<b>Congressional Add Details (\$ in Millions, and Includes General Reductions)</b>		<b>FY 2022</b>	<b>FY 2023</b>
Congressional Add Subtotals for Project: 9999		26.547	13.000
Congressional Add Totals for all Projects		26.547	13.000
<b>Change Summary Explanation</b> FY 2024 funding request was reduced by \$1.578M for realignments of RD TEN funding to ensure wholeness for Navy priority programs.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604771N / Medical Development				Project (Number/Name) 0933 / Medical/Dental Equipment Dev			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0933: Medical/Dental Equipment Dev	27.549	3.882	3.178	6.061	-	6.061	8.419	7.920	7.416	7.568	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The purpose of this program is to develop biomedical equipment and related techniques to reduce morbidity; to enhance the logistic feasibility of modern medical care for combat casualties; to sustain casualties for evacuation to fixed medical facilities for definitive care; and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms/industry participation in the projects.

The purpose of this program is to develop, test, and evaluate expeditionary medical systems and equipment to save warfighter lives, facilitate movement of patients up the roles of care, and return warfighters to the fight; especially in the Distributed Maritime environment. Each work unit undertaken in this program has a military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms/industry participation in the projects.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Medical/Dental Equipment Development	3.882	2.144	5.024	0.000	5.024
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> -Continue Individual Fatigue-Based Scheduling and Countermeasure System that predicts, prevents, detects, and mitigates periods of high risk associated with fatigue. -Complete fatigue mitigation and validation of scheduling tools to include validation of an alternative watchstanding schedule on Naval Surface Combatants. -Complete Human Performance/Crew Endurance effort: Fatigue Mitigation. -Complete cabin-pressure/decompression sickness (DCS) test and evaluation capability. -Continue evaluation of physiological monitoring sensor system in relevant military environments. -Complete Human Performance/Crew Endurance effort: Navy specific Stress Inoculation Study. -Continue Neurocognitive Tool Development and Test & Evaluation. -Continue Human Performance: Antiemetic.					
<b>FY 2024 Base Plans:</b> -Complete Individual Fatigue-Based Scheduling and Countermeasure System that predicts, prevents, detects, and mitigates periods of high risk associated with fatigue. -Continue evaluation of physiological monitoring sensor system in relevant military environments.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604771N / Medical Development		Project (Number/Name) 0933 / Medical/Dental Equipment Dev		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>-Continue Neurocognitive Tool Development and Test &amp; Evaluation.</div> <div>-Continue Human Performance: Antiemetic.</div> <div>-Initiate Test &amp; Evaluation Autonomous Aerial Technology for Distributed Logistics of Critical Medical Supplies.</div> <div>-Initiate Human Factors Surface Fleet Optimized Watch Standing and Logistics (OWL) Tool Fatigue Meter.</div> <div>-Initiate Human Factors Surface Fleet Support of Optimized Watch Standing and Logistics (OWL) Tool Fatigue Meter.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: The \$2.880M increase from FY 2023 to FY 2024 supports continuation of project activities for development of a Physiological Monitoring Sensors and Systems that will involve integration and T&amp;E activities for diveable biomedical monitoring systems (i.e., Integrated Monitoring System [IMS]). As well as expand fatigue mitigation Tools for Surface Fleet application. The increase from FY 2023 to FY 2024 accounts for expanded Research and Development activities and funding will be attributed to the activities as noted herein.</div>						
<div>Title: Expeditionary Medical Family of Systems</div> <div>Articles:</div> <div>FY 2023 Plans: Perform Business Case Analysis, developmental testing and suitability evaluation for the Expeditionary Medical Family of Systems to include Certified Diagnostic Mobile Laboratory, Expeditionary Resuscitative Surgical Systems, En Route Care Systems, and Expeditionary Medical Units Afloat, to increase agility and scalability of Expeditionary Medical Services in support of 2019 Naval Expeditionary Health Services Required Operational Capability/Projected Operational Environment with pivot to Distributed Maritime Operations.</div> <div>FY 2024 Base Plans: Perform Business Case Analysis, developmental testing and suitability evaluation for the Expeditionary Medical Family of Systems to include Certified Diagnostic Mobile Laboratory, Expeditionary Resuscitative Surgical Systems, En Route Care Systems, Expeditionary Medical Units Afloat and Ashore Theatre Hospitalization to increase agility and scalability of Expeditionary Medical Services in support of 2019 Naval Expeditionary Health Services Required Operational Capability/Projected Operational Environment with pivot to Distributed Maritime Operations.</div> <div>FY 2024 OCO Plans:</div>		0.000 -	1.034 -	1.037 -	0.000 -	1.037 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604771N / Medical Development	Project (Number/Name) 0933 / Medical/Dental Equipment Dev	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> No significant program change from FY 2023 to FY 2024.					
<b>Accomplishments/Planned Programs Subtotals</b>	3.882	3.178	6.061	0.000	6.061

## C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 8109: Deployable Medical Systems	0.000	10.578	9.568	-	9.568	1.296	1.316	1.341	1.400	0.000	25.499

## Remarks

### D. Acquisition Strategy

The acquisition strategy for product lines and products in the Medical Development Program is designed and implemented consistent with the purpose of the particular product and with the nature and size of the investment.

The major Product Areas in the Medical Development Program are: 1) Equipment, 2) Pharmaceuticals/Biologics, and 3) Operational Knowledge/Concepts. The primary Program Areas of Interest are: 1) Optimize health, performance, and resilience of the ready and forward operating forces; 2) Enhance medical logistics; 3) Reduce mortality and morbidity from battlefield and mission-related injuries in support of Navy Health Services Support in Terrestrial, Maritime Surface, Submarine, and Aviation Operations and USMC in Expeditionary Operations.

For Product Areas 1 and 2, there are two primary acquisition strategies. The first is to test and evaluate for Naval application commercially-developed medical product or candidates in managed trials or test events with the ultimate goal of supporting Food and Drug Administration (FDA) approval, where appropriate. Partnerships with commercial developers promotes developing products of military interest for procurement by the Operating Forces. A second benefit of this strategy is that products are made available across the DoD, Federal Government, and commercial market, thus reducing overall procurement costs. During development, DoD end users are included in the process to the extent possible. The second strategy is to drive a collaborative development process with larger DoD program investments. This process involves developing in-house or industrial prototypes in government-managed programs to meet Naval needs while meeting regulatory requirements for production and fielding. Both tactics promote development of procurement plans that align product availability with Service integration strategies.

The Third Product Area (Knowledge/Concepts) is focused on the introduction of technologies, techniques, and procedures that enhance medical practice and standards of care for effective delivery of health care and casualty care in the Naval operating environment. These primarily require early involvement of the senior leadership of military medicine, in that the end product of the program is modification of concepts of operations, policy, and/or doctrine. These acquisitions can impact the care and performance of Sailors and Marines. Medical Development Program examples include Navy Crew Endurance Handbook and associated implementation tools.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
1319 / 5	PE 0604771N / <i>Medical Development</i>	0933 / <i>Medical/Dental Equipment Dev</i>
<p>NAVSEA Expeditionary Medical Family of Systems program will enter as a Program of Record at Milestone C for the Baseline already fielded systems and will continue to develop and deliver incremental capability to evolving requirements in support of Distributed Maritime Operations.</p>		



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604771N / Medical Development				Project (Number/Name) 0933 / Medical/Dental Equipment Dev					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Human Factors Individualized Fatigue Based Scheduling	Allot	Naval Submarine Medical Research Laboratory : Groton, CT	2.563	0.025	Jul 2023	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Fatigue Based Scheduling	WR	Naval Post Graduate School : Monterey, CA	2.619	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Crew Endurance and Fatigue Mitigation	WR	Naval Post Graduate School : Monterey, CA	5.315	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Cabin-pressure/ Decompression Sickness Test and Evaluation Capability	Allot	NAVFAC EXWC : Port Hueneme, CA	3.143	0.075	Aug 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Cabin-pressure/ Decompression Sickness Test and Evaluation Capability	C/CPFF	NAVSEA : Washington Navy Yard, DC	0.091	0.017	Apr 2023	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Physiological Monitoring Sensor Systems	Various	Various : Not Specified	5.099	2.000	Dec 2022	2.005	Aug 2023	1.600	Aug 2024	-		1.600	Continuing	Continuing	Continuing
Navy specific Stress Inoculation Study	WR	Naval Post Graduate School : Monterey, CA	0.905	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Human Performance: Neurocognitive Tool	Various	Various : Not Specified	0.000	0.000		0.000		1.668	Apr 2024	-		1.668	Continuing	Continuing	Continuing
Human Performance: Antiemetic	C/CPFF	Defender Pharmaceuticals Inc. : Saint Louis, MO	0.000	1.730	Sep 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test & Evaluation Autonomous Aerial Technology for Distributed Logistics of Critical Medical Supplies	TBD	TBD : Not Specified	0.000	0.000		0.000		0.200	May 2024	-		0.200	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604771N / Medical Development				Project (Number/Name) 0933 / Medical/Dental Equipment Dev					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Human Factors Surface Fleet OWL Tool Fatigue Meter	TBD	TBD : Not Specified	0.000	0.000		0.000		0.750	Aug 2024	-		0.750	Continuing	Continuing	Continuing
Human Factors Surface Fleet Support of OWL Tool Fatigue Meter	Allot	Naval Submarine Medical Research Laboratory : Groton, CT	0.000	0.000		0.000		0.032	Aug 2024	-		0.032	Continuing	Continuing	Continuing
Medical Product Development	Various	Various : Not Specified	5.586	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Expeditionary Resuscitative Surgical Systems Business Case Analysis	FFRDC	JHU/APL : Laurel, MD	0.000	0.000		0.150	Jan 2023	0.050	Jan 2024	-		0.050	Continuing	Continuing	Continuing
En Route Care System Business Case Analysis	FFRDC	JHU/APL : Laurel, MD	0.000	0.000		0.150	Jan 2023	0.050	Jan 2024	-		0.050	Continuing	Continuing	Continuing
Certified Diagnostic Mobile Laboratory Business Case Analysis	FFRDC	JHU/APL : Laurel, MD	0.000	0.000		0.000		0.137	Nov 2023	-		0.137	0.000	0.137	-
Subtotal			25.321	3.847		2.305		4.487		-		4.487	Continuing	Continuing	N/A
Remarks															
Certified Diagnostic Mobile Laboratory (CDML) Business Case Analysis increase to support initial procurement of 2 CDMLs.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	WR	NMRLC : Williamsburg, VA	0.000	0.000		0.284	Jan 2023	0.300	Jan 2024	-		0.300	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.284		0.300		-		0.300	Continuing	Continuing	N/A
Remarks															
Increased funding to support FY24 fielding requirements.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604771N / Medical Development				Project (Number/Name) 0933 / Medical/Dental Equipment Dev					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NMRLC : Williamsburg, VA	0.000	0.000		0.200	Jan 2023	0.200	Jan 2024	-		0.200	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	Various : Not Specified	0.000	0.000		0.250	Mar 2023	0.300	Jan 2024	-		0.300	0.000	0.550	-
Subtotal			0.000	0.000		0.450		0.500		-		0.500	Continuing	Continuing	N/A
Remarks															
Increase funding supports ERSS, ERCS and CDML operational and development test requirements to determine suitability.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	Various	Various : Not Specified	2.228	0.035	Aug 2022	0.139	Aug 2023	0.774	Aug 2024	-		0.774	Continuing	Continuing	Continuing
Subtotal			2.228	0.035		0.139		0.774		-		0.774	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			27.549	3.882		3.178		6.061		-		6.061	Continuing	Continuing	N/A
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

**R-1 Program Element (Number/Name)**

PE 0604771N / *Medical Development*

**Project (Number/Name)**

0933 / *Medical/Dental Equipment Dev*

Proj 0933.L18	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
<b>Reduced Morbidity and Mortality: Physiological Monitoring Sensor Systems</b>																												
	Technology Development and Testing																											
<b>Human Performance: Antiemetic</b>																												
<b>Human Factors Surface Fleet OWL Tool Fatigue Meter</b>																												
<b>Medical Product Development: Medical/Dental Systems</b>																												
<b>Cabin-pressure/Decompression Sickness Test and Evaluation Capability</b>																												
<b>Human Performance: Neurocognitive Tool Development and Test &amp; Evaluation</b>																												

2024PB - 0604771N - 0933.L18

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023																			
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0604771N / Medical Development										Project (Number/Name) 0933 / Medical/Dental Equipment Dev									
Proj 0933.S24		FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Expeditionary Medical Family of Systems		R2EM Eng Eval																											
		ERSS AoA																											
		ERCS AoA																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604771N / <i>Medical Development</i>	<b>Project (Number/Name)</b> 0933 / <i>Medical/Dental Equipment Dev</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0933.L18</b>				
Reduced Morbidity and Mortality: Physiological Monitoring Sensor Systems: Technology Development and Testing	1	2022	4	2027
Human Performance: Antiemetic: Systems Development	4	2022	4	2024
Human Factors Surface Fleet OWL Tool Fatigue Meter: Systems Development	4	2024	4	2026
Medical Product Development: Medical/Dental Systems: Systems Development	4	2022	4	2028
Cabin-pressure/Decompression Sickness Test and Evaluation Capability: Systems Development	4	2022	4	2023
Human Performance: Neurocognitive Tool Development and Test & Evaluation: Systems Development	3	2024	4	2027
Expeditionary Medical Family of Systems: Role 2 Enhanced Module Engineering Evaluation	2	2023	3	2028
Expeditionary Medical Family of Systems: Expeditionary Resuscitative Surgical Systems Business Case Analysis and test and evaluation (suitability testing)	2	2023	4	2028
Expeditionary Medical Family of Systems: En Route Care System Business Case Analysis and test and evaluation (suitability testing)	1	2023	3	2028
Expeditionary Medical Family of Systems: Certified Diagnostic Mobile Laboratory Business Case Analysis and test and evaluation (suitability testing)	1	2024	4	2028
Expeditionary Medical Family of Systems: Achieve Milestone C	2	2024	2	2024
Expeditionary Medical Family of Systems: Family of Systems IOC	4	2025	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604771N / Medical Development				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	248.636	26.547	13.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	288.183
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

None

**A. Mission Description and Budget Item Justification**

Congressional Adds

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> Military dental research	9.653	10.000
<b><i>FY 2022 Accomplishments:</i></b> Continue efforts in craniofacial injury surveillance; combat dentistry; treatment of maxillofacial injury; dental disease non-battle injuries; and oral/facial disease and infection in military personnel.		
<b><i>FY 2023 Plans:</i></b> Continue efforts in craniofacial injury surveillance; combat dentistry; treatment of maxillofacial injury; dental disease non-battle injuries; and oral/facial disease and infection in military personnel.		
<b><i>Congressional Add:</i></b> Wound Care Research	9.654	0.000
<b><i>FY 2022 Accomplishments:</i></b> Continue to develop novel diagnostics and treatments to enhance the care of the wounded warfighter.		
<b><i>FY 2023 Plans:</i></b> N/A		
<b><i>Congressional Add:</i></b> Autonomous Aerial Technology for Distributed Logistics	7.240	0.000
<b><i>FY 2022 Accomplishments:</i></b> Continue Research, Development, Test and Evaluation (RDT&E) on autonomous aerial technologies distribution of medical materials to enhance medical capabilities in the distributed operational environment.		
<b><i>FY 2023 Plans:</i></b> N/A		
<b><i>Congressional Add:</i></b> Mitigating circadian misalignment	0.000	3.000
<b><i>FY 2022 Accomplishments:</i></b> N/A		
<b><i>FY 2023 Plans:</i></b> Initiate research on mitigating circadian misalignment.		
<b>Congressional Adds Subtotals</b>	26.547	13.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604771N / Medical Development	Project (Number/Name) 9999 / Congressional Adds
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy None		



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604771N / Medical Development				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Congressional Add - Wound Care Research	Various	Various : Not Specified	75.376	9.654	Sep 2022	0.000		0.000		-		0.000	0.000	85.030	-
Congressional Add - Military Dental Research	Various	Various : Not Specified	28.265	4.827	Jul 2022	5.348	Apr 2023	0.000		-		0.000	0.000	38.440	-
Congressional Add - Military Dental Research	MIPR	USAISR Dental & Craniofacial Trauma Research Dir. : San Antonio, TX	27.946	4.826	Jul 2022	4.652	Jul 2023	0.000		-		0.000	0.000	37.424	-
Congressional Add - Hypoxia Research (C0232)	Various	Various : Not Specified	4.828	0.000		0.000		0.000		-		0.000	0.000	4.828	-
Congressional Add - Aircrew Mounted Physiological Sensors (C0233)	Various	Various : Not Specified	2.897	0.000		0.000		0.000		-		0.000	0.000	2.897	-
Congressional Add - Hypoxia Research (C471)	Various	Various : Not Specified	4.827	0.000		0.000		0.000		-		0.000	0.000	4.827	-
Congressional Add - Physiological Episodes Research (C562)	Various	Various : Not Specified	4.827	0.000		0.000		0.000		-		0.000	0.000	4.827	-
Congressional Add - Autonomous Aerial Technology for Distributed Logistics (C592)	Various	Various : Not Specified	7.240	7.240	Dec 2022	0.000		0.000		-		0.000	0.000	14.480	-
Congressional Add - ETEC Enteric Disease Research (C609)	Various	Various : Not Specified	9.654	0.000		0.000		0.000		-		0.000	0.000	9.654	-
Congressional Add - Mitigating Circadian Misalignment (C891)	Various	Various : Not Specified	0.000	0.000		3.000	May 2023	0.000		-		0.000	0.000	3.000	-
Congressional Adds	Various	Various : Not Specified	82.776	0.000		0.000		0.000		-		0.000	0.000	82.776	-
Subtotal			248.636	26.547		13.000		0.000		-		0.000	0.000	288.183	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604771N / Medical Development					Project (Number/Name) 9999 / Congressional Adds			
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	248.636	26.547		13.000		0.000		-		0.000	0.000	288.183	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604771N / Medical Development

Project (Number/Name)  
9999 / Congressional Adds

Proj 9999	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Military Dental Research (2896C)																												
Wound Care Research (C210)																												
Autonomous Aerial Technology for Distributed Logistics (C592)																												
ETEC Enteric Disease Research (C5609)																												
Mitigating Circadian Misalignment (C891)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604771N / Medical Development	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 9999</b>				
Military Dental Research (2896C): Schedule Detail	1	2022	4	2024
Wound Care Research (C210): Schedule Detail	1	2022	4	2023
Autonomous Aerial Technology for Distributed Logistics (C592): Schedule Detail	1	2022	4	2023
ETEC Enteric Disease Research (C5609): Schedule Detail	1	2022	4	2022
Mitigating Circadian Misalignment (C891): Schedule Detail	2	2023	4	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					PE 0604777N / Navigation/Id System							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	421.517	48.510	60.209	45.262	-	45.262	44.996	44.601	45.313	46.229	Continuing	Continuing
0253: Nav & Electro-Optical Supt	163.792	35.816	50.109	39.236	-	39.236	39.649	40.294	40.927	41.721	Continuing	Continuing
0676: Improve ID Development	65.451	10.104	1.244	3.710	-	3.710	3.219	2.266	2.307	2.371	Continuing	Continuing
1253: Combat Ident System	192.274	1.432	1.856	2.316	-	2.316	2.128	2.041	2.079	2.137	Continuing	Continuing
9999: Congressional Adds	0.000	1.158	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.158

## A. Mission Description and Budget Item Justification

Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. The Photonics Imaging System (0253) is a non-hull penetrating replacement for existing optical periscopes. The Photonics Imaging System exploits a wide portion of the electro-magnetic spectrum utilizing advanced Electro-Optic/thermal imaging, and communications intercept/Electronic Warfare Support (ES). The Integrated Submarine Imaging System (ISIS) (0253) is a back fit system to integrate all imaging capabilities on existing submarine classes. The Combat Identification System (CIS) project (1253) for Mark XIIA, and Improved Identification Development (0676) for AN/UPX-29(V), covers the Mark XIIA Mode 5 upgrade to the existing Mark XII family of systems that is Joint and North Atlantic Treaty Organization (NATO) interoperable. Per Office Secretary of Defense (OSD) direction, NATO participation is encouraged and performance data is exchanged to ensure the opportunity for interoperability with allied identification systems is maximized. In addition to distinguishing friend from foe for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and air traffic control. Identification is multifaceted and includes information received from several sensors (both cooperative and non-cooperative systems).

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	50.037	53.209	45.063	-	45.063
Current President's Budget	48.510	60.209	45.262	-	45.262
Total Adjustments	-1.527	7.000	0.199	-	0.199
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	7.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.527	0.000			
• Program Adjustments	0.000	0.000	-0.041	-	-0.041
• Rate/Misc Adjustments	0.000	0.000	0.240	-	0.240

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604777N I Navigation/Id System	
<b>Congressional Add Details (\$ in Millions, and Includes General Reductions)</b>		<b>FY 2022</b>	<b>FY 2023</b>
<b>Project:</b> 9999: Congressional Adds			
Congressional Add: Navy micro interrogator		1.158	0.000
Congressional Add: Micro 5 IFF interrogator		0.000	7.000
Congressional Add Subtotals for Project: 9999		1.158	7.000
Congressional Add Totals for all Projects		1.158	7.000
<b>Change Summary Explanation</b>			
FY2024 decrease driven by the completion of the Signature Reduction Mast Prototype.			
FY2022 decrease of \$1.527 million due to SBIR.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 0253 / Nav & Electro-Optical Supt			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0253: Nav & Electro-Optical Supt	163.792	35.816	50.109	39.236	-	39.236	39.649	40.294	40.927	41.721	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

AN/BVY-1 Integrated Submarine Imaging System (ISIS) will continue to add new capabilities via Technical Insertion (TI)/Advanced Processing Build (APB) process while working across Submarine Warfare Federated Tactical System (SWFTS) programs to develop according to Development Security Operations (DevSecOps) software processes and a cloud based architecture. The Navy is pursuing a transformation across SWFTS (PE 0604503N Project 0219, PE 0604562N Project 0236, PE 0604777N Project 0253 and PE 0604503N Project 0775) to maximize cyber-resiliency and the speed of capability delivery. The FY24 decrease is due to the completion of the Signature Reduction Mast prototype effort. FY24 maintains the investment in imaging sensors and algorithms to improve submarine operations in high intensity littoral environments, intelligence gathering, real time imagery, and supports the safe and effective employment of surveillance and weapons systems. Funding also supports the completion of the Type Mast 24 development, commencement of the Type 24 Mast Capability Enhancement development, improvements to inboard hardware for processing outboard mast data, and supports non-recurring inboard hardware engineering activities which develop the Technical Insertion kits installed in all submarine classes. Finally, FY24 funds the TI-20/APB21 DT, TI-20/APB21 OT and other tests that verify software improvements funded in previous fiscal years.

The Navigation and Electro-Optical (E-O) program enables littoral operations by procuring ISIS, production of low profile masts (Low Profile Photonics Mast (LPPM), Type 20, and Type 24), maintenance and sustainment of periscope and legacy photonic masts, production and sustainment of Universal Modular Mast Systems and Dip Loops, and development of the ISIS inboard processing component of Submarine Warfare Federated Tactical Systems (SWFTS). The Department of the Navy established the ISIS to rapidly field the Type 18 periscope, RADAR rangefinder, Type 8 Mod 4 Infra-Red (IR) periscope systems, and integrate existing periscope imagery systems into a single imaging system for installation on board SSN 688 class and SEAWOLF class submarines. The ISIS baseline also includes the Imaging System with the Photonics mast (PM) and all configurations of low profile masts onboard VIRGINIA and Photonics Mast Variant (PMV) onboard SSGN class submarines and ISIS on SSBN class submarines. The PM, LPPM, and PMV design exploit a wide portion of the electro-magnetic spectrum through advanced E-O and thermal imaging and Electronic Warfare Support (ES)/communications intercept. The Common Submarine Imaging System (CSIS) capability development document (CDD), that covers both ISIS and Legacy Imaging systems was approved 22 Dec 2011 with an updated CDD approved on 15 Mar 2018. The CDD Annex for Low Profile Digital Photonics Mast, approved on 02 Dec 2019, provides additional specifications for the development of low profile masts within the ISIS system.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> ISIS and Photonics common software and hardware capabilities development and obsolescence	26.373	26.742	29.284	0.000	29.284
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
Commence the TI-24 capability development process which provides the necessary engineering, technical program, project and configuration management of the hardware and software baseline to incorporate additional sensitive software imaging algorithms, while concluding the development of TI-22. Continue the development					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System		Project (Number/Name) 0253 / Nav & Electro-Optical Supt		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
of the ISIS architecture with DEVSECOPS which will both rapidly insert of new war fighting capabilities and enhance cyber security protections.  <b>FY 2024 Base Plans:</b> Continues the development of TI-24 capabilities which includes the engineering, technical program, project and configuration management for the hardware and software baseline and modifying the ISIS architecture to support rapid insertion of new war fighting capabilities and enhanced cyber security protection.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The \$2.542M increase is due to development needed to increase capabilities for TI-24.						
<b>Title:</b> Type 24 Mast  <div>Articles:</div>		5.502 -	11.173 -	9.158 -	0.000 -	9.158 -
<b>FY 2023 Plans:</b> Expand the design, development, fabrication, and testing of the Type 24 mast effort begun in FY22. Specific efforts include: - Continue development of the Type 24 technical data package - Refine design reviews - Continue development of the test plans - Execute additional test events and environmental qualification testing  <b>FY 2024 Base Plans:</b> Specific efforts include: - Continue the test plans and commencement of test activities - Completion of development activities - Commence enhancement development to be incorporated into Type 24 mast  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The \$2.015M decrease in funding completes the Type 24 mast development and verification.						
<b>Title:</b> Type 20 Mast  <div>Articles:</div>		3.203 -	0.000 -	0.000 -	0.000 -	0.000 -



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System		Project (Number/Name) 0253 / Nav & Electro-Optical Supt		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2023 Plans: N/A						
FY 2024 Base Plans: N/A						
FY 2024 OCO Plans: N/A						
Title: Imaging Systems Test Efforts  Articles:		0.738 -	0.778 -	0.794 -	0.000 -	0.794 -
FY 2023 Plans: Inflationary increase to fund ISIS and mast system testing including the TI-22/APB-21 DT.						
FY 2024 Base Plans: Inflationary increase to fund ISIS and mast system testing including the TI-20/APB21 DT and TI-20/APB21 OT.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The \$0.016M increase is an inflation adjustment which will fund the design, management, and evaluation results of the TI-20/APB21 DT and TI-20/APB21 OT tests for modernizing boats.						
Title: Signature Reduction Mast Prototype  Articles:		0.000 -	11.416 1	0.000 -	0.000 -	0.000 -
FY 2023 Plans: Development and procurement of a prototype photonics mast which implements a holistic approach to susceptibility reduction in order to outpace adversary threats and minimize probability of counter detection throughout submarine operations. The effort funds new development of an engineering development model (EDM) in addition to tests and evaluations of various capabilities using advanced signature control techniques. Prototype will assess the capability and operational tradeoffs needed for reducing vulnerability to counter detection by implementing advanced signature control techniques not available on existing masts. Additional information is available at the classified level.						
FY 2024 Base Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy								Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 0253 / Nav & Electro-Optical Supt				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>								<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A												
FY 2024 OCO Plans: N/A												
FY 2023 to FY 2024 Increase/Decrease Statement: The \$11.416M decrease is due to completion of the Signature Reduction Mast Prototype effort.												
<b>Accomplishments/Planned Programs Subtotals</b>								35.816	50.109	39.236	0.000	39.236
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>	
• OPN/0840: Sub Periscope, Imaging Equip. and Supt Equip Program	209.792	261.011	262.951	-	262.951	289.922	274.693	285.958	290.554	Continuing	Continuing	
<b>Remarks</b>												
<b>D. Acquisition Strategy</b>												
The Acquisition Strategy for AN/BVY-1 Integrated Submarine Imaging System (ISIS) is dated 07 Jul 2003. The Single Acquisition Management Plan (SAMP) for the LPPM is dated 01 Jul 2013. The ISIS will provide mission critical, all weather, visual, and electronic search, digital image management, indication, warning, and platform architecture interface capabilities for SSN 688, SSN 21, SSN 774 and SSGN class submarines. The Single Acquisition Management Plan (SAMP) for the Type 20 Mast is dated 07 Jul 2017.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 0253 / Nav & Electro-Optical Supt					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPIF	Lockheed Martin : Manassas, VA	42.396	10.703	Dec 2021	11.408	Dec 2022	12.627	Dec 2023	-		12.627	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC : Newport, RI	24.473	4.756	Nov 2021	4.973	Nov 2022	5.072	Nov 2023	-		5.072	Continuing	Continuing	Continuing
Hardware Development	C/CPIF	Lockheed Martin : Manassas, VA	34.117	10.864	Dec 2021	10.308	Dec 2022	11.531	Dec 2023	-		11.531	Continuing	Continuing	Continuing
Hardware Development - Type 20/Mast Capability Enhancements	C/CPIF	Lockheed Martin : Manassas, VA	50.250	3.203	Dec 2021	0.000		0.000		-		0.000	0.000	53.453	-
Hardware Development - Type 24/Mast Capability Enhancements	C/CPIF	L-3 KEO : Northampton, MA	0.000	5.502	Jun 2022	11.173	Jan 2023	9.158	Jan 2024	-		9.158	Continuing	Continuing	Continuing
Signature Reduction Mast Prototype	C/CPIF	L-3 KEO : Northampton, MA	0.000	0.000		11.416	Jan 2023	0.000		-		0.000	0.000	11.416	-
Subtotal			151.236	35.028		49.278		38.388		-		38.388	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NUWC : Newport, RI	9.576	0.462	Oct 2021	0.487	Oct 2022	0.497	Oct 2023	-		0.497	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	COMOPTEVFOR : Norfolk, VA	2.211	0.276	Oct 2021	0.291	Oct 2022	0.297	Oct 2023	-		0.297	Continuing	Continuing	Continuing
Subtotal			11.787	0.738		0.778		0.794		-		0.794	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	NAVSEA : Washington, DC	0.769	0.050	Oct 2021	0.053	Oct 2022	0.054	Oct 2023	-		0.054	Continuing	Continuing	Continuing
Subtotal			0.769	0.050		0.053		0.054		-		0.054	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System					Project (Number/Name) 0253 / Nav & Electro-Optical Supt				
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	163.792	35.816		50.109		39.236		-		39.236	Continuing	Continuing	N/A	

Remarks

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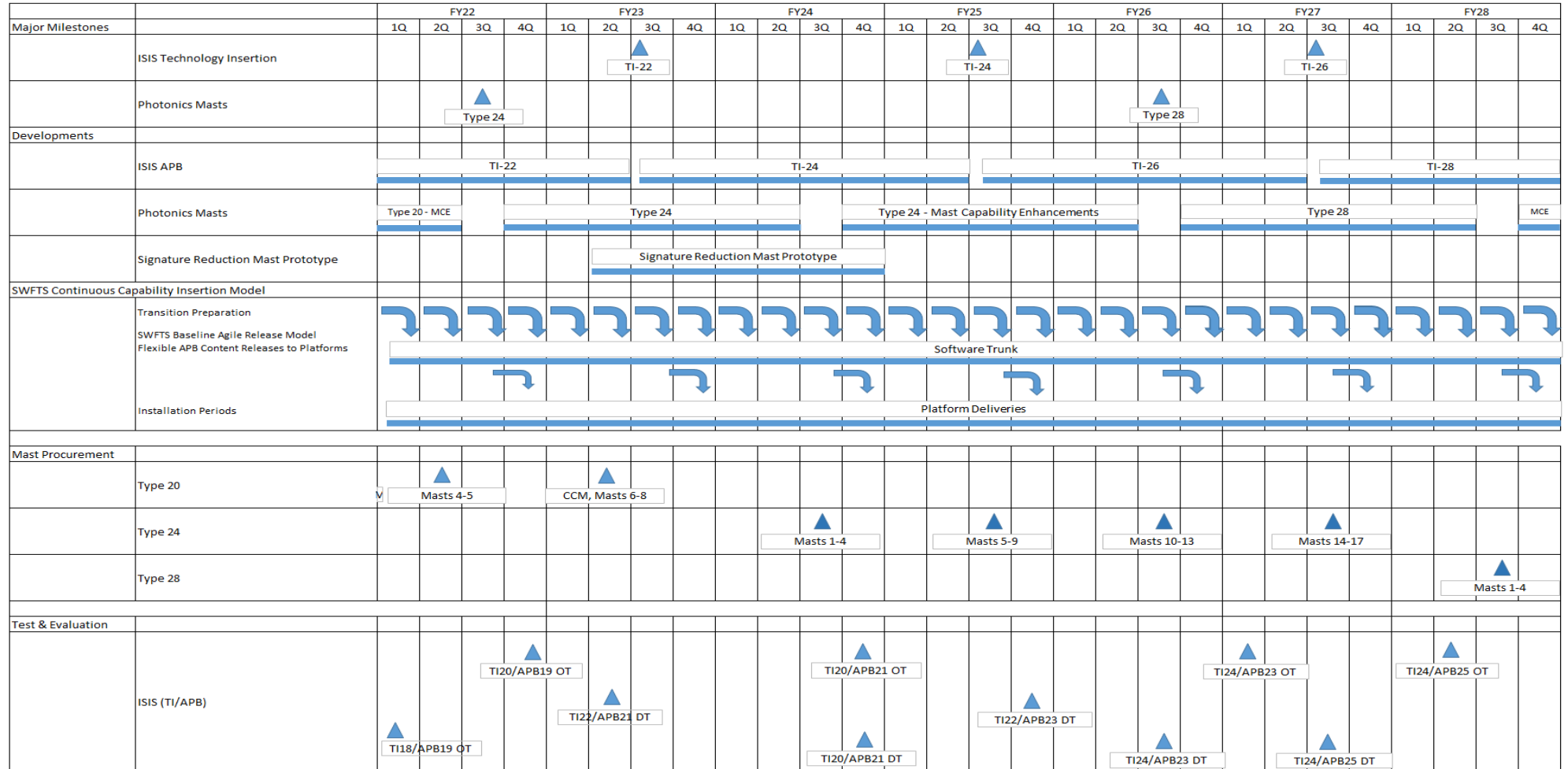
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604777N / Navigation/Id System

Project (Number/Name)  
0253 / Nav & Electro-Optical Supt



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604777N / Navigation/Id System

Project (Number/Name)

0253 / Nav &amp; Electro-Optical Supt

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Nav &amp; Electro-Optical Supt</b>				
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-22)	3	2023	3	2023
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-24)	3	2025	3	2025
Major Milestones: ISIS Technology Insertion: ISIS Technology Insertion Fielding (TI-26)	3	2027	3	2027
Developments: ISIS APB: Schedule Detail	1	2022	1	2028
Developments: ISIS APB: ISIS TI-24	3	2023	2	2025
Developments: ISIS APB: ISIS TI-26	3	2025	2	2027
Developments: ISIS APB: ISIS TI-28	3	2027	4	2028
Developments: ISIS APB: Developments: Signature Reduction Mast Prototype	2	2023	4	2024
Developments: Mast Development: Type 24	4	2022	2	2024
Mast Procurement: Type 20 (Buy): POR Masts 4-5	2	2022	2	2022
Mast Procurement: Type 20 (Buy): CCM / POR Masts 6-8	2	2023	2	2023
Mast Procurement: Type 24 (Buy): POR Masts 1-4	3	2024	3	2024
Mast Procurement: Type 24 (Buy): POR Masts 5-9	3	2025	3	2025
Mast Procurement: Type 24 (Buy): POR Masts 10-13	3	2026	3	2026
Mast Procurement: Type 24 (Buy): POR Masts 14-17	3	2027	3	2027
Mast Procurement: Type 28 (Buy): POR Masts 1-4	3	2028	3	2028
Test & Evaluation: ISIS (TI/APB): TI-18/APB-19 OT	1	2022	1	2022
Test & Evaluation: ISIS (TI/APB): TI-20/APB-19 OT	4	2022	4	2022
Test & Evaluation: ISIS (TI/APB): TI-22/APB-21 DT	2	2023	2	2023
Test & Evaluation: ISIS (TI/APB): TI-20/APB-21 DT	4	2024	4	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System		Project (Number/Name) 0253 / Nav & Electro-Optical Supt	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Test & Evaluation: ISIS (TI/APB): TI-20/APB-21 OT		4	2024	4	2024
Test & Evaluation: ISIS (TI/APB): TI-22/APB-23 DT		4	2025	4	2025
Test & Evaluation: ISIS (TI/APB): TI-24/APB-23 DT		3	2026	3	2026
Test & Evaluation: ISIS (TI/APB): TI-24/APB-23 OT		1	2027	1	2027
Test & Evaluation: ISIS (TI/APB): TI-24/APB-25 DT		3	2027	3	2027
Test & Evaluation: ISIS (TI/APB): TI-24/APB-25 OT		2	2028	2	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 0676 / Improve ID Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0676: Improve ID Development	65.451	10.104	1.244	3.710	-	3.710	3.219	2.266	2.307	2.371	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. In addition to providing platform identification for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and Air Traffic Control. The Improved ID Development project addresses the Mark XIIA Mode 5 and Mode S upgrades to the existing AN/UPX-29(V) Mark XII family of systems that is Joint and North Atlantic Treaty Organization interoperable, as well as modernization of the DDG 1000 Zumwalt Class IFF Sensor Suite . The AN/UPX-29(V) Interrogator System is comprised of the Interrogator Set AN/UPX-24(V), OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment such as AN/UPX-37, AN/UPX-41(C) or AN/UPX-45(C) Digital Interrogators and associated equipment. The DDG 1000 IFF Sensor Suite is comprised of three electronically scanned array (ESA) antennas, one UPX-42(C) Interrogator, and three RT-1912(C)/APX Transponders. Additionally, the Improved ID Development project may include product improvements designed to be installed through upgrade and deficiency correction studies, which in turn become engineering changes to other IFF solutions.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Mark XIIA Mode 5 and Mode S Improvement for AN/UPX-29(V)	0.692	0.229	0.463	0.000	0.463
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Engineering, development, and integration of improvements to Mark XIIA Shipboard Identification Friend or Foe (IFF) Systems, including, but not limited to 1) AN/UPX-29(V) Interrogator System, which is comprised of the Interrogator Set AN/UPX-24, OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment such as AN/UPX-41, AN/UPX-45 or AN/UPX-50 Digital Interrogators, and 2) AN/UPX-46(V) Interrogator System which is comprised reduced form factor Interrogator Set, generic rotating IFF Antennas, and Mark XII or Mark XIIA equipment such as AN/UPX-41, AN/UPX-45 or AN/UPX-50 Digital Interrogators. Funds development and integration of Mark XIIA Mode 5 and Mode Select (S) Improvements to the AN/UPX-29(V) systems on CG47, DDG51, LHD1, LPD17, LHA6, and CVN68, CVN78, and future ship classes. Funds development and integration of Mark XIIA Mode 5 and Mode Select (S) Improvements to the AN/UPX-46 Systems on LCS1, LCS2, LSD41 and LSD49 Ship Classes. Correct software and performance deficiencies from Integrated Test and Operational Test, Aegis, and other Combat System Integration events to support Combat System integration with Aegis Weapon Systems (AWS), Ship Self Defense System (SSDS), Component-Based Total-Ship System - 21st Century (COMBATSS-21), Advanced Combat Direction System (ACDS), or Air Traffic Control Systems using Mark XIIA equipment to include engineering investigations, Engineering Change Proposal development, and testing. Provides core Integrated Logistics Support documentation; formalizes					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System		Project (Number/Name) 0676 / Improve ID Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
hardware/software configuration: finalizes technical/ design data, resolves testing anomalies, and integrates with shipboard training systems.  <b>FY 2023 Plans:</b> Continue AN/UPX-29(V) Interrogator System integration testing with Mode 5/Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades in preparation for deployment to Aegis and Ship Self Defense System (SSDS) Platforms. Commence AN/UPX-46(V) Interrogator System integration testing with Mode 5/ Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades in preparation for deployment to COMBATTS-21 Platforms. Evaluate inter-operability test data to validate planned combat systems design changes and capability updates.  <b>FY 2024 Base Plans:</b> Continue AN/UPX-29(V) Interrogator System integration testing with Mode 5/Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades in preparation for deployment to Aegis and Ship Self Defense System (SSDS) Platforms. Commence AN/UPX-46(V) Interrogator System integration testing with Mode 5/ Mode S Capable AN/UPX-45 Digital Interrogator obsolescence upgrades in preparation for deployment to COMBATTS-21 Platforms. Evaluate inter-operability test data to validate planned combat systems design changes and capability updates.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to plans for oversight of Mode 5 and Mode S integration events and test data analysis for initial fielding on both variants of the LCS Ship Class, LSD 41 and LSD 49 Ship Classes, and US Coast Guard WMSL 750 Ship Class.						
Title: AN/UPX-29(V) Management Support  <div>Articles:</div>		0.695 -	0.228 -	0.729 -	0.000 -	0.729 -
Description: Engineering and Program Management of the AN/UPX 29(V) and AN/UPX-46(V) Interrogator Systems. Perform related system integration efforts.  <b>FY 2023 Plans:</b> Continue logistics and technical data management for the AN/UPX 29(V) Mode 5/Mode S integration. Implement improved Cyber designs and cyber security controls. Resolve OE-120 and AN/UPX-45 retro-fit						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System		Project (Number/Name) 0676 / Improve ID Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
related ship change document issues. Assume management of AN/UPX-46(V) ship change documents for LCS 1 and LCS 2 ship classes.  <b>FY 2024 Base Plans:</b> Continue logistics and technical data management for the AN/UPX 29(V) Mode 5/Mode S integration. Implement improved Cyber designs and cyber security controls. Resolve OE-120 and AN/UPX-45 retro-fit related ship change document issues. Assume management of AN/UPX-46(V) ship change documents for LCS 1 and LCS 2 ship classes.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to conversion of Contractor Furnished Equipment IFF Systems to organic support. Increased oversight of host platform test and integration required in FY24 as both variants of the LCS Ship Class, LSD 41 and LSD 49 Ship Classes, and US Coast Guard WMSL 750 Ship Class transition to UPX-46 IFF Systems commencing in FY25.						
<b>Title:</b> DDG 1000 Modernization  <b>Articles:</b>  <b>Description:</b> The IFF System will transition from a Contractor Furnished Equipment (CFE) suite to a government (organically) supported IFF System. Establish engineering support and Integrated Product Support (IPS) elements for transition of the DDG 1000 ship class' Contractor Furnished Equipment (CFE) IFF sensor suite to an organically supported and documented system.  <b>FY 2023 Plans:</b> N/A  <b>FY 2024 Base Plans:</b> N/A  <b>FY 2024 OCO Plans:</b> N/A		1.600 -	0.000 -	0.000 -	0.000 -	0.000 -
<b>Title:</b> UPX-36 Engineering Change Proposal - Mode 5 Capable  <b>Articles:</b>		1.817 -	0.183 -	0.796 -	0.000 -	0.796 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System		Project (Number/Name) 0676 / Improve ID Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>Description:</b> Upgrade the AN/UPX-36(V) from Mark XII to Mark XIIA with Mode 5 capability. The AN/UPX-36(V) is a centralized Identification Friend or Foe (IFF) interrogator system consisting of a processor, dedicated IFF antennas, and Mark XII interrogation capability providing identification of friendly and neutral contacts via cooperative means. System installations are limited to the 12 LSD41/49 class ships currently in-service.</p> <p><b>FY 2023 Plans:</b> Continue system integration efforts. Provide technical documentation to support combat system certification with SSDS or ACDS combat system for LSD 41 and LSD 49 ship classes as configured.</p> <p><b>FY 2024 Base Plans:</b> Continue system integration efforts. Provide technical documentation to support combat system certification with SSDS or ACDS combat system for LSD 41 and LSD 49 ship classes as configured.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to transition from local development testing in FY23 to Land based test site integration in FY24 at Surface Combat Systems Center, Wallops Island, for Ship Self Defense System (SSDS) baselines. Testing will verify proper UPX-36 replacement to SSDS host platform integration prior to fielding in FY25.</p>						
<p><b>Title:</b> Radar Track Discriminator System (RTDS) UPX-34A ECP Part I</p> <p><b>Articles:</b></p> <p><b>Description:</b> Capability upgrades to the AN/UPX-34A(V) RTDS, which is installed on CG47 Class Aegis Cruisers and provides high fidelity, long range, Non-cooperative Target Recognition (NCTR) capability to support the Air-Sea battle by providing timely tactical engagement decisions by Aegis action officers.</p> <p><b>FY 2023 Plans:</b> Conclude system integration efforts. Provide technical documentation to support combat system certification of RTDS upgrades with Aegis combat system on CG47 ship class.</p> <p><b>FY 2024 Base Plans:</b> Provide technical documentation to support combat system certification of RTDS upgrades with Aegis combat system on CG47 ship class.</p> <p><b>FY 2024 OCO Plans:</b></p>		5.300 -	0.604 -	1.722 -	0.000 -	1.722 -

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023							
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604777N / Navigation/Id System		<b>Project (Number/Name)</b> 0676 / Improve ID Development							
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>					
N/A											
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase due to transition from local development testing in FY23 to Land based test site integration in FY24 at Surface Combat Systems Center, Wallops Island, for Aegis baselines. New capability updates require initial testing and integration to verify proper UPX-34A replacement to Aegis host platform integration.											
<b>Accomplishments/Planned Programs Subtotals</b>		10.104	1.244	3.710	0.000	3.710					
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2851: ID Systems	46.918	59.226	59.234	-	59.234	60.444	61.763	62.967	64.407	116.736	917.577
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
The acquisition strategy is to develop Mode 5 Engineering Change Proposals for modern Mark XII Identification Friend or Foe (IFF) equipment and integrate into all Navy Combat Weapons systems platforms and augment the Navy's Cooperative Identification Capability to include Mode 5.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 0676 / Improve ID Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NAWCAD : St Inigoes, MD	10.743	0.625	Nov 2021	0.200	Nov 2022	0.850	Nov 2023	-		0.850	Continuing	Continuing	Continuing
Ship Integration	WR	NAWCAD : St Inigoes, MD	2.699	0.122	Nov 2021	0.124	Nov 2022	0.200	Nov 2023	-		0.200	0.000	3.145	-
Systems Engineering	WR	NAWCAD : St Inigoes, MD	7.307	0.789	Nov 2021	0.204	Nov 2022	0.392	Nov 2023	-		0.392	0.000	8.692	-
DDG 1000 Development	C/FFP	Raytheon : Tewksbury, MA	1.262	1.287	Nov 2021	0.000		0.000		-		0.000	0.000	2.549	-
OE-120 Tech Refresh	SS/FFP	BAE : Nashua, NH	18.810	0.000		0.000		0.000		-		0.000	0.000	18.810	15.483
RTDS UPX-34A ECP Part I	WR	NAWCAD : St Inigoes, MD	4.842	4.863	Nov 2021	0.125	Nov 2022	0.130	Nov 2023	-		0.130	0.000	9.960	-
UPX-36 ECP Part I	WR	NAWCAD : St Inigoes, MD	1.283	1.239	Nov 2021	0.171	Nov 2022	0.178	Nov 2023	-		0.178	0.000	2.871	-
Subtotal			46.946	8.925		0.824		1.750		-		1.750	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Configuration Management	WR	NAWCAD : St Inigoes, MD	0.169	0.000		0.000		0.000		-		0.000	0.000	0.169	-
ILS	WR	NAWCAD : St Inigoes, MD	3.015	0.080	Nov 2021	0.082	Nov 2022	0.083	Nov 2023	-		0.083	0.000	3.260	-
Software Development	WR	NAWCAD : St Inigoes, MD	6.230	0.303	Nov 2021	0.108	Nov 2022	0.117	Nov 2023	-		0.117	0.000	6.758	-
Technical Data	WR	NAWCAD : St Inigoes, MD	2.272	0.105	Nov 2021	0.076	Nov 2022	0.080	Nov 2023	-		0.080	0.000	2.533	-
Training	WR	NAWCAD : St Inigoes, MD	0.200	0.000		0.000		0.000		-		0.000	0.000	0.200	-
Engineering	WR	NAWCAD : PAX River, MD	0.244	0.000		0.000		0.917	Nov 2023	-		0.917	0.000	1.161	-
Subtotal			12.130	0.488		0.266		1.197		-		1.197	0.000	14.081	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 0676 / Improve ID Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NAWCAD : St Inigoes, MD	2.559	0.000		0.000		0.000		-		0.000	0.000	2.559	-
Subtotal			2.559	0.000		0.000		0.000		-		0.000	0.000	2.559	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Various : California, MD	3.816	0.691	Nov 2021	0.154	Nov 2022	0.763	Nov 2023	-		0.763	0.000	5.424	2.813
Subtotal			3.816	0.691		0.154		0.763		-		0.763	0.000	5.424	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			65.451	10.104		1.244		3.710		-		3.710	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023																											
Appropriation/Budget Activity 1319 / 5														R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System														Project (Number/Name) 0676 / Improve ID Development													
Mode 5 Improv Identification Dev	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028																
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q													
Acquisition Milestones																																									
Milestones																																									
Test & Evaluation Milestones																																									
Deliveries																																									
	Mode 5 Prod. Line Insertion																																								
	Mode 5 SCDs																																								
	Mode 5 Host Platform Integration																																								
	Mode 5 FRP Deliveries																																								
RTDS UPX-34A																																									
System Development (UPX-34A ECP)																																									
UPX-36																																									
System Development (UPX-36 ECP)																																									
DDG 1000 Modernization																																									
	Development of Integrated Product Support elements																																								
2024PB - 0604777N - 0676																																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System	Project (Number/Name) 0676 / Improve ID Development	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Mode 5 Improv Identification Dev</i>				
Deliveries: Mode 5 - Production Line Insertion	1	2022	4	2028
Deliveries: Mode 5 - Prepare and Evaluate ECPs/SCDs	1	2022	4	2028
Deliveries: Mode 5 - Host Platform Integrations	1	2022	4	2028
Deliveries: Mode 5 - FRP Deliveries	1	2022	4	2028
RTDS UPX-34A: System Development (UPX-34A ECP)	1	2022	4	2028
UPX-36: System Development (UPX-36 ECP)	1	2022	4	2028
DDG 1000 Modernization: Development of Integrated Product Support elements	1	2022	4	2023



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 1253 / Combat Ident System			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1253: Combat Ident System	192.274	1.432	1.856	2.316	-	2.316	2.128	2.041	2.079	2.137	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

MARK (MK) XIIA Mode 5 provides improved secure cooperative combat identification via Identification Friend or Foe (IFF). Mode 5 is developed in cooperation with North Atlantic Treaty Organization, with the DoD implementation governed by AIMS 03-1000A, AIMS 03-1000B and USN requirements defined in ORD # 577-06-01. IFF product improvements are designed to be installed through upgrade and deficiency correction studies, which in turn become engineering changes to IFF interrogators and transponders and their associated cryptographic material.

The Navy MK XIIA Mode 5 program was approved for entry in Systems Development and Demonstration phase in August 2003 and into the Production and Deployment Phase and Low Rate Initial Production in July 2006, and Full Rate Production July 2012. The Navy Mode 5 program achieved Initial Operational Capability (IOC) in 2012 in accordance with the ORD. Mode 5 capable equipment was fielded in USN/USMC platforms in accordance with Joint Requirements Oversight Council Memorandums (047-07, 122-08 and 108-13) in support of Joint Mode 5 IOC in 2014 and Joint Full Operational Capability in FY2020.

RDT&E articles include Mode 5 cryptographic modules and associated hardware and software changes for IFF interrogators and transponders, including, but not limited to: AN/APX-118/123, AN/APX-119, AN/APX-111, and AN/ZPX-2087 Micro Transponder equipment. RDT&E units are required for government and contractor labs to support aircraft and ship integrations, test sites, test aircraft, and unmanned aircraft systems.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Mode 5 Systems Engineering and Integrated Logistics Support (ILS)	0.239	0.241	0.808	0.000	0.808
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Performed systems engineering and analysis in support of Mode 5 hardware/software development and engineering change proposals on Identification Friend or Foe (IFF) interrogators and transponders, including but not limited to: AN/APX-123 Common Digital Transponder, AN/APX-119 Transponder, AN/APX-111 Combined Interrogator Transponder, AN/ZPX-2087 Micro Transponder, Cryptographic Modules, Mode 5 Engineering Test Equipment, and Mode 5 support equipment.					
<b>FY 2023 Plans:</b> Continue research and development of APX-123 modernization to address cyber security, protective technologies, compliance with updated standards, and hardware obsolescence redesign.					
<b>FY 2024 Base Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 1253 / Combat Ident System					
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>									<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Continue research and development of APX-123 modernization to address cyber security, protective technologies, compliance with updated standards, and hardware obsolescence redesign.													
<b>FY 2024 OCO Plans:</b> N/A													
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase due to adding Engineering and ILS support for AN/APX-2087 Micro Transponder.													
<b>Title:</b> Mode 5 Upgrade Developmental Test & Operational Test									1.193	1.615	1.508	0.000	1.508
<b>Articles:</b>									-	-	-	-	-
<b>Description:</b> Perform Mode 5 integrated and operational test phases for AN/APX-123 Common Transponder, AN/APX-119 Transponder, small form factor IFF for unmanned aircraft systems, and AN/APX-111 Combined Interrogator Transponder.													
<b>FY 2023 Plans:</b> Continue small form factor IFF transponder testing. Continue testing of Mode 5 mitigating solutions for deploying platforms that did not meet Joint Full Operational Capability (JFOC).													
<b>FY 2024 Base Plans:</b> Continue small form factor IFF transponder testing. Continue testing of Mode 5 mitigating solutions for deploying platforms that did not meet Joint Full Operational Capability (JFOC).													
<b>FY 2024 OCO Plans:</b> N/A													
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease due cost sharing of IFF Micro Transponder DT & OT funding requirement with the Small Business Innovative Research (SBIR) Program.													
<b>Accomplishments/Planned Programs Subtotals</b>									1.432	1.856	2.316	0.000	2.316
<b>C. Other Program Funding Summary (\$ in Millions)</b>													
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>		
• OPN/2851: ID Systems	46.918	59.226	59.234	-	59.234	60.444	61.763	62.967	64.407	116.736	917.577		
• APN/0582: ID Sys	13.100	3.828	13.085	-	13.085	7.047	3.457	3.763	3.905	Continuing	Continuing		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 1253 / Combat Ident System			
C. Other Program Funding Summary (\$ in Millions)											
	<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u> <u>Total Cost</u>
<u>Remarks</u>											
<b>D. Acquisition Strategy</b>											
The Acquisition Strategy is to develop Mode 5 Engineering Change Proposals to modernize Mark XII Identification Friend or Foe (IFF) equipment or insert Mode 5 into existing platforms by JROC memorandums (047-07, 122-08 and 108-13). After integration into all Navy Combat Weapons systems platforms, the Navy will transition Cooperative Identification Capability to Mode 5.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 1253 / Combat Ident System					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : PAX River, MD	16.102	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : St Inigoes, MD	15.712	0.239	Nov 2021	0.241	Nov 2022	0.808	Nov 2023	-		0.808	Continuing	Continuing	Continuing
Primary Hardware Development	Various	Sikorsky : Stratford, CT	3.872	0.000		0.000		0.000		-		0.000	0.164	4.036	4.200
Prior Year Prod Dev Services costs no longer funded in FYDP	Various	Various : Various	90.857	0.000		0.000		0.000		-		0.000	0.000	90.857	43.213
Subtotal			126.543	0.239		0.241		0.808		-		0.808	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ILS	Various	Various : Various	5.344	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Support Services costs no longer funded in FYDP	Various	Various : Various	2.761	0.000		0.000		0.000		-		0.000	0.000	2.761	2.761
Subtotal			8.105	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : PAX River, MD	32.860	1.193	Nov 2021	1.615	Nov 2022	1.508	Nov 2023	-		1.508	7.705	44.881	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	Various	Various : Various	20.370	0.000		0.000		0.000		-		0.000	0.000	20.370	3.456
Subtotal			53.230	1.193		1.615		1.508		-		1.508	7.705	65.251	N/A

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### Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604777N / Navigation/Id System

Project (Number/Name)  
1253 / Combat Ident System

Combat Identification Systems	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones																												
Systems Development																												
Hardware Development	ECPs and SCDs																											
Software Development Integration																												
Test and Evaluation																												
Technical Evaluation	Small Form Factor																											
Operational Evaluation	Follow-on T & E																											
Production Milestones																												
Contract Awards																												
Deliveries																												
	FRP Deliveries																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System	Project (Number/Name) 1253 / Combat Ident System

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Combat Identification Systems</b>				
Systems Development: Hardware Development: Prepare & Evaluate ECPs/SCDs	1	2022	4	2028
Test and Evaluation: Technical Evaluation: Small Form Factor	1	2022	1	2022
Test and Evaluation: Operational Evaluation: Follow-on Test and Evaluation	1	2022	4	2028
Deliveries: FRP Deliveries	1	2022	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	1.158	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.158
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

MARK (MK) XIIA Mode 5 provides improved secure cooperative combat identification via Identification Friend or Foe (IFF). Mode 5 is developed in cooperation with North Atlantic Treaty Organization, with the DoD implementation governed by AIMS 03-1000A, AIMS 03-1000B and USN requirements defined in ORD # 577-06-01. Research, development, and acquisition to support a micro IFF transponder/interrogator with Mode 5 in order to meet the space, weight, and power (SWaP) requirements for Group 2 and 3 Unmanned Aerial Vehicles (UAVs), and other unmanned systems.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b>Congressional Add:</b> Navy micro interrogator	1.158	0.000
<b>FY 2022 Accomplishments:</b> Phase 3 Small Business Innovation Research (SBIR) Contract award		
<b>FY 2023 Plans:</b> N/A		
<b>Congressional Add:</b> Micro 5 IFF interrogator	0.000	7.000
<b>FY 2022 Accomplishments:</b> N/A		
<b>FY 2023 Plans:</b> Small Business Innovation Research (SBIR) Contract award. Establish Baseline configuration of Micro Interrogator Lay-in Logistics support for Micro Transponder & Interrogator to provide for Fleet sustainability and operator training.		
<b>Congressional Adds Subtotals</b>	1.158	7.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The Acquisition Strategy is to develop a micro IFF transponder/interrogator solution through Small Business Innovation Research (SBIR) and other government development organizations.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System						Project (Number/Name) 9999 / Congressional Adds			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development - SBIR	Various	R-Cubed Engineering : Palmetto, FL	0.000	1.158	Sep 2022	7.000	Jul 2023	0.000		-		0.000	0.000	8.158	-
Subtotal			0.000	1.158		7.000		0.000		-		0.000	0.000	8.158	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	1.158		7.000		0.000		-		0.000	0.000	8.158	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604777N / Navigation/Id System

Project (Number/Name)  
9999 / Congressional Adds

Navy micro interrogator	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Development				Phase 3 ◆		Preliminary/Critical Design Review (P/CDR) ◆	Prototype Delivery ◆	Prototype Testing ◆																				

2024PB - 0604777N - 9999

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0604777N / Navigation/Id System

Project (Number/Name)  
9999 / Congressional Adds

Micro 5 IFF interrogator	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Development																												

2024PB - 0604777N - 9999

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604777N / Navigation/Id System	Project (Number/Name) 9999 / Congressional Adds	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Navy micro interrogator</i></b>				
Development: Preliminary/Critical Design Review (P/CDR)	2	2023	2	2023
Development: Phase 3 Contract	4	2022	4	2022
Development: Prototype Delivery	3	2023	3	2023
Development: Prototype Testing	4	2023	4	2023
<b><i>Micro 5 IFF interrogator</i></b>				
Development: SBIR Contract Award	4	2023	4	2023
Development: Development Baseline configuration of Micro Interrogator	4	2023	4	2024

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy											<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy I BA 5: System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0604800M <i>I Joint Strike Fighter (JSF) - EMD</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	51,169.955	0.555	0.611	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,171.121
2262: <i>Joint Strike Fighter EMD STOVL</i>	51,169.955	0.555	0.611	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,171.121
<b>Program MDAP/MAIS Code:</b> <b>Project MDAP/MAIS Code(s):</b> 198												
<b>A. Mission Description and Budget Item Justification</b> <p>The F-35 Joint Strike Fighter (JSF) Program has developed and fielded an affordable, highly common family of next generation strike aircraft for the USN, USAF, USMC and allies. The three variants are the F-35A Conventional Takeoff and Landing; F-35B Short Takeoff and Vertical Landing; and the F-35C Aircraft Carrier suitable variant. The F-35A is a stealthy multi-role aircraft, primary air-to-ground for the Air Force to replace the F-16 and A-10 and complement the F-22. The F-35B variant is a multi-role strike fighter aircraft to replace the AV-8B and F/A-18 for the Marine Corps, the Sea Harrier and GR 7 for the United Kingdom, and the AV-8 currently employed by the Italian Navy. The F-35C provided the Department of the Navy with a multi-role, stealthy strike fighter aircraft to complement the F/A-18E/F.</p> <p>Funding at the accomplishment/planned program level is reported as the total of all services and partners as these activities support all aircraft variants.</p> <p>The System Development and Demonstration (SDD) budget funded a total quantity of 20 RDT&amp;E test articles to include 6 ground test articles and 14 flight test articles for USN, USMC, and USAF use.</p> <p>JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under System Development and Demonstration because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		PE 0604800M I Joint Strike Fighter (JSF) - EMD			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.577	0.611	0.625	-	0.625
Current President's Budget	0.555	0.611	0.000	-	0.000
Total Adjustments	-0.022	0.000	-0.625	-	-0.625
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.022	0.000			
• Program Adjustments	0.000	0.000	-0.625	-	-0.625
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604800M / Joint Strike Fighter (JSF) - EMD				Project (Number/Name) 2262 / Joint Strike Fighter EMD STOVL			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2262: Joint Strike Fighter EMD STOVL	51,169.955	0.555	0.611	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,171.121
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 198												

**Note**

Beginning in FY2022, the JSF EMD (Project Unit 2262) budget is service specific with the following services removed:  
 USAF PE 0604800F BPAC 653831  
 USN PE 0604800N Project Unit 2261

**A. Mission Description and Budget Item Justification**

The F-35 Joint Strike Fighter (JSF) Program has developed and fielded an affordable, highly common family of next generation strike aircraft for the USN, USAF, USMC and allies. The three variants are the F-35A Conventional Takeoff and Landing; F-35B Short Takeoff and Vertical Landing; and the F-35C Aircraft Carrier suitable variant. The F-35A is a stealthy multi-role aircraft, primary air-to-ground for the Air Force to replace the F-16 and A-10 and complement the F-22. The F-35B variant is a multi-role strike fighter aircraft to replace the AV-8B and F/A-18 for the Marine Corps, the Sea Harrier and GR 7 for the United Kingdom, and the AV-8 currently employed by the Italian Navy. The F-35C provided the Department of the Navy with a multi-role, stealthy strike fighter aircraft to complement the F/A-18E/F.

The System Development and Demonstration (SDD) budget funded a total quantity of 20 RDT&E test articles to include 6 ground test articles and 14 flight test articles for USN, USMC, and USAF use.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> System Development and Demonstration (SDD)	0.555	0.611	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> SDD execution of the Air System (Lockheed Martin) including International Commonality Efforts; includes airframe, vehicle and mission systems, autonomic logistics, systems engineering & test efforts.					
<b>FY 2023 Plans:</b> Conclude SDD execution of Air System (Lockheed Martin), including International Commonality Effort which includes, airframe, vehicle systems, mission systems, autonomic logistics, systems engineering, and integrated test efforts. Activity aligned to IMS in accordance with variant IOC. Conclude SDD closure activities including					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604800M / Joint Strike Fighter (JSF) - EMD		<b>Project (Number/Name)</b> 2262 / Joint Strike Fighter EMD STOVL	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
FCA/PCA (Functional Configuration Audit/Production Configuration Audit) in order to establish production specification and transition to post-SDD, production and sustainment.					
<b>FY 2024 Base Plans:</b> N/A					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The decrease of (0.611) from FY2023 to FY2024 is due to SDD efforts have been completed and program has transitioned to PE0604840M.					
<b>Accomplishments/Planned Programs Subtotals</b>					
	0.555	0.611	0.000	0.000	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDT&E/0604800F: F-35A Joint Strike Fighter SDD	0.013	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	22,333.771
• RDT&E/0604800N: F-35C JT Strike Fighter (JSF) - EMD	0.252	0.234	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,169.915
• APN/0605B: F-35B Joint Strike Fighter STOVL Spares	126.970	136.770	74.496	-	74.496	75.957	0.000	0.000	0.000	3,363.198	4,360.631
• APN/0605C: F-35C Joint Strike Fighter CV Spares	221.402	93.971	98.303	-	98.303	125.515	0.000	0.000	0.000	Continuing	Continuing
• APN/0592: F-35B STOVL Series	161.776	216.356	287.711	-	287.711	267.291	308.020	296.864	235.928	Continuing	Continuing
• APN/0593: F-35C CV Series	118.933	208.336	166.464	-	166.464	189.294	195.169	194.251	198.135	Continuing	Continuing
• APN/0147C: F-35C Joint Strike Fighter CV AP	185.695	387.596	261.374	-	261.374	93.581	83.943	159.246	151.797	1,210.736	5,001.662
• APN/0147: F-35C Joint Strike Fighter CV	2,369.128	1,953.676	2,495.288	-	2,495.288	1,939.606	2,044.096	1,881.786	1,763.907	18,232.382	57,452.185
• APN/0152C: F-35B Joint Strike Fighter STOVL AP	216.814	200.118	169.125	-	169.125	195.153	183.820	242.603	256.948	825.027	4,935.367



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604800M / Joint Strike Fighter (JSF) - EMD				Project (Number/Name) 2262 / Joint Strike Fighter EMD STOVL				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• APN/0152: F-35B Joint Strike Fighter STOVL	2,450.068	2,210.949	2,227.503	-	2,227.503	2,143.996	2,197.009	2,068.965	2,564.673	12,724.163	48,513.456	
• C2D2 International: International Continuous Capability Development and Delivery	285.969	211.292	208.053	-	208.053	177.542	0.000	0.000	0.000	Continuing	Continuing	
• RDT&E/0604840N: F-35C C2D2	473.748	491.513	463.383	-	463.383	436.227	350.719	368.456	338.111	Continuing	Continuing	
• RDT&E/0604840M: F-35B C2D2	501.609	525.338	447.484	-	447.484	446.167	388.414	340.770	363.472	Continuing	Continuing	
• 0604840F F-35A C2D2: USAF Continuous Capability Development and Delivery	549.279	450.915	521.012	-	521.012	586.709	0.000	0.000	0.000	Continuing	Continuing	
Remarks												
This is a joint program with no executive service. Service Acquisition Execution (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Air Force.												
Program Element 0604800N/0604800M continues USN development efforts budgeted in 0603800N prior to 2002.												
The United Kingdom, Italy, Netherlands, Canada, Australia, Denmark, and Norway are participants in the SDD phase of JSF.												
Note: The USAF/USN/USMC procurement lines include Aircraft Procurement and Advanced Procurement only. Initial Spares and Repair Parts for all services are reflected in separate lines. International Partner Funding also includes funds provided under the Italy and Netherlands Bilateral agreements.												
RELATED RDT&E: Funding prior to JSF SDD (FY94-FY01): USN PE 0603800N \$1,950.617M; USAF PE 0603800F \$1,907.352M; DARPA PE 0603800E \$118.056M; and International Partner contributions of \$253.921M for a total of \$4,229.946M.												
D. Acquisition Strategy												
The SDD program consists of a cost-reimbursement contract awarded to Lockheed Martin Aeronautics Company to develop the F-35 Air System, consisting of three aircraft variants and its associated logistics support system, for the U.S. Services and international participants. Similarly, a cost-reimbursement contract was awarded to Pratt & Whitney to develop the F135 propulsion system. Ground and flight testing will be conducted during development to accomplish validation and verification, with the extensive use of modeling and simulation to offset the risk of this large, complex, and concurrent lifecycle program. A comprehensive logistics support environment, including an integrated training system for aircrew, maintenance, and support personnel, is also being developed.												
On 25 April 2011, the Department of Defense terminated the development of the General Electric Rolls-Royce Fighter Engine Team F136 propulsion system.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604800M / Joint Strike Fighter (JSF) - EMD	Project (Number/Name) 2262 / Joint Strike Fighter EMD STOVL
<p>The F-35 Program has made international involvement a key element of the acquisition strategy. This includes international partnership in the development, production, and sustainment phases of the lifecycle. Additional international participation includes Foreign Military Sales arrangements.</p> <p>In Fiscal Year 2007, separate cost-type contracts were awarded to Lockheed Martin Aeronautics Company and Pratt &amp; Whitney to begin low rate initial production for F-35 air vehicles, propulsion systems, and sustainment for the fielded systems. Transition to fixed-price-type procurement contracts occurred with the fourth low rate lot. To provide logistics support for delivered aircraft, Performance-Based Logistics cost-type contracts will be awarded to Lockheed Martin Aeronautics Company and Pratt &amp; Whitney.</p> <p>At the completion of Low Rate Initial Production, a Defense Acquisition Board review, and Milestone Decision Authority approval, the F-35 Program will enter Full Rate Production. Fixed-price procurement contracts will be awarded for F-35 air vehicles and propulsion systems for the U.S. Services and international participants. Multiyear procurement authority for the F-35 Air System will be requested for Full Rate Production. Concurrently, a fixed-price-type Performance Based Logistics contracts for sustainment will be requested to support multi-Service and multi-national requirements.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604800M / Joint Strike Fighter (JSF) - EMD					Project (Number/Name) 2262 / Joint Strike Fighter EMD STOVL				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - SDD	C/CPIF	Lockheed Martin : Ft. Worth, TX	32,475.291	0.555	Dec 2021	0.611	Dec 2022	0.000		-		0.000	0.000	32,476.457	32,476.457
Prior Year No Longer Funded in FYDP	Various	Various : Various	13,965.497	0.000		0.000		0.000		-		0.000	0.000	13,965.497	13,965.497
Subtotal			46,440.788	0.555		0.611		0.000		-		0.000	0.000	46,441.954	N/A
Remarks															
Contract type prior to 2013 was CPAF.															
Cumulative Award Fee earned in prior years for Lockheed Martin is 97%.															
Cumulative Award earned in prior years for Pratt and Whitney is 98%.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year No Longer Funded in FYDP	Various	Various : Various	1,394.817	0.000		0.000		0.000		-		0.000	0.000	1,394.817	1,394.817
Subtotal			1,394.817	0.000		0.000		0.000		-		0.000	0.000	1,394.817	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	2,420.240	0.000		0.000		0.000		-		0.000	0.000	2,420.240	-
Subtotal			2,420.240	0.000		0.000		0.000		-		0.000	0.000	2,420.240	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604800M / Joint Strike Fighter (JSF) - EMD						<b>Project (Number/Name)</b> 2262 / Joint Strike Fighter EMD STOVL			
<b>Management Services (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Prior Year No Longer Funded in FYDP	Various	Various : Various	914.110	0.000		0.000		0.000		-		0.000	0.000	914.110	914.110
<b>Subtotal</b>			914.110	0.000		0.000		0.000		-		0.000	0.000	914.110	N/A
			<b>Prior Years</b>	<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			51,169.955	0.555		0.611		0.000		-		0.000	0.000	51,171.121	N/A
<b>Remarks</b> Subtotals and totals may not add due to rounding.  JSF EMD Includes: USAF PE 0604800F BPAC 653831 USN PE 0604800N Project Unit 2261 USMC PE 0604800M Project Unit 2262  D&S Includes: USAF PE 0604800F BPAC 653832 USN PE 0604800N Project Unit 3352 USMC PE 0604800M Project Unit 3350															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023																															
Appropriation/Budget Activity 1319 / 5														R-1 Program Element (Number/Name) PE 0604800M / Joint Strike Fighter (JSF) - EMD														Project (Number/Name) 2262 / Joint Strike Fighter EMD STOVL																	
JSF Variants - CV, STOVL & CTOL														FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
														1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Defense Acquisition Reviews														IPR ■																															
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft)																																													
														LOT 16 (CTOL 48, CV 20, STOVL 17) ●				LOT 17 (CTOL 48, CV 19, STOVL 15) ●				LOT 18 (CTOL 48, CV 19, STOVL 16) ●				LOT 19 (CTOL 48, CV 19, STOVL 16) ●				LOT 20 (CTOL 60, CV 19, STOVL 16) ●				LOT 20 (CTOL 60, CV 18, STOVL 17) ●											
																						</																							

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604800M / <i>Joint Strike Fighter (JSF) - EMD</i>	<b>Project (Number/Name)</b> 2262 / <i>Joint Strike Fighter EMD STOVL</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>JSF Variants - CV, STOVL &amp; CTOL</i></b>				
Defense Acquisition Reviews: System Development Reviews: Interim Program Review (IPR) FY-21	1	2022	1	2022
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 16 Full Funding / Production / Delivery	2	2022	2	2022
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 17 Full Funding / Production / Delivery	2	2023	2	2023
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 18 Full Funding / Production / Delivery	2	2024	2	2024
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 19 Full Funding / Production / Delivery	2	2025	2	2025
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 20 Full Funding / Production / Delivery	2	2026	2	2026
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 21 Full Funding / Production / Delivery	2	2027	2	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604800N I JNT Strike Fighter (JSF) - EMD							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	51,169.429	0.252	0.234	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,169.915
2261: Joint Strike Fighter EMD	51,169.429	0.252	0.234	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,169.915
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 198												
A. Mission Description and Budget Item Justification The F-35 Joint Strike Fighter (JSF) Program has developed and fielded an affordable, highly common family of next generation strike aircraft for the USN, USAF, USMC and allies. The three variants are the F-35A Conventional Takeoff and Landing; F-35B Short Takeoff and Vertical Landing; and the F-35C Aircraft Carrier suitable variant. The F-35A is a stealthy multi-role aircraft, primary air-to-ground for the Air Force to replace the F-16 and A-10 and complement the F-22. The F-35B variant is a multi-role strike fighter aircraft to replace the AV-8B and F/A-18 for the Marine Corps, the Sea Harrier and GR 7 for the United Kingdom, and the AV-8 currently employed by the Italian Navy. The F-35C provided the Department of the Navy with a multi-role, stealthy strike fighter aircraft to complement the F/A-18E/F.  Funding at the accomplishment/planned program level is reported as the total of all services and partners as these activities support all aircraft variants.  The System Development and Demonstration (SDD) budget funded a total quantity of 20 RDT&E test articles to include 6 ground test articles and 14 flight test articles for USN, USMC, and USAF use.  JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under System Development and Demonstration because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		PE 0604800N I JNT Strike Fighter (JSF) - EMD			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.262	0.234	0.235	-	0.235
Current President's Budget	0.252	0.234	0.000	-	0.000
Total Adjustments	-0.010	0.000	-0.235	-	-0.235
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.010	0.000			
• Program Adjustments	0.000	0.000	-0.235	-	-0.235
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000



## UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023																																
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604800N / JNT Strike Fighter (JSF) - E MD				Project (Number/Name) 2261 / Joint Strike Fighter EMD																																	
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost																														
2261: Joint Strike Fighter EMD	51,169.429	0.252	0.234	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,169.915																														
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-																																
Project MDAP/MAIS Code: 198																																										
<div>Note</div> <div>Beginning in FY2022, the JSF EMD (Project Unit 2261) budget is service specific with the following services removed: USAF PE 0604800F BPAC 653831 USMC PE 0604800M Project Unit 2262</div> <div>A. Mission Description and Budget Item Justification</div> <div>The F-35 Joint Strike Fighter (JSF) Program has developed and fielded an affordable, highly common family of next generation strike aircraft for the USN, USAF, USMC and allies. The three variants are the F-35A Conventional Takeoff and Landing; F-35B Short Takeoff and Vertical Landing; and the F-35C Aircraft Carrier suitable variant. The F-35A is a stealthy multi-role aircraft, primary air-to-ground for the Air Force to replace the F-16 and A-10 and complement the F-22. The F-35B variant is a multi-role strike fighter aircraft to replace the AV-8B and F/A-18 for the Marine Corps, the Sea Harrier and GR 7 for the United Kingdom, and the AV-8 currently employed by the Italian Navy. The F-35C provided the Department of the Navy with a multi-role, stealthy strike fighter aircraft to complement the F/A-18E/F.</div> <div>The System Development and Demonstration (SDD) budget funded a total quantity of 20 RDT&amp;E test articles to include 6 ground test articles and 14 flight test articles for USN, USMC, and USAF use.</div> <div>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</div> <table><tr><td></td><td>FY 2022</td><td>FY 2023</td><td>FY 2024 Base</td><td>FY 2024 OCO</td><td>FY 2024 Total</td></tr><tr><td>Title: System Development and Demonstration (SDD)</td><td>0.252</td><td>0.234</td><td>0.000</td><td>0.000</td><td>0.000</td></tr><tr><td>Articles:</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td colspan="6">Description: SDD execution of the Air System (Lockheed Martin) including International Commonality Efforts; includes airframe, vehicle and mission systems, autonomic logistics, systems engineering &amp; test efforts.</td></tr><tr><td colspan="6">FY 2023 Plans: Conclude SDD execution of Air System (Lockheed Martin), including International Commonality Effort which includes, airframe, vehicle systems, mission systems, autonomic logistics, systems engineering, and integrated test efforts. Activity aligned to IMS in accordance with variant IOC. Conclude SDD closure activities including</td></tr></table>														FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Title: System Development and Demonstration (SDD)	0.252	0.234	0.000	0.000	0.000	Articles:	-	-	-	-	-	Description: SDD execution of the Air System (Lockheed Martin) including International Commonality Efforts; includes airframe, vehicle and mission systems, autonomic logistics, systems engineering & test efforts.						FY 2023 Plans: Conclude SDD execution of Air System (Lockheed Martin), including International Commonality Effort which includes, airframe, vehicle systems, mission systems, autonomic logistics, systems engineering, and integrated test efforts. Activity aligned to IMS in accordance with variant IOC. Conclude SDD closure activities including					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total																																					
Title: System Development and Demonstration (SDD)	0.252	0.234	0.000	0.000	0.000																																					
Articles:	-	-	-	-	-																																					
Description: SDD execution of the Air System (Lockheed Martin) including International Commonality Efforts; includes airframe, vehicle and mission systems, autonomic logistics, systems engineering & test efforts.																																										
FY 2023 Plans: Conclude SDD execution of Air System (Lockheed Martin), including International Commonality Effort which includes, airframe, vehicle systems, mission systems, autonomic logistics, systems engineering, and integrated test efforts. Activity aligned to IMS in accordance with variant IOC. Conclude SDD closure activities including																																										

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604800N / JNT Strike Fighter (JSF) - EMD		<b>Project (Number/Name)</b> 2261 / Joint Strike Fighter EMD	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
FCA/PCA (Functional Configuration Audit/Production Configuration Audit) in order to establish production specification and transition to post-SDD, production and sustainment.					
<b>FY 2024 Base Plans:</b> N/A					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The decrease of (\$0.234) from FY2023 to FY2024 is due to SDD efforts have been completed and program has transitioned to PE0604840N.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.252	0.234	0.000	0.000	0.000

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDT&E/0604800F: F-35A Joint Strike Fighter SDD	0.013	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	22,333.771
• RDT&E/0604800M: F-35B JT Strike Fighter (JSF) - EMD	0.555	0.611	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51,171.121
• APN/0605B: F-35B Joint Strike Fighter STOV L Spares	126.970	136.770	74.496	-	74.496	75.957	0.000	0.000	0.000	3,363.198	4,360.631
• APN/0605C: F-35C Joint Strike Fighter CV Spares	221.402	93.971	98.303	-	98.303	125.515	0.000	0.000	0.000	Continuing	Continuing
• APN/0592: F-35B STOV L Series	161.776	216.356	287.711	-	287.711	267.291	308.020	296.864	235.928	Continuing	Continuing
• APN/0593: F-35C CV Series	118.933	208.336	166.464	-	166.464	189.294	195.169	194.251	198.135	Continuing	Continuing
• APN/0147: F-35C Joint Strike Fighter CV	2,369.128	1,953.676	2,495.288	-	2,495.288	1,939.606	2,044.096	1,881.786	1,763.907	18,232.382	57,452.185
• APN/0152C: F-35B Joint Strike Fighter STOV L AP	216.814	200.118	169.125	-	169.125	195.153	183.820	242.603	256.948	825.027	4,935.367
• APN/0152: F-35B Joint Strike Fighter STOV L	2,450.068	2,210.949	2,227.503	-	2,227.503	2,143.996	2,197.009	2,068.965	2,564.673	12,724.163	48,513.456

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604800N / JNT Strike Fighter (JSF) - EMD				Project (Number/Name) 2261 / Joint Strike Fighter EMD				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• C2D2 International: <i>International Continuous Capability Development and Delivery</i>	285.969	211.292	208.053	-	208.053	177.542	0.000	0.000	0.000	Continuing	Continuing	
• APN/0147C: <i>F-35C Joint Strike Fighter CV AP</i>	185.695	387.596	261.374	-	261.374	93.581	83.943	159.246	151.797	1,210.736	5,001.662	
• RDT&E/0604840N: <i>F-35C C2D2</i>	473.748	491.513	463.383	-	463.383	436.227	350.719	368.456	338.111	Continuing	Continuing	
• RDT&E/0604840M: <i>F-35B C2D2</i>	501.609	525.338	447.484	-	447.484	446.167	388.414	340.770	363.472	Continuing	Continuing	
• 0604840F <i>F-35A C2D2: USAF Continuous Capability Development and Delivery</i>	549.279	450.915	521.012	-	521.012	586.709	0.000	0.000	0.000	Continuing	Continuing	
Remarks												
This is a joint program with no executive service. Service Acquisition Execution (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Air Force.												
Program Element 0604800N/0604800M continues USN development efforts budgeted in 0603800N prior to 2002.												
The United Kingdom, Italy, Netherlands, Canada, Australia, Denmark, and Norway are participants in the SDD phase of JSF.												
Note: The USAF/USN/USMC procurement lines include Aircraft Procurement and Advanced Procurement only. Initial Spares and Repair Parts for all services are reflected in separate lines. International Partner Funding also includes funds provided under the Italy and Netherlands Bilateral agreements.												
RELATED RDT&E: Funding prior to JSF SDD (FY94-FY01): USN PE 0603800N \$1,950.617M; USAF PE 0603800F \$1,907.352M; DARPA PE 0603800E \$118.056M; and International Partner contributions of \$253.921M for a total of \$4,229.946M.												
D. Acquisition Strategy												
The SDD program consists of a cost-reimbursement contract awarded to Lockheed Martin Aeronautics Company to develop the F-35 Air System, consisting of three aircraft variants and its associated logistics support system, for the U.S. Services and international participants. Similarly, a cost-reimbursement contract was awarded to Pratt & Whitney to develop the F135 propulsion system. Ground and flight testing will be conducted during development to accomplish validation and verification, with the extensive use of modeling and simulation to offset the risk of this large, complex, and concurrent lifecycle program. A comprehensive logistics support environment, including an integrated training system for aircrew, maintenance, and support personnel, is also being developed.												
On 25 April 2011, the Department of Defense terminated the development of the General Electric Rolls-Royce Fighter Engine Team F136 propulsion system.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604800N / JNT Strike Fighter (JSF) - E MD	Project (Number/Name) 2261 / Joint Strike Fighter EMD
<p>The F-35 Program has made international involvement a key element of the acquisition strategy. This includes international partnership in the development, production, and sustainment phases of the lifecycle. Additional international participation includes Foreign Military Sales arrangements.</p> <p>In Fiscal Year 2007, separate cost-type contracts were awarded to Lockheed Martin Aeronautics Company and Pratt &amp; Whitney to begin low rate initial production for F-35 air vehicles, propulsion systems, and sustainment for the fielded systems. Transition to fixed-price-type procurement contracts occurred with the fourth low rate lot. To provide logistics support for delivered aircraft, Performance-Based Logistics cost-type contracts will be awarded to Lockheed Martin Aeronautics Company and Pratt &amp; Whitney.</p> <p>At the completion of Low Rate Initial Production, a Defense Acquisition Board review, and Milestone Decision Authority approval, the F-35 Program will enter Full Rate Production. Fixed-price procurement contracts will be awarded for F-35 air vehicles and propulsion systems for the U.S. Services and international participants. Multiyear procurement authority for the F-35 Air System will be requested for Full Rate Production. Concurrently, a fixed-price-type Performance Based Logistics contracts for sustainment will be requested to support multi-Service and multi-national requirements.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604800N / JNT Strike Fighter (JSF) - E MD					Project (Number/Name) 2261 / Joint Strike Fighter EMD				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - SDD	C/CPIF	Lockheed Martin : Ft. Worth, TX	32,474.765	0.252	Dec 2021	0.234	Dec 2022	0.000		-		0.000	0.000	32,475.251	32,475.251
Prior Year No Longer Funded in FYDP	Various	Various : Various	13,965.497	0.000		0.000		0.000		-		0.000	0.000	13,965.497	13,965.497
Subtotal			46,440.262	0.252		0.234		0.000		-		0.000	0.000	46,440.748	N/A
Remarks Contract type prior to 2013 was CPAF. Cumulative Award Fee earned in prior years for Lockheed Martin is 97%. Cumulative Award Fee earned in prior years for Pratt and Whitney is 98%.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year No Longer Funded in FYDP	Various	Various : Various	1,394.817	0.000		0.000		0.000		-		0.000	0.000	1,394.817	1,394.817
Subtotal			1,394.817	0.000		0.000		0.000		-		0.000	0.000	1,394.817	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	2,420.240	0.000		0.000		0.000		-		0.000	0.000	2,420.240	-
Subtotal			2,420.240	0.000		0.000		0.000		-		0.000	0.000	2,420.240	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604800N / JNT Strike Fighter (JSF) - EMD						Project (Number/Name) 2261 / Joint Strike Fighter EMD					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Prior Year No Longer Funded in FYDP	Various	Various : Various	914.110	0.000		0.000		0.000		-		0.000	0.000	914.110	914.110		
Subtotal			914.110	0.000		0.000		0.000		-		0.000	0.000	914.110	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			51,169.429	0.252		0.234		0.000		-		0.000	0.000	51,169.915	N/A		
Remarks																	
Subtotals and totals may not add due to rounding.																	
NOTE 1:																	
JSF EMD Includes: USAF PE 0604800F BPAC 653831 USN PE 0604800N Project Unit 2261 USMC PE 0604800M Project Unit 2262																	
D&S Includes: USAF PE 0604800F BPAC 653832 USN PE 0604800N Project Unit 3352 USMC PE 0604800M Project Unit 3350																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy											Date: March 2023																	
Appropriation/Budget Activity 1319 / 5											R-1 Program Element (Number/Name) PE 0604800N / JNT Strike Fighter (JSF) - E MD							Project (Number/Name) 2261 / Joint Strike Fighter EMD										
JSF Variants - CV, STOVL & CTOL	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Defense Acquisition Reviews	IPR ■																											
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft)		LOT 16 (CTOL 48, CV 20, STOVL 17) ●				LOT 17 (CTOL 48, CV 19, STOVL 15) ●				LOT 18 (CTOL 48, CV 19, STOVL 16) ●				LOT 19 (CTOL 48, CV 19, STOVL 16) ●				LOT 20 (CTOL 60, CV 19, STOVL 16) ●				LOT 20 (CTOL 60, CV 18, STOVL 17) ●						
2024DON - 0604800N - 2261																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604800N / JNT Strike Fighter (JSF) - EMD	<b>Project (Number/Name)</b> 2261 / Joint Strike Fighter EMD	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>JSF Variants - CV, STOVL &amp; CTOL</b>				
Defense Acquisition Reviews: System Development Reviews: Interim Program Review (IPR) FY-21	1	2022	1	2022
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 16 Full Funding / Production / Delivery	2	2022	2	2022
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 17 Full Funding / Production / Delivery	2	2023	2	2023
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 18 Full Funding / Production / Delivery	2	2024	2	2024
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 19 Full Funding / Production / Delivery	2	2025	2	2025
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 20 Full Funding / Production / Delivery	2	2026	2	2026
Production Lots (Full Funding / Production / Delivery: U.S. Aircraft): LOT 21 Full Funding / Production / Delivery	2	2027	2	2027



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604850N / SSN(X)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	0.990	29.174	133.772	361.582	-	361.582	556.838	815.257	830.221	856.382	Continuing	Continuing
2368: SSN(X) Class Submarine Development	0.990	29.174	133.772	361.582	-	361.582	556.838	815.257	830.221	856.382	Continuing	Continuing

## Note

This Program Element (PE)/ Project was established in FY 2021 for the development of the SSN(X) Class Submarine to replace the VIRGINIA Class Submarine.

FY 2024 increase is essential to meet acquisition milestones to support the development of the next class of attack submarines (SSN(X)). The increase in funding is needed for concept and technical studies, modeling and simulation efforts to support Analysis of Alternatives (AoA) and requirements decisions, technology R&D, and capabilities/requirement definition that supports program milestone deliverables. To support the FY2024 and beyond deliverables, funding for additional staff is needed to complete milestone deliverables on time. Additional funding is also needed to support risk reduction prototyping (including propulsor), increase testing efforts (including propulsor and materials) and initiate research and development infrastructure studies and upgrades to ensure readiness for planned authorization in the mid 2030s. Increases are in line with historical funding ramps from previous submarine program development efforts (COLUMBIA, VIRGINIA, etc.).

## A. Mission Description and Budget Item Justification

The U.S. Navy must protect the security of the American people by defending against great powers, regional adversaries, and transnational threats. Strategic Competition is increasing the demand on the U.S. Navy submarine force. Submarines will be the principal method to deterring strategic competition aggression and will be the first to fight. The U.S. Navy must meet the rising challenge by delivering a new attack submarine. SSN(X) will be designed to counter the growing threat posed by near peer adversary competition for undersea supremacy. It will provide greater speed, increased horizontal payload capacity, improved acoustic superiority and non-acoustic signatures, and higher operational availability. SSN(X) will conduct full spectrum undersea warfare and be able to coordinate with a larger contingent of off-hull vehicles, sensors, and friendly forces. It will retain and improve multi-mission (Anti-submarine warfare (ASW), Anti-surface warfare (ASuW), Strike, Special Operating Forces (SOF), Mine, Subsea Seabed Warfare (SSW), Intelligence, Surveillance and Reconnaissance (ISR)) capability and sustained combat presence in denied waters. SSN(X) will operate independently or integrated within a Task Force. The primary goal of the SSN(X) program element will be to evaluate a broad range of submarine designs, technologies, sensors, and combat system components required to produce an affordable platform which supports these mission requirements.

SSN(X) will continue to define requirement options and refine cost estimates to support a mid 2030s authorization. FY 2022 focused on drafting the Initial Capabilities Document (ICD) and initiating studies for the Analysis of Alternatives (AoA). Funds were also used in early efforts in engineering support and ship design management. As the SSN(X) program continues to ramp up, FY 2023 efforts focused on expanding trade studies and technology assessments; acquisition documentation development and support; engineering support efforts; ship design management efforts; and preliminary technology development informed by the ICD. Additionally, SSN(X) focused on whole ship concepts, payload systems, non-propulsion Hull, Mechanical, and Electrical (HM&E) systems, Command, Control, Communications, Computers, and Intelligence (C4I), and hull and structures to better understand the best way to meet the warfighter priorities of increased horizontal payload capacity, increased speed, increased acoustic superiority and non-acoustic signatures, and increased operational availability. SSN(X) will utilize digital engineering and industry and supply chain information to meet capability priorities while designing in availability and ensuring affordability. SSN(X) is using a mission engineering approach

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604850N / SSN(X)			
to ensure that mission utility drives the planned design, development, prototyping and testing. Building upon the FY 2023 focus areas, FY 2024 expands the efforts in the areas of trade studies, design engineering, prototyping and technology assessments and initial development. SSN(X) will also increase focus on propulsor and shafting, advanced material development, prototyping, improved stealth and payload capacity, infrastructure evaluation and readiness, and industrial base evaluation and planning. The AoA will be initiated in FY 2024. SSN(X) will incorporate best practices and lessons learned from the Virginia Class and Columbia Class submarines.					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	29.548	143.949	344.916	-	344.916
Current President's Budget	29.174	133.772	361.582	-	361.582
Total Adjustments	-0.374	-10.177	16.666	-	16.666
• Congressional General Reductions	-	-0.177			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.374	0.000			
• Program Adjustments	0.000	0.000	12.723	-	12.723
• Rate/Misc Adjustments	0.000	0.000	3.943	-	3.943
Change Summary Explanation					
FY23 Adjustments:					
-\$6M decrease unjustified management growth					
-\$4M decrease unjustified support growth					
-\$177K decrease FFRDC Reduction					
FY24:					
-\$12.7M increase of funds to support mid-2030's lead ship authorization					
-\$3.9M net increase rate adjustments					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604850N / SSN(X)				Project (Number/Name) 2368 / SSN(X) Class Submarine Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2368: SSN(X) Class Submarine Development	0.990	29.174	133.772	361.582	-	361.582	556.838	815.257	830.221	856.382	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

SSN(X) will be designed to counter the growing threat posed by near peer adversary competition for undersea supremacy. It will provide greater speed, increased horizontal payload capacity, improved acoustic superiority and non-acoustic signatures, and higher operational availability. SSN(X) will conduct full spectrum undersea warfare and be able to coordinate with a larger contingent of off-hull vehicles, sensors, and friendly forces. This project encompasses Navy RDT&E efforts required to design the next SSN to replace the VIRGINIA Class Submarine.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> SSN(X) Class Submarine Development	29.174	133.772	361.582	0.000	361.582
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> N/A  <b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Continue preparation and completion of Gate 1</li> <li>- Continue trade studies / Analysis of Alternatives (AoA) preparation studies</li> <li>- Inform requirements definition and overall program risks (technical, schedule, and costs) associated with technology maturity and begin advance technology</li> <li>- Continue and increase technical and concept development studies, define the submarine platform design trade space to inform requirements definition with whole-ship concept risks (cost, schedule, and performance).</li> <li>- Continue digital engineering and mission engineering work and aligning processes to evaluate concept designs in mission scenarios</li> <li>- Mission evaluation work and process alignment to evaluate concept designs in mission scenarios</li> <li>- Continue studies and development of advanced materials</li> <li>- Continue and significantly increase modeling and simulation efforts to support concept development and technology development. Establish SSN(X) model based systems engineering process and digital design strategy</li> <li>- Begin acquisition documentation in preparation for Gate 2 and Milestone A</li> </ul>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023					
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604850N / SSN(X)		Project (Number/Name) 2368 / SSN(X) Class Submarine Development				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue developing near term and long term schedules and identifying resource requirements to support SSN(X)</p> <p><b>FY 2024 Base Plans:</b></p> <p>- Continue developing near term and long term schedules and identifying resource requirements to support SSN(X)</p> <p>- Continue trade studies in support of Analysis of Alternatives (AoA)</p> <p>- Execute Analysis of Alternatives (AoA)</p> <p>- Expand technical and concept development studies as informed by the AoA to define the submarine platform design trade space so that requirements definition can be done based on whole-ship concept risks (cost, schedule, and performance)</p> <p>- Expand advanced technology initial development and assessments as informed by the AoA including requirements definition and overall program risks (technical, schedule, and costs) associated with technology maturity</p> <p>- Start implementation of SSN(X) model based systems engineering process and digital design strategy</p> <p>- Continue modeling and simulation efforts to support design development and technology development.</p> <p>- Initiate Ship Specification efforts</p> <p>- Continue development, prototyping, and testing of advanced materials</p> <p>- Expand initial technology development, prototyping, and testing efforts for propulsor and shafting to inform requirements definition and overall program risks (technical, schedule, and costs) associated with technology maturity</p> <p>- Initiate preliminary design efforts</p> <p>- Continue acquisition documentation in preparation for Gate 2 and Milestone A</p> <p>- Conduct infrastructure and industrial base evaluation and planning to ensure activities are ready for SSN(X)</p> <p>- Begin infrastructure evaluation and maintenance</p> <p><b>FY 2024 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></p> <p>FY 2024 increase is essential to meet acquisition milestones to support the development of the next class of attack submarines (SSN(X)). The increase in funding is need for concept and technical studies, modeling and simulation efforts to support AoA and requirement decisions, R&amp;D development, and capabilities/requirement definition that supports the program milestone deliverables. To support the FY 2024 and beyond deliverables,</p>								

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)		<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
funding for additional staff is needed to complete milestone deliverables on time. Additional funding is also needed to support propulsor prototyping, increase testing efforts (including propulsor and materials), improved stealth and payload capacity, and initiate research and development infrastructure studies and upgrades to ensure readiness for planned authorization in the mid 2030s. Increases are in line with historical funding ramps from previous submarine program development efforts (COLUMBIA, VIRGINIA, etc. )					
<b>Accomplishments/Planned Programs Subtotals</b>	29.174	133.772	361.582	0.000	361.582

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
SSN(X) is currently developing the acquisition strategy. Program office plans to utilize work requests for government warfare center initial concept and trade studies through FY 2025 to assist with requirements definition. Additional R&D efforts will be performed by Navy laboratories, shipyards, private industry, and University Affiliated Research Centers.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604850N / SSN(X)				Project (Number/Name) 2368 / SSN(X) Class Submarine Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Shipbuilder Studies	C/CPFF	Various : Various	0.000	4.000	Oct 2021	24.000	Oct 2022	90.000	Oct 2023	-		90.000	Continuing	Continuing	Continuing
Technical Studies	WR	NSWC CD : Carderock, MD	0.700	10.657	Oct 2021	38.035	Oct 2022	83.147	Oct 2023	-		83.147	Continuing	Continuing	Continuing
Technical Studies	WR	NUWC NPT : Newport, RI	0.200	5.836	Oct 2021	24.632	Oct 2022	56.882	Oct 2023	-		56.882	Continuing	Continuing	Continuing
Technical Studies	WR	NSWC PD : Philadelphia, PA	0.090	0.526	Oct 2021	4.323	Oct 2022	7.755	Oct 2023	-		7.755	Continuing	Continuing	Continuing
Concept / R&D Studies	Various	Various : Various	0.000	0.250	Oct 2021	7.733	Nov 2022	25.662	Oct 2023	-		25.662	Continuing	Continuing	Continuing
Propulsor and Shafting	Various	Various : Various	0.000	0.000		14.174	Oct 2022	30.249	Oct 2023	-		30.249	Continuing	Continuing	Continuing
Infrastructure	Various	Various : Various	0.000	0.000		0.000		28.612	Nov 2023	-		28.612	Continuing	Continuing	Continuing
Acquisition Documentation	Various	Various : Various	0.000	1.996	Oct 2021	3.208	Oct 2022	5.708	Oct 2023	-		5.708	Continuing	Continuing	Continuing
Subtotal			0.990	23.265		116.105		328.015		-		328.015	Continuing	Continuing	N/A
Remarks															
Acquisition Documentation includes the ICD, pre-AoA studies, and AoA development and execution. ICD approval was extended into late FY 2023 delaying some AoA efforts / costs into FY 2024.															
Technical Studies at NSWC Carderock, NSWC Philadelphia, and NUWC Newport - efforts include technical development, R&D development, concept development, modeling and simulation, prototyping, mission evaluation, technology AoA studies, and trade/feasibility studies.															
Concept / R&D Studies: Various - Includes UARC and Lab studies															
Technology and R&D studies are in the areas of hull and structures, propulsor and shafting, acoustic superiority and signatures, Command, Control, Communications, Computers, and Intelligence (C4I), Hull, Mechanical, and Electrical (HM&E) systems, whole ship studies, combat and payload systems, and the associated program and engineering support. These studies include assessments of technical feasibility, cost, performance, technology readiness, and mission effectiveness for technology options to address capability requirements (CR) and operational attributes (OA).															
Infrastructure funding is needed for studies of current and future research and development facilities and equipment, implementation of required upgrades, and investment in future capabilities or facilities upgrades/modernization to ensure readiness to support the expanded capabilities of SSN(X).															
The increase in funding is needed for concept and technical studies, modeling and simulation efforts to support AoA execution and requirement decisions, R&D development, and capabilities/requirement definition that supports the milestone deliverables. To support the FY 2024 and beyond deliverables, funding for additional staff is needed to complete milestone deliverables on time. Additional funding is also needed to support propulsor prototyping, increase testing efforts (including propulsor and materials), improved stealth and payload capacity, and initiate research and development infrastructure studies and upgrades to ensure readiness for planned award in the mid 2030s.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604850N / SSN(X)				Project (Number/Name) 2368 / SSN(X) Class Submarine Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC CD : Carderock, MD	0.000	2.865	Oct 2021	7.725	Oct 2022	8.426	Oct 2023	-		8.426	Continuing	Continuing	Continuing
Government Engineering Support	WR	NUWC NPT : Newport, RI	0.000	0.680	Oct 2021	2.570	Oct 2022	3.749	Oct 2023	-		3.749	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC PD : Philadelphia, PA	0.000	0.150	Oct 2021	0.675	Oct 2022	2.079	Oct 2023	-		2.079	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPFF	Various : Various	0.000	0.515	Dec 2021	2.223	Dec 2022	6.784	Dec 2023	-		6.784	Continuing	Continuing	Continuing
Subtotal			0.000	4.210		13.193		21.038		-		21.038	Continuing	Continuing	N/A
Remarks															
Engineering Support includes technical, concept, cost, and R&D support for SSN(X) studies and development efforts															
Government and Contractor Engineering Support ramp up was delayed to late FY2023 due to contract delays, hiring timelines, and availability of qualified personnel. To support the FY2024 and beyond deliverables, funding for additional staff is needed to complete milestone deliverables on time.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Various : Various	0.000	0.874	Dec 2021	0.000		0.000		-		0.000	0.000	0.874	-
Program Support	C/CPFF	Serco : Herndon, VA	0.000	0.600	Jan 2022	3.199	Dec 2022	7.401	Dec 2023	-		7.401	Continuing	Continuing	Continuing
Program Mgt Support	Various	Various : Various	0.000	0.225	Nov 2021	1.275	Nov 2022	5.128	Nov 2023	-		5.128	Continuing	Continuing	Continuing
Subtotal			0.000	1.699		4.474		12.529		-		12.529	Continuing	Continuing	N/A
Remarks															
Program Management Support includes Program Office, subject matter experts (SME), cyber, cost, financial, and acquisition support. Costs for support in FY 2024 will increase with the documentation, review, and completion of the AoA; support for cybersecurity documentation and efforts, and early program development.															
Program Management Support ramp up was delayed to late FY 2023 due to contract delays, hiring timelines, and availability of qualified personnel. To support the FY2024 and beyond deliverables, funding for additional staff is needed to complete milestone deliverables on time.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604850N / SSN(X)						Project (Number/Name) 2368 / SSN(X) Class Submarine Development					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Support includes program office travel and office costs.																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.990	29.174		133.772		361.582		-		361.582	Continuing	Continuing	N/A		
Remarks																	
FY 2024 increase is essential to meet acquisition milestones to support the development of the next class of attack submarines (SSN(X)). The increase in funding is needed for concept and technical studies, modeling and simulation efforts to support AoA and requirement decisions, technology R&D, and capabilities/requirement definition that supports the milestone deliverables. To support the FY 2024 and beyond deliverables, funding for additional staff is needed to complete milestone deliverables on time. Additional funding is also needed to support risk reduction prototyping (including propulsor), increase testing efforts (including propulsor and materials), improved stealth and payload capacity, and initiate research and development infrastructure studies and upgrades to ensure readiness for planned award in the mid 2030s. Increases are in line with historical funding ramps from previous submarine program development efforts (COLUMBIA, VIRGINIA, etc.).																	



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

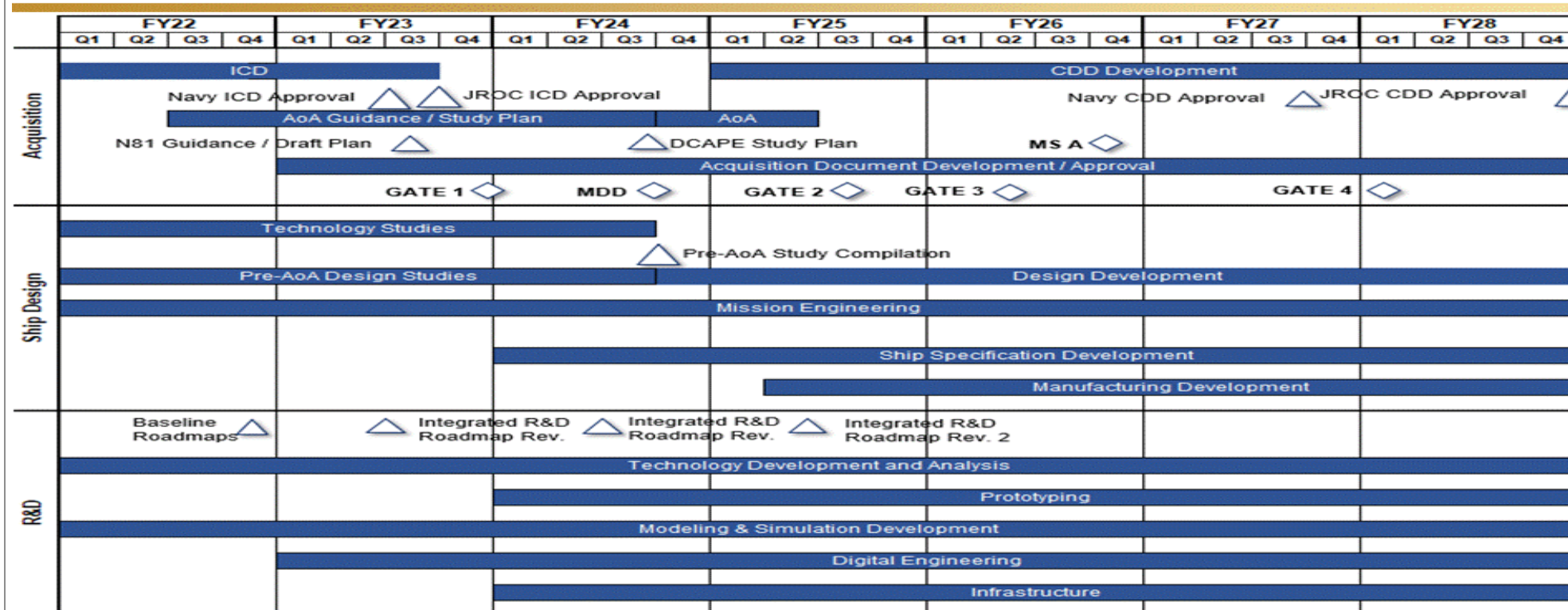
R-1 Program Element (Number/Name)

PE 0604850N / SSN(X)

Project (Number/Name)

2368 / SSN(X) Class Submarine Development

## SSN(X) Class Program Schedule



### ACRONYMS:

CBA: Capabilities Based Assessment  
ICD: Initial Capabilities Document  
CDD: Capabilities Development Document

DAB: Defense Acquisition Board  
AoA: Analysis of Alternatives  
R&D: Research & Development

JROC: Joint Requirement Oversight Council  
MS: Milestone

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)	<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2368</b>				
Acquisition: Initial Capabilities Document (ICD)	1	2022	2	2023
Acquisition: Navy ICD Approval	3	2023	3	2023
Acquisition: JROC ICD Approval	3	2023	3	2023
Acquisition: AoA Guidance / Study Plan	3	2022	3	2024
Acquisition: AoA	4	2023	2	2024
Acquisition: N81 Approval of Guidance / Draft	3	2023	3	2023
Acquisition: Gate 1	4	2023	4	2023
Acquisition: MDD	4	2024	4	2024
Acquisition: Gate 2	3	2025	3	2025
Acquisition: Gate 3	2	2026	2	2026
Acquisition: DCAPE Study Plan	3	2024	3	2024
Acquisition: Milestone (MS) A	4	2026	4	2026
Acquisition: Navy CDD Approval	3	2027	3	2027
Acquisition: JROC CDD Approval	4	2028	4	2028
Acquisition: CDD Development	1	2025	4	2028
Acquisition: Acquisition Document Development / Approval	1	2023	4	2028
Acquisition: Gate 4	1	2028	1	2028
Ship Design: Technology Studies	1	2022	3	2024
Ship Design: Pre-AoA Design Studies	1	2022	3	2024
Ship Design: Mission Engineering	1	2022	4	2028
Ship Design: Design Development	4	2024	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604850N / SSN(X)		Project (Number/Name) 2368 / SSN(X) Class Submarine Development
Events by Sub Project		Start		End
		Quarter	Year	Quarter Year
Ship Design: Manufacturing Development		2	2025	4 2028
Ship Design: Ship Specification Development		1	2024	4 2028
Ship Design: Pre-AoA Study Compliation		4	2024	4 2024
R&D: Technology Development and Analysis		1	2022	4 2028
R&D: Prototyping		1	2024	4 2028
R&D: Digital Engineering		1	2023	4 2028
R&D: Infrastructure		1	2024	4 2028
R&D: Baseline Roadmaps		4	2022	4 2022
R&D: Integrated R&D Roadmap Rev 0		3	2023	3 2023
R&D: Integrated R&D Roadmap Rev 1		3	2024	3 2024
R&D: Integrated R&D Roadmap Rev 2		2	2025	2 2025

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0605013M / <i>Marine Corps IT Dev/Mod</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	115.960	10.854	11.361	22.663	-	22.663	10.244	1.675	0.758	0.773	Continuing	Continuing
2906: <i>Marine Corps IT</i>	115.960	6.825	11.361	22.663	-	22.663	10.244	1.675	0.758	0.773	Continuing	Continuing
9406: <i>Maintenance Data Warehouse</i>	0.000	4.029	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.029

**A. Mission Description and Budget Item Justification**

This program establishes, sustains, and continuously refines computing platforms and Information Technology (IT) services as tested, certified, and reusable components of a Marine Corps IT framework that spans the range of military and garrison operations.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	11.277	11.361	13.005	-	13.005
Current President's Budget	10.854	11.361	22.663	-	22.663
Total Adjustments	-0.423	0.000	9.658	-	9.658
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.423	0.000			
• Program Adjustments	0.000	0.000	-0.127	-	-0.127
• Rate/Misc Adjustments	0.000	0.000	9.785	-	9.785

**Change Summary Explanation**

The increase of \$11.302M from FY 2023 to FY 2024 is primarily due to the Manpower Operations Systems request of \$10.253M due to the Marine Corps prioritization of talent management as a pillar of overall Force Design. Previous funding for this system in FY 2022 and FY 2023 was under the Technology Services Organization (TSO), but it has transitioned to the Manpower Operations Systems Planned Program in FY 2024 due to the updated scope of the program.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod				Project (Number/Name) 2906 / Marine Corps IT			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2906: Marine Corps IT	115.960	6.825	11.361	22.663	-	22.663	10.244	1.675	0.758	0.773	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Manpower Operations Systems (MOS), as a key component of the Human Resources Development Processes (HRDP), is an enterprise-wide human resource family of capabilities for the modernization of platforms and applications to support the future force and transform USMC human resources from inventory-based to talent-based management. The objective is to provide a device agnostic, data driven, and dynamic human resources IT solutions that meet the evolving needs of the Marine Corps' talent-based work force. These efforts are critical to delivering human resource solutions that manage and enable our exceptionally talented workforce to increase match fit, job satisfaction, and career longevity. Marine Corps service priorities include Talent Marketplace/Management, Retention & Recruiting, Manpower Management/Assignments, Modeling & Analytics and Performance Evaluation. The Marine Corps intends to take advantage of modern technology such as cloud native and mobile solutions, artificial intelligence and machine learning, automation, and modern cyber security and service delivery practices to provide the capability necessary to modernize and support the future force. Focus areas include modernized officer and enlisted personnel models to better balance retention and recruiting; application of data analytics across the recruiting and retention enterprise; improved assignment of enlisted recruits to military occupational specialties; leveraging lessons learned by the Army, Navy, and Air Force to implement a web-based talent marketplace to increase agency for Marines and Commands in the assignments process. The Marine Corps will streamline, digitize and automate human capital business processes to reduce administrative overhead and human errors thereby maximizing time for leaders and Marines to focus on warfighting.

Marine Corps Recruiting Information Support System (MCRISS) is an enterprise level system to automate administrative procedures for the recruiting station operations. This customized automated System, centered on procedures in the Guidebook for Recruiters, Volume I, dramatically improves efficiency and effectiveness in Marine Corps recruiting. Furthermore, Military Entrance Processing Command requires Marine Corps recruiting to provide information in electronic format only. MCRISS is the Marine Corps Recruiting Command's program to manage applicant processing from commitment to accession/commission into the Marine Corps and Marine Corps Reserve. This enterprise approach allows for efficient sharing of information about potential recruits and recruiter screening efforts, yielding a more cost effective process. The current system requires modernization of the systematic recruiting components to provide efficiency for the Recruiting force from the Headquarters element down to the Recruiter, and requires numerous updates in order to become fully compliant with Cyber Security and Center for Naval Analysis (CNA) policies and mandates to protect PII/PHI data captured and stored in the system. The Modernization effort will involve a competitive evaluation of several prototype systems, leading to a selection of a viable platform and the complete replacement of the current MCRISS system with modern and secure technology.

Paperless Office/Acquisition (PA) funding supports development and enhancement of Purchase Request (PR) Builder, which is the Marine Corps enterprise solution for the electronic generation of purchase requests, funding documents, miscellaneous payments, and serves as the front-end system for feeding the DOD enterprise contracting writing system Standard Procurement System (SPS). PR Builder is a fully web-based, Mission Assurance Category (MAC) III sensitive business system that provides the Marine Corps with a net-centric capability to electronically create, route for approval, and apply funding to Purchase Requests (PRs), Funding Documents, and Miscellaneous Payments. PR Builder is the authoritative procurement generation system within the Marine Corps electronic Paperless Acquisition (PA) Systems Business Enterprise that provides system-to-system interaction with the Marine Corps' Standard Procurement System (SPS)/Procurement Desktop Defense (PD2, Department of Defense (DoD) Standard Accounting, Budgeting, and Reporting

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
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<p>System (SABRS), Electronic Document Access (EDA). These systems are critical to Marine Corps purchasing, contracting and procurement tracking control.</p> <p>Technology Services Organization (TSO): This Technical refresh/upgrade of Standard Accounting Budgeting Reporting System (SABRS) database technology from ADABAS to a newer database architecture provides a modern and well-supported database technology that ultimately enables the normalization of Marine Corps financial data in a true relational database. The newer database architecture will provide a modern data platform to support transactional operations within the DON General Fund accounting systems to optimize performance, readily scale, and reliably support data structure, quality, and availability for subsequent analysis to drive decision making. Successful implementation will be transparent to the SABRS user community while minimizing the potential for unanticipated system degradation/outages and secure the system's operational longevity. This Multi-phased project (over 4 years), system supports 5k+ direct users, impacts entire DON General Funds accounting. Out year costs will be assumed into planned sustainment of SABRS.</p> <p>The current configuration is antiquated with diminishing industry support. There is a limited pool of applicants available to work on ADABAS. Sustainment is cost prohibitive and the technology stack limits flexibility to fully support 21st century data/system requirements. TSO will be unable to mitigate identified technical and support risk associated with current technology which could result in systems degradation and/or outage. This further leaves TSO unable to improve data integrity and audit compliance in SABRS by employing a more modern database. The impact on the operational capability is the risk to DON accounting and Financial Management operations increases daily for major system degradation or outage in both likelihood of occurrence and extent of the negative impact of such an occurrence. This will result in the system becoming less and less viable to the point where it will no longer support Marine Corps operations.</p> <p>Strategic Management Decision Support (SMDS): The SMDS program will provide a set of materiel and non-materiel solutions to facilitate data-driven and analytically sound decision support for Marine Corps strategic-level business processes, in order to optimize force development outcomes and improve institutional readiness. Supported business processes include global force management, readiness assessment, war gaming, planning, programming, budgeting, and capability solution development. SMDS will provide Marine Corps senior leaders, across all functional areas, adequate tools and data to make force development and readiness decisions with sufficient responsiveness to meet force management and planning, programming, budgeting, and execution (PPBE) process timelines. SMDS will enable Marine Corps data to be readily available, visible, accessible, and integrate multiple classification domains through a DISA Cross Domain Enterprise Solution. SMDS will provide enterprise data management with analytics and tools to provide enterprise wide visualization, reporting, and data mining of Marine Corps data that is found on local and enterprise level Marine Corps systems. SMDS will provide the Marine Corps sufficient, consistent, relevant, and high-quality data to support strategic management processes and decisions through use of Joint DoD and Marine Corps systems.</p> <p>Command Individual Risk and Resiliency Assessment System (CIRRAS), operationally deployed in September 2020, enables the United States Marine Corps (USMC) commanding officers and senior enlisted advisors to make more informed and timely decisions on Force Preservation (FP) risk assessments, based on identifying and tracking individual Service Member (SM) behaviors associated with increased risk or resiliency as defined by the Marine Corps "Six Fs" (Fidelity, Fighter, Fitness, Family, Finances, and Future). CIRRAS is the Marine Corps Force Preservation Council (FPC) enterprise-wide system to manage individual SM FP risk by providing a consistent approach and a standardized methodology to support protective factors and mitigate adverse outcomes. Current efforts are to deploy additional FP functionality to increase the ability to perform, inform, and record behavioral Service Member risk assessment within the Marine Corps with the development of Version 1.1. The enhanced CIRRAS Version 1.1 capabilities being developed will automate resiliency scores, send automated alerts to leadership of "at risk" personnel, and implement additional system interfaces that will provide further key FP indicator data to assist in prevention of SM suicide. CIRRAS Version 1.1 is slated to deploy in Q4 FY 2023. Development of CIRRAS Version 2.0 will begin in FY 2024 and provide enhanced capabilities including automating e-forms, implementing a greater number</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013M I Marine Corps IT Dev/Mod	Project (Number/Name) 2906 I Marine Corps IT				
of interfaces, and incorporating machine learning data analytic tools to achieve cross-platform data mining and fluid reporting flexibility to support Marine Corps CIRRAS end user communities.							
The Total Force Structure Management System (TFSMS) supports combat development activities associated with Expeditionary Force Development System (EFDS) and underpins the Total Force Structure process. TFSMS integrates manning, equipping, organizing and training lifecycle processes and delivers authoritative Marine Corps force structure data to comply with Global Force Management (GFM) Data Strategy. It enables collaborative decision making through its ability to model force structure changes in response to strategic planning needs and the delivery of approved force structure data changes through net centric-compliant web services. TFSMS delivers force structure data to over thirty Marine Corps and Joint data systems to support capabilities such as workforce management (e.g., manpower modeling, recruiting, training), principal end item requirements (e.g., procurement authorizations, transportation planning), installation planning (e.g., test range planning) and unit readiness reporting. Modernization of TFSMS is required to develop and institute modern data sharing standards, increase computing performance, and improve the modeling capability with machine learning.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> MARINE CORPS RECRUITING INFORMATION SUPPORT SYSTEM (MCRISS)  <b>Articles:</b>			0.000	0.716	0.000	0.000	0.000
			-	-	-	-	-
<b>Description:</b> The effort will support the modernization of MCRISS. The current system requires modernization of the systematic recruiting components to provide efficiency for the Recruiting force from the Headquarters element down to the Recruiter, and requires numerous updates in order to become fully compliant with Cyber Security and CNA policies and mandates to protect PII/PHI data captured and stored in the system. The modernization effort will involve a competitive evaluation of several prototype systems, leading to a selection of a viable platform and the complete replacement of the current MCRISS system with modern and secure technology.							
<b>FY 2023 Plans:</b> Continue development of required interfaces and develop capability for the MCRISS II							
<b>FY 2024 Base Plans:</b> N/A							
<b>FY 2024 OCO Plans:</b> N/A							
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease of \$0.716M in FY 2024 is due to schedule change in order to support operational sustainment.							
<b>Title:</b> STRATEGIC MANAGEMENT DECISION SUPPORT (SMDS)  <b>Articles:</b>			2.500	3.045	4.078	0.000	4.078
			-	-	-	-	-



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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod		Project (Number/Name) 2906 / Marine Corps IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>Description:</b> Strategic Management Decision Support (SMDS): This program is required to meet the Marine Corps capability needs for high quality data and effective assessment of capability needs and risks to force, mission, and institution. The SMDS program will establish a set of materiel and non-materiel solutions to facilitate data-driven and analytically sound decision support for Marine Corps strategic-level business processes, in order to optimize force development outcomes and improve institutional readiness. Supported business processes include global force management, readiness assessment, wargaming, planning, programming, budgeting, and capability solution development. The program includes developing an integrated enterprise decision support solution with materiel and non-materiel components, and development and sustainment of related operational and developmental projects that support design and provide interim solutions. Program components include data quality improvement and business process reengineering; data integration and data management services to aggregate enterprise data and make it available/usable for decision support; procurement of hardware, software, and services, to include analytic and visualization applications; and development of inference and decision models to facilitate analysis and decision support specific to each business process.</p> <p><b>FY 2023 Plans:</b> Funding is required in FY 2023 to build out the Unclassified and Classified Cloud Environments, completed Steps 1, 2, and 3 of the Risk Management Framework, and continue Release 1.0 prototype build out to be prepared for the Software Acquisition Phase Execution Phase Milestone Decision.</p> <p><b>FY 2024 Base Plans:</b> Funding is required to complete the development of SMDS Version 1.0 (MVP) in 2nd Quarter FY 2024 and to start the SWP Execution Phase to fully deploy the Minimum Viable Capability Release SMDS Version 1.0 to the Marine Corps in 4th Quarter FY 2024. Additionally, the SMDS IPT will also be starting requirements refinement to develop and deploy SMDS Release 2.0.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The increase from FY 2023 to FY 2024 is due to increased developmental efforts related to deploying SMDS into the NAVAIR Impact Level 4 and 6 Clouds that include: stage, mirror and production environments and the deployment a fully operational DISA Cross Domain Enterprise Solution to provide a fully operational SMDS Version 1.0.</p>						
Title: MANPOWER OPERATIONS SYSTEMS (MOS)		0.000	0.000	10.253	0.000	10.253

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> N/A						
<b>FY 2024 Base Plans:</b> Develop and deploy an automated reenlistment capability through an OTA. Develop a commercial, cloud hosted HRDP marketplace through an OTA. Develop and deploy a Machine Learning model to modernize existing Marine Corps manpower models. Develop and deploy an Artificial Intelligence informed Military Occupation Specialty (MOS) matching application for accession. Develop and deploy a Machine Learning model to minimize administrative and logistics delay in initial Military Occupation Specialty (MOS) training to accelerate new Marine introduction into the FMF (Retention Predictive Network (RPN)).						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$10.253M is due to the Marine Corps prioritization of talent management as a pillar of overall Force Design. Previous funding for this system in FY 2022 and FY 2023 was under the Technology Services Organization (TSO), but it has transitioned to the Manpower Operations Systems Planned Program in FY 2024 due to the updated scope of the program.						
<b>Title:</b> COMMAND INDIVIDUAL RISK AND RESILIENCY ASSESSMENT SYSTEM (CIRRAS)		4.000	3.444	5.652	0.000	5.652
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> Funding in FY 2023 will continue development and testing for CIRRAS Version 1.1, with expected completion by 4th QTR FY 2023.						
<b>FY 2024 Base Plans:</b> Begin development for CIRRAS Version 2.0 to enable data entry automation of Marine & Reserve Affairs Marine Force (M&RA MF) programs, provide data trend analysis capability to enhance ,individualized FPC recommendations, and inform program resourcing and the effectiveness of M&RA MF programs.						
<b>FY 2024 OCO Plans:</b>						

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod		Project (Number/Name) 2906 / Marine Corps IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The increase from FY 2023 to FY 2024 reflects the initial ramp up of development for CIRRAS Version 2.0, which includes the following capabilities: automating e-forms, implementation of a greater number of interfaces, and incorporating machine learning data analytic tools to achieve cross-platform data mining and fluid reporting flexibility to support Marine Corps CIRRAS end user communities. Additional costs compared to the development of CIRRAS Version 1.1 includes the increased costs associated with the required data analytics software.						
Title: TOTAL FORCE STRUCTURE MANGEMENT SYSTEM (TFSMS)  Articles:  Description: Modernization of TFSMS is required to develop and institute modern data sharing standards, increase computing performance, and improve the modeling capability with machine learning. This supports the decision-making capability for joint operational planners and the Marine Corps Force Design 2030 directive.  FY 2023 Plans: Initiation of the modernization of TFSMS by establishing an operational platform that enables the system to migrate to a cloud-hosting environment in FY 2025.  FY 2024 Base Plans: Continued development utilizing the agile software development process in modernizing TFSMS with a planned partial release.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: The decrease in FY 2024 aligns with program need in FY 2024 to continue development.		0.000 -	3.600 -	2.680 -	0.000 -	2.680 -
Title: TECHNOLOGY SERVICES ORGANIZATION (TSO)  Articles:  FY 2023 Plans: - Continue research and development of the most efficient approach for transitioning the DON General Fund Accounting System, SABRS, to a modern data platform.		0.325 -	0.556 -	0.000 -	0.000 -	0.000 -

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Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod			Project (Number/Name) 2906 / Marine Corps IT				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>							<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
- Continue development efforts in support of Manpower Personnel Administration (MPA) Modernization of applications.  <b>FY 2024 Base Plans:</b> N/A  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease in \$0.556M in FY 2024 is a result of sunsetting of SABRS and the transition to DAI in support of increased audit initiatives for the Marine Corps.											
Accomplishments/Planned Programs Subtotals							6.825	11.361	22.663	0.000	22.663
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• PMC/4630 - MCRISS: MC Recruiting Info Support System	0.077	0.064	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.660
• PMC/4630 - PA: Paperless Office/Acquisition	0.132	0.135	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.875
• PMC/4630 - TSO: Technology Services Organization (TSO)	1.300	0.941	0.000	-	0.000	1.554	1.383	1.019	1.039	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
Manpower Operations Systems (MOS) will utilize the modernization of the HRDP defense business systems to follow a Functional Area Manager (FAM)-prioritized, iterative approach that leverages modern technology (i.e., commercial cloud service tiers; Artificial Intelligence/Machine Learning; automation; data analytics and visualization, etc.) and IT service delivery methodologies. The Marine Corps will operate a multi-cloud, hybrid environment structured to expose and democratize data in order to capitalize on data analytics to optimize outcomes in accession and recruitment, talent and career management, assignments and retention, training, integrated pay and personnel systems. Modernization efforts will employ adaptive acquisition pathways and implement agile service delivery processes where appropriate, and leverage user-centered design in the development, refinement and prioritization of capabilities needs.											
Paperless Acquisition (PA) will use an incremental development methodology utilizing short development periods. The contracting strategy is to use a firm-fixed price contract to reduce risk to government, with additional capabilities defined by a Marine Corps Configuration Control Board and delivered to the service integrator as											

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<p>a modification to the contract. The delivery of small functional capabilities allows for measurable enhancements to the base system while keeping Post Deployment System Support costs relatively low.</p> <p>Marine Corps Recruiting Information Support System (MCRISS) Modernization utilizes an agile software development approach to allow for continued development. MCRISS Modernization leverages a direct-award contract to a qualified 8(a) small business partner. Contracting strategy for MCRISS II sustainment support will include a competitive firm-fixed price IDIQ contract.</p> <p>Technology Services Organization (TSO) SABRS: Funding will assist with research and development of the most efficient approach for transitioning the DON General Fund Accounting System, SABRS, to a modern data platform in order to eliminate the risk associated with an aging and expensive technology with dwindling number of technical experts. This Technical refresh/upgrade of SABRS database technology from ADABAS to a newer database architecture provides a modern and well-supported database technology that ultimately enables the normalization of Marine Corps financial data in a true relational database.</p> <p>Strategic Management Decision Support (SMDS): Funding is required for the continuation of the Strategic Management Decision Support (SMDS) program, Program Manager Naval Applications &amp; Business Services (PM NABS), as approved by the Milestone Decision Authority, will continue to follow DoD Software Acquisition Pathway (SWP) to rapidly and iteratively design, test, and deploy resilient and reliable SMDS software capabilities that meet the Marine Corps end users' priority needs with 85% fully operational product. After minimum viable product (MVP) acceptance, SMDS will enter a six month SWP Execution Phase that will complete with the fully operational deployment of SMDS Version 1.0 to the Marine Corps. New SMDS functionality will continue to be released annually to fully deploy all the capabilities requested by the Marine Corps.</p> <p>Command Individual Risk and Resiliency Assessment System (CIRRAS) utilizes an agile software development approach to allow for scalable continuing development. Development efforts are leveraged through NIWC LANT. The contracting strategy for development includes a competitive firm-fixed price IDIQ contract.</p> <p>Total Force Structure Management System (TFSMS): TFSMS will utilize an agile software development approach to allow for iterative testing for system functionality to ensure continuity of performance. Development efforts will be leveraged through NIWC LANT through a combined government and contract support team. Contract efforts will be awarded as a competitive firm-fixed price IDIQ.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod				Project (Number/Name) 2906 / Marine Corps IT					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TSO	Various	GDIT : Indianapolis, IN	0.196	0.325	May 2022	0.556	May 2023	0.000		-		0.000	Continuing	Continuing	Continuing
MCRISS Modernization	SS/IDIQ	CHENEGA DECISION SCIENCES, LLC : Lorton, VA	10.249	0.000		0.716	Apr 2023	0.000		-		0.000	0.000	10.965	-
Paperless Ofc Acq Dev	MIPR	NAVAIR : TBD	0.468	0.000		0.000		0.000		-		0.000	0.000	0.468	Continuing
SMDS Development	MIPR	NIWC LANT : Charleston, SC	0.000	1.035	May 2022	1.237	Feb 2023	1.631	Jan 2024	-		1.631	Continuing	Continuing	Continuing
CIRRAS Development v1.1.0.0	MIPR	NIWC LANT : Charleston, SC	0.578	1.538	Jan 2022	1.355	Jan 2023	0.362	Jan 2024	-		0.362	0.000	3.833	-
CIRRAS Development v1.1.0.0	C/IDIQ	CACI : Charleston, SC	1.030	2.462	Jan 2022	2.089	Jan 2023	0.000		-		0.000	0.000	5.581	-
Prior Years Cumulative Funding	Various	Various : Various	66.367	0.000		0.000		0.000		-		0.000	0.000	66.367	-
TFSMS Modernization	C/IDIQ	CACI : Charleston, SC	0.000	0.000		2.736	Mar 2023	2.037	Jan 2024	-		2.037	0.000	4.773	-
TFSMS Modernization	MIPR	NIWC LANT : Charleston, SC	0.000	0.000		0.864	Apr 2023	0.643	Jan 2024	-		0.643	0.000	1.507	-
SMDS Development	C/IDIQ	TBD : Charleston, SC	0.000	1.465	Aug 2022	1.808	Jan 2023	2.447	Jan 2024	-		2.447	Continuing	Continuing	Continuing
CIRRAS Development v2.0.0.0	MIPR	NIWC LANT : Charleston, SC	0.000	0.000		0.000		2.500	Jan 2024	-		2.500	0.000	2.500	-
CIRRAS Development v2.0.0.0	C/IDIQ	CACI : Charleston, SC	0.000	0.000		0.000		2.790	Jan 2024	-		2.790	0.000	2.790	-
MOS OTA Reenlistment	MIPR	NIWC Lant : Charleston, SC	0.000	0.000		0.000		1.800	Apr 2024	-		1.800	Continuing	Continuing	Continuing
MOS OTA Marketplace	MIPR	TBD : TBD	0.000	0.000		0.000		3.300	Dec 2023	-		3.300	Continuing	Continuing	Continuing
MOS Military Occupation Specialty (MOS) matching application	C/FFP	PEO Digital : Quantico, VA	0.000	0.000		0.000		2.250	Dec 2023	-		2.250	Continuing	Continuing	Continuing
MOS - Machine Learning Model (MODELS)	MIPR	Missile Def Agency : Huntsville, AL	0.000	0.000		0.000		1.400	May 2024	-		1.400	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MOS - Machine Learning Model (RPN)	MIPR	Data Robot : Boston, MA	0.000	0.000		0.000		1.503	May 2024	-		1.503	Continuing	Continuing	Continuing
Subtotal			78.888	6.825		11.361		22.663		-		22.663	Continuing	Continuing	N/A
Remarks															
Overall increase in FY 2024 is primarily attributed to 1) CIRASS V2.0 development 2) increased developmental efforts related to deploying SMDS into the NAVAIR Impact Level 4 and 6 Clouds that include: stage, mirror and production environments and the deployment a fully operational DISA Cross Domain Enterprise Solution to provide a fully operational SMDS Version 1.0 and 3) MOS modernization of the HRDP defense business systems for Talent Marketplace/Management and Retention & Recruiting efforts.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	22.306	0.000		0.000		0.000		-		0.000	0.000	22.306	-
Subtotal			22.306	0.000		0.000		0.000		-		0.000	0.000	22.306	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	12.859	0.000		0.000		0.000		-		0.000	0.000	12.859	-
Subtotal			12.859	0.000		0.000		0.000		-		0.000	0.000	12.859	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	1.907	0.000		0.000		0.000		-		0.000	0.000	1.907	-
Subtotal			1.907	0.000		0.000		0.000		-		0.000	0.000	1.907	N/A

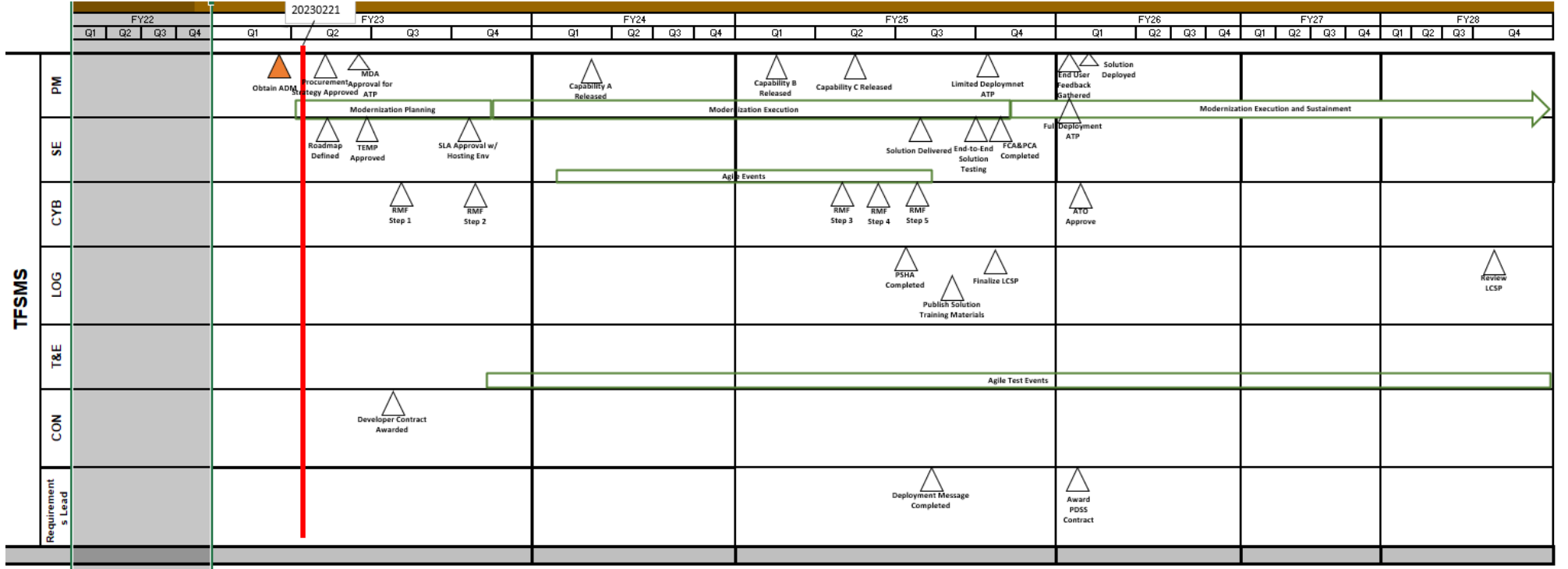
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod					Project (Number/Name) 2906 / Marine Corps IT				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		115.960	6.825		11.361		22.663		-		22.663	Continuing	Continuing	N/A

Remarks

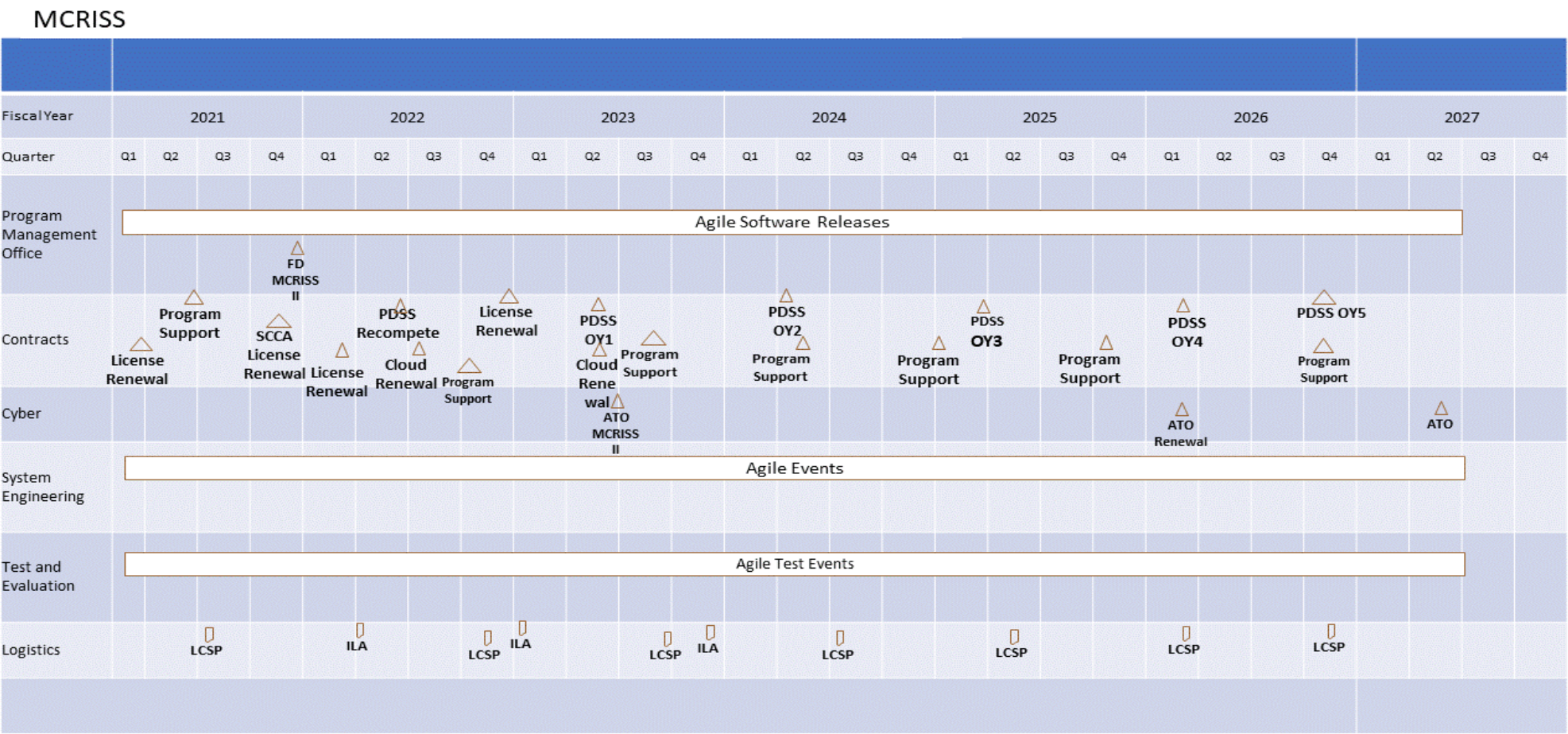


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 5		PE 0605013M / Marine Corps IT Dev/Mod		2906 / Marine Corps IT	



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																		Date: March 2023					
Appropriation/Budget Activity									R-1 Program Element (Number/Name)									Project (Number/Name)					
1319 / 5									PE 0605013M / Marine Corps IT Dev/Mod									2906 / Marine Corps IT					



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

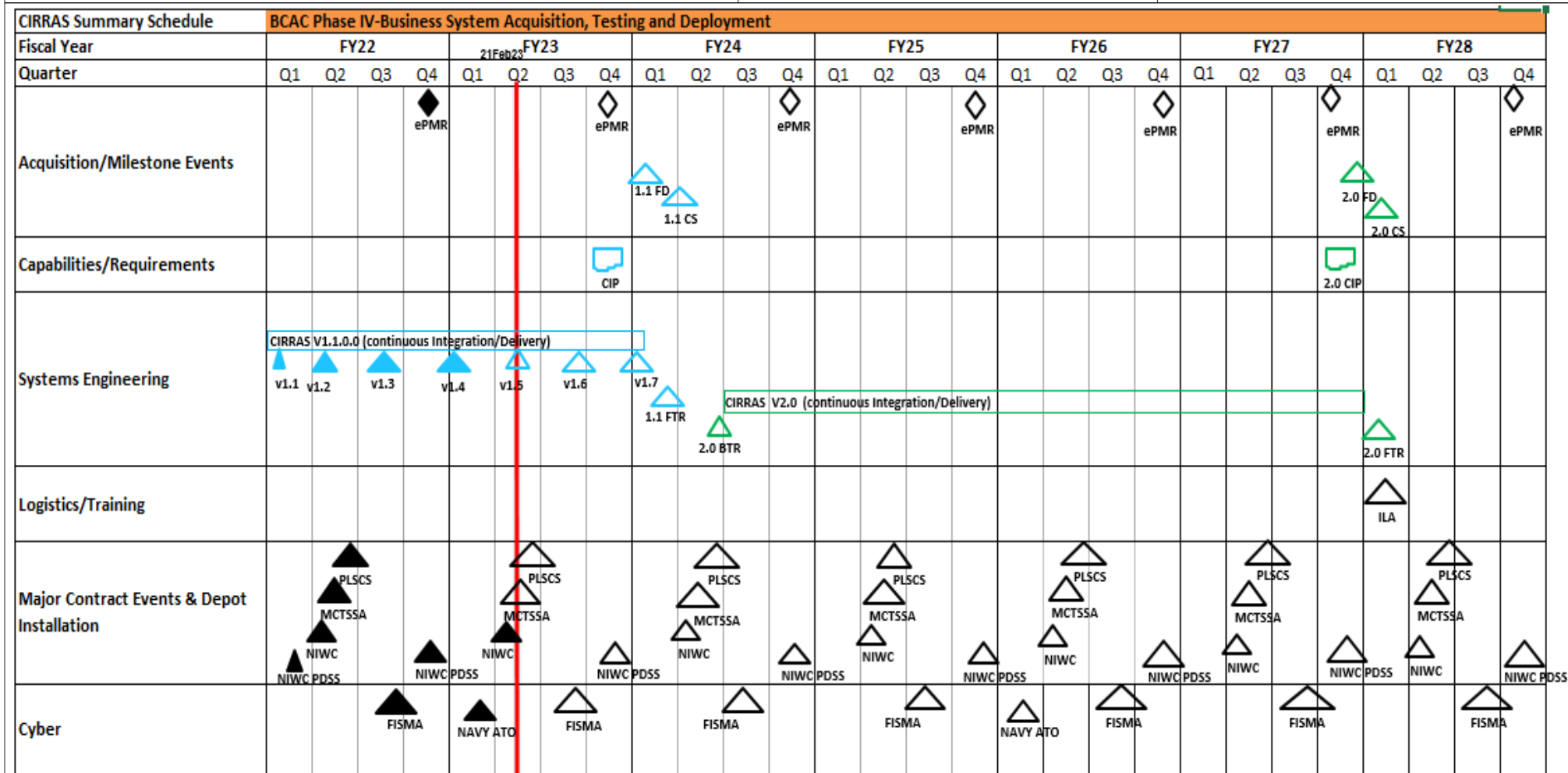
1319 / 5

R-1 Program Element (Number/Name)

PE 0605013M / Marine Corps IT Dev/Mod

Project (Number/Name)

2906 / Marine Corps IT



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0605013M / Marine Corps IT Dev/Mod

Project (Number/Name)  
2906 / Marine Corps IT

Strategic Management Decision Support (SMDS) Program Milestone Schedule

SMDS Summary Schedule	SMDS Software Acquisition Pathway																			
Fiscal Year	FY22				FY23				FY24				FY25				FY26			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Acquisition/Milestone Events		SWAP MDA	Planning Phase Start			Time Now	ACQ Strategy	Cost Estimate	MDA Approves MVP	Execution Phase Approved by MDA		SMDS V1.0 Deployed		SMDS V2.0 Deployed & 3.0 Start			SMDS V3.0 Deployed & 4.0 Start			SMDS V4.0 Deployed & 5.0 Start
Capabilities/Requirements		Agile SMDS RR Start			SMDS V1.0 MVP/MVCR					V2.0 RR			V3.0 RR				V4.0 RR			V5.0 RR
Program Management & Contract Events	NAVWAR PMO CTR	Gov PMO SOW	SI SOW	SI Teams Staffed	NAVWAR PMO CTR	Gov PMO SOW	SI SOW FY23		NAVWAR PMO CTR	Gov PMO SOW	SI SOW FY24		NAVWAR PMO CTR	Gov PMO SOW	SI SOW FY25		NAVWAR PMO CTR	Gov PMO SOW	SI SOW FY26	NAVWAR PMO CTR
Systems Engineering Events		Planning Phase Start			BTR				Execution Phase Start	SMDS V1.0 Deployed			Sustainment Begins 4th Quarter FY24				V2.0 Deployed		V3.0 Deployed	V4.0 Deployed
Test and Evaluation Events					Test Strategy					GAT							Test Strategy			
Cybersecurity Events						Cyber Strategy			IL5 ATO	IL6 ATO							Continuous ATOs			
Logistics Events								RAM, Performance & Help Desk		ILA										ILA

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod						Project (Number/Name) 2906 / Marine Corps IT			

Manpower Operations Systems

As of: 22 Feb 2023

OMMC Funded RDT&E Funded

Capability to be Modernized			Fiscal Year 2024				Fiscal Year 2025				Fiscal Year 2026				Fiscal Year 2027				Fiscal Year 2028				Fiscal Year 2029			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Talent Marketplace/Management		Significant modernization and capability delivery					Continuous integration and delivery				Significant capability delivery		Continuous integration and delivery			Significant capability delivery		Continuous integration and delivery				Significant capability delivery		Continuous integration and delivery		
Retention & Recruiting		Significant modernization and capability delivery					Continuous integration and delivery							Significant capability delivery					Significant capability delivery		Continuous integration and delivery		Significant capability delivery			
Modeling & Analytics		Significant capability delivery		Continuous integration and delivery			Significant modernization and capability delivery							Continuous integration and delivery				Significant capability delivery		Continuous integration and delivery						
Manpower Management/Assignments	Sustainment					Significant modernization and capability delivery							Continuous integration and delivery				Continuous integration and delivery		Significant capability delivery		Continuous integration and delivery					
Performance Evaluation	Sustainment					Significant modernization and capability delivery							Continuous integration and delivery				Significant capability delivery		Continuous integration and delivery		Significant capability delivery					

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0605013M / Marine Corps IT Dev/Mod

Project (Number/Name)

2906 / Marine Corps IT

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Technology Services Organization (DB2 Technical Refresh)</b>				
Establish SABRS DB2 Production Environment: Migrate SABRS Databases to DB2 Production: Migrate SABRS Code to Production	1	2022	1	2022
Establish SABRS DB2 Production Environment: Migrate SABRS Databases to DB2 Production: Migrate ETL tools to Production	1	2022	1	2022
Establish SABRS DB2 Production Environment: Migrate SABRS Databases to DB2 Production: Migrate JCL to Production	1	2022	1	2022
<b>Strategic Management Decision Support (SMDS)</b>				
SMDS Product Development: SMDS Product Development	3	2022	4	2026
SMDS Product Development: Contract Award	4	2022	4	2022
SMDS Product Development: Contract Award Option Year 1	4	2023	4	2023
SMDS Product Development: Contract Award Option Year 2	1	2024	1	2024
<b>Command Individual Risk and Resiliency Assessment System</b>				
CIRRAS v1.1 Development: CIRRAS v1.1 Development	1	2022	4	2023
CIRRAS v1.1 Development: CIRRAS v1.1 FOC	4	2023	4	2023
CIRRAS v1.1 Development: NIWC Contract Award funding increment 3	2	2022	2	2022
CIRRAS v1.1 Development: NIWC Contract Award funding increment 4	2	2023	2	2023
CIRRAS v2.0 Development: CIRRAS v2.0 Development	1	2024	4	2027
CIRRAS v2.0 Development: CIRRAS v2.0 FOC	4	2027	4	2027
CIRRAS v2.0 Development: Schedule NIWC Contract Award funding increment 1	2	2024	2	2024
CIRRAS v2.0 Development: Schedule NIWC Contract Award funding increment 2	2	2025	2	2025
CIRRAS v2.0 Development: Schedule NIWC Contract Award funding increment 3	2	2026	2	2026
CIRRAS v2.0 Development: Schedule NIWC Contract Award funding increment 4	2	2027	2	2027
<b>Total Force Structure Management System (TFSMS)</b>				



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod		Project (Number/Name) 2906 / Marine Corps IT	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
TFSMS Modernization: Modernization Contract Award	2	2023	2	2023
TFSMS Modernization: NIWC Support Funding	2	2023	2	2023
Marine Corps Recruiting Information Support System (MCRISS)				
Interface Development: Initiate development of new interfaces	3	2023	3	2023
Interface Development: Begin development for offline mobile application	3	2023	3	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod				Project (Number/Name) 9406 / Maintenance Data Warehouse			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9406: Maintenance Data Warehouse	0.000	4.029	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.029
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Aviation Logistics Environment (ALE) provides a global logistics enterprise solution, delivering capabilities via a net-centric, shared data environment that supports shore-based, afloat, and expeditionary operations. ALE consists of three components; Ground Station, Aviation PLM, and Enterprise Service Bus (ESB). The Maintenance Engineering Ground Station for Aviation (MEGA) is the Naval Aviation Type/Model/Series (T/M/S)-agnostic ground station. MEGA is currently under development using Government off-the-Shelf (GOTS) software and PLM/ESB is configuring Commercial off-the-Shelf (COTS). The Aviation Product Lifecycle Management (Aviation PLM) capability will provide the digital thread of aviation logistics data for allowable and as-configured Repair Bill of Materials (R BOM) sustainment, technical bulletins, technical directives and engineering change proposals, and reliability centered maintenance and maintenance planning. The Enterprise Service Bus (ESB) capability will provide the digital backbone for data connections to and from authoritative data sources. ALE consolidates aging, near-end-of-life systems and applications and aligns Information Assurance (IA) and cybersecurity requirements.

As of the FY 2022 submission, Marine Corps and Navy funding was broken into two Program Elements to increase transparency on funding for the ALE effort. This line was complementary to the existing Navy Program Element and is being used to increase visibility on the total program requirement.

In FY 2023 funds from this PE were realigned back to PE 0605013N to avoid the perception of duplicative efforts between 0605013N and 0605013M. This effort is additive to the existing Navy program element to create a total program requirement.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Aviation Logistics Environment (ALE)	4.029	0.000	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> N/A					
<b>FY 2024 Base Plans:</b> N/A					
<b>FY 2024 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	4.029	0.000	0.000	0.000	0.000



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod	Project (Number/Name) 9406 / Maintenance Data Warehouse
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A		
<b>Remarks</b>		
<b>D. Acquisition Strategy</b> The management approach includes the Logistics IT Portfolio Management Office residing in NAVAIR as part of Program Executive Office for Aviation Common Systems and Commercial Services.  Aviation Logistics Environment (ALE)- Development services will be awarded using a competitively awarded contract that will contain a matrix of tasks and required levels of performance. Follow on contracts will also follow the same competitive system. The Services provided under the contract support acquisitions will not encompass tasks inherently Governmental in nature and the Statements of Work will include a matrix that establishes the minimum acceptable performance standards.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod				Project (Number/Name) 9406 / Maintenance Data Warehouse					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development for Aviation Logistics Environment (ALE)	Various	Various : Various	0.000	2.976	Feb 2022	0.000		0.000		-		0.000	0.000	2.976	1.938
Development for Aviation Logistics Environment (ALE)	C/CPFF	KBR : Patuxent River, MD	0.000	0.877	Jan 2022	0.000		0.000		-		0.000	0.000	0.877	2.000
Subtotal			0.000	3.853		0.000		0.000		-		0.000	0.000	3.853	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for Aviation Logistics Environment (ALE)	WR	FRC : Patuxent River, MD	0.000	0.176	Oct 2021	0.000		0.000		-		0.000	0.000	0.176	0.241
Subtotal			0.000	0.176		0.000		0.000		-		0.000	0.000	0.176	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	4.029		0.000		0.000		-		0.000	0.000	4.029	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod		Project (Number/Name) 9406 / Maintenance Data Warehouse	

	FY2021				FY2022				FY2023				FY2024				FY2025				FY2026				FY2027			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALE																												
Software Development																												
Test & Evaluation																												
Test & Evaluation																												
Deliveries/Field Implementation																												
T/M/S Onboarding																												
LD-Limited Deployment																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013M / Marine Corps IT Dev/Mod	Project (Number/Name) 9406 / Maintenance Data Warehouse	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Aviation Logistics Environment (ALE)</b>				
Software Development: PLM Solution/ESB/MEGA Limited Deployment 5	1	2022	2	2022
Software Development: PLM Solution/ESB/MEGA Limited Deployment 6	3	2022	4	2022
Test and Evaluation: LD 5 Test and Evaluation	2	2022	2	2022
Test and Evaluation: LD 6 Test and Evaluation	4	2022	4	2022
Implementation: T/M/S Onboarding LD 5	2	2022	2	2022
Implementation: T/M/S Onboarding LD 6	4	2022	4	2022

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0605013N / <i>Information Technology Development</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	1,172.759	261.195	318.103	282.138	-	282.138	258.893	137.283	120.127	122.975	Continuing	Continuing
2901: <i>Navy Enterprise IT</i>	157.387	38.065	54.215	37.099	-	37.099	48.239	46.776	29.603	30.218	Continuing	Continuing
2903: <i>NAVAIR IT</i>	70.606	4.607	11.413	13.979	-	13.979	14.365	14.167	14.194	14.528	Continuing	Continuing
2904: <i>NAVSEA IT</i>	306.041	15.930	17.474	19.431	-	19.431	21.171	20.411	20.113	20.515	Continuing	Continuing
2905: <i>BUPERS IT</i>	404.341	135.110	145.401	137.692	-	137.692	123.995	4.460	4.024	4.104	Continuing	Continuing
2953: <i>Model Based Product Support (MBPS)</i>	0.000	0.000	10.817	20.532	-	20.532	0.334	0.318	0.290	0.296	Continuing	Continuing
3167: <i>Joint Technical Data Integration (JTDI)</i>	53.845	5.723	6.437	8.077	-	8.077	8.024	7.932	8.069	8.306	Continuing	Continuing
3185: <i>Joint Airlift Information System (JALIS)</i>	3.316	0.351	0.474	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.141
9406: <i>Maintenance Data Warehouse</i>	136.208	30.518	44.122	45.328	-	45.328	42.765	43.219	43.834	45.008	Continuing	Continuing
9999: <i>Congressional Adds</i>	41.015	30.891	27.750	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	99.656

**A. Mission Description and Budget Item Justification**

2901 Navy Enterprise IT

**SECNAV PROJECTS IT SYSTEM MODERNIZATION**

The Department of the Navy Chief Information Officer, Technology Division (DONCIO IT) provides Information Technology (IT), Information Assurance (IA), Information Management (IM), Document Management (DM), Records Management (RM), Knowledge Management (KM) and other related support services to the Secretary of the Navy (SECNAV), Chief of Naval Operations (OPNAV), and the DON Secretariat. This support spans across over 24 organizations, covers nearly 6,000 individual customers, and countless worldwide end users.

**ELECTRONIC PROCUREMENT SYSTEM (ePS)**

ePS provides the Department of the Navy Solution for Electronic Contract Writing replacing the existing Standard Procurement System (SPS) and DoN Integrated Contracting Environment (DICE) capabilities and deficiencies. ePS aligns Contract Writing System (CWS) with Financial Improvement Audit Readiness requirements

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>
<p>mandated by Congress and the Department of Navy's goal for an auditable link between financial management and contract writing system. It supports strategic sourcing and seamless exchange of data in addition to evolving to meet changing requirements. The improved capabilities will meet emerging data standards Procurement Data Standards/Procurement Request Data Standards (PDS/PRDS), in addition to complying with Office of the Secretary of Defense (OSD) Clause Logic Service. ePS meets the intent of the National Defense Authorization Act of 2013 by providing an electronic means to award contracts.</p> <p>NMCI ENTERPRISE SERVICE TOOLS (NEST)</p> <p>Navy's Next Generation Enterprise Network (NGEN) utilizes the NMCI Enterprise Service Tools (NEST) as an integrated set of tools that facilitate the full service lifecycle management (SLM) of customer service requests for IT services, including RAPT(Requirement to Award Process Tool), NET (NMCI Enterprise Tool), and Enterprise Reporting. NEST is considered a Government Owned/ Contractor Operated defense business system (DBS) that has a valid ATO.</p> <p>NEXT GENERATION ENTERPRISE NETWORK (NGEN)NETWORK ARCHITECHTURE DESIGN AND TESTING</p> <p>The Next Generation Network (NGEN) program mission is to ensure and provide a modernized enterprise approach to delivery of a fully integrated, interoperable, and secure networking platform capable of delivering the information technology (IT)-based mission needs of major Fleet and shore-based Navy claimants and stakeholders. The network has begun modernization efforts towards a flexible and agile IT standard approach, using an architecture and service strategy aligned with commercial best practices. The new service delivery approach features diverse sourcing, leveraging of cloud/web-scale infrastructure and software-defined flexibility, which the Navy will seek to take advantage of the NGEN-R family of contracts.</p> <p>NGEN is implementing a technical enterprise architecture that replaces obsolete technologies associated with NMCI and ONE-Net platforms. Navy's Digitization Journey is dependent upon the Navy's Enterprise Network. The modernized platform will meet today and future mission requirements. Current on-premise infrastructure must transform and evolve to a future cloud native environment to enable the warfighter to access data across multiple domains. Through recapitalization of applicable legacy hardware and converging network infrastructure toward a cloud native design, Next Generation Enterprise Network will reduce the need for constant platform reconfiguration and ensure the end-user receives current capabilities required to perform job functions at various classification levels. Multifactor authentication and centralized management of user personas enables zero-trust based cyber security from the onset of system development throughout the entire lifecycle. Uniform enterprise security controls across the system lifecycle ensures consistency across the development, testing, and operational phased deployment workflow thus reducing rework. The flattened network design will enable contracting and acquisitions to quickly deploy solutions from the labs to the user community in near real-time.</p> <p>2903 NAVAIR IT</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>
<p>Navy Cybersecurity - Cyber Warfare consists of many different aspects to include sabotage of our weapon systems, networks as well as enablement of missions. Nation and non-nation state actors are acquiring and employing more advanced cyber-attacks in order to exploit our networks and aviation systems challenging our technological edge. The threats and capabilities are real and range from exploiting capabilities, overloading weapons systems and logistics supply chains, to jamming signals or taking control of weapons systems. We must defend against adversarial cyber attacks while contributing to the exploitation of cyber warfare capabilities.</p> <p>To meet these challenges and address the Chief of Naval Operations priorities and tasking, these R&amp;D efforts are specifically focused on Naval Air Systems Command weapon or control systems and programs to ensure warfighting effectiveness as part of integrated / multi-platform kill chains. These research and development efforts will strengthen our cyber posture by developing research, development, test and evaluation capabilities and solutions to deter, detect, and mitigate cyber threats and safeguard classified naval aviation systems and platforms from "cradle to grave." These solutions will be integrated into the acquisition of weapons systems to enhance security, increase lethality, and improve resiliency in the expected operational environments. Our weapon or control systems are unique in the aforementioned environments and mission, but also in the presence of numerous non-traditional access points and trusted cyber relationships required for operational environments.</p> <p>Further, this line sustains Naval Aviation's Red Team capability to research, identify and validate nation-state exploitable cyber susceptibilities and vulnerabilities in both deployed and next-generation warfighting platforms. Through it, these efforts improve Naval Aviation's mission survivability by developing and demonstrating operational TTPs within the cyber contested environment. The team partners with Naval Aviation programs to certify theorized cyber weaknesses and thus to prevent denial, degradation or disruption of safety, readiness, and mission. The Red Team's assessment products support CYBERSAFE certification of platforms and systems, and likewise supports PMAs and OPNAV with validated threat data prioritizing systems security engineering (SSE) investments. The team leverages national-level cyber warfare experts, all-source intelligence, and technology research to assess NAE operational technology, fleet exercises, support equipment, enterprise logistics systems, and supply chain.</p> <p>Digital Thread (DT) - Funding provides a Naval Enterprise Solution to manage technical data required for weapons systems to promote workforce automation, resource optimization, and process standardization for program lifecycle management and to integrate acquisition with the warfighter. This will support future state for Logistics IT and enhancing Readiness in providing an enterprise solution with Naval Product Lifecycle Management (N-PLM). N-PLM is integral to Digital Log IT, supporting the Naval Maintenance, Repair, and Overhaul (N-MRO), Naval Supply Chain Management (N-SCM). Digital Thread (DT) is the capability providing digital process integration with complete, secure and authoritative data, coordinated as part of approved Navy LOG-IT. DT integrates the product life cycle to provide universal access to authoritative data and workflow automation, enabling configuration management of data, implementation of closed loop quality, and consolidation of engineering products including digital enablement of additive manufacturing. Connecting these processes using standardized digital tools and data accelerates the product development cycle and lowers costs for support and new capability integration. The Digital Thread capability includes development and demonstration of cyber security architectures for sustainment information systems, and development of a digital/additive manufacturing data architecture and repository. DT capability will benefit the speed to the Fleet with reduction of active legacy systems that stakeholders (PMAs, Squadrons, Depots, OEM, and Shipyards) are accessing for authoritative data.</p> <p>Digital Production Floor (DPF) - Initiative modernizes Navy Aviation Depots by removing paper from the Production floor and integrating key Quality elements to support a true digital North Star ensuring viability and alignment with broader Naval Logistics IT (LOG-IT) enterprise initiatives to realize a fully unified digital sustainment capability. This capability aligns and leverages ongoing Digital Thread /Aviation Product Lifecycle Management (AvPLM) efforts to transform our existing way of doing</p>		

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<p>business and align us with commercial best practices for digitization of business processes. Current paper based processes have demonstrated inefficiencies and administrative delays in performance, degraded quality of product, and increased Depot level repair turnaround times.</p> <p>Radio Frequency Identification (RFID) - Digital tracking infrastructure enabling enhanced inventory and asset tracking capability with real-time or near real time visibility of fixed and rolling assets for accountability. Signed DD200s document lost tagged assets, therefore, each of these assets are large enough to be tagged. This capability will reduce the amount of DD200s by approximately 95%. By digitizing this capability, labor man-hours spent manually performing inventory tasking requirements will be reduced by ~33% overall. This initiative will provide the necessary foundational infrastructure and enable expansion to other use cases such as tool control, parts tracking, and HAZMAT tracking. Moving from manual, labor-intensive (~30 man-years) inventory method for fixed and rolling assets to an automatic digital method will provide real-time or near real time visibility into asset location throughout the facility, alerts when assets that are taken out of a geo-fenced location, and the ability to perform frequent inventory inspections; therefore, providing enhanced asset management. This will be accomplished by the implementation of compatible and integrated solutions via a blended technology approach (i.e. RFID, GPS, etc.) that is in direct support of the objective to realize a full Digital Production Floor at the Aviation Depots.</p> <p>Additive Manufacturing (AM) - Provides for the development of the Additive Manufacturing/3D Printing Process, Material Verification and Qualification to support deployment of Additive Manufacturing capability to Fleet Depot and Level II Maintenance level facilities, as well as provides for the Qualification, Validation, Testing and incorporation of private industry Additive Manufacturing initiatives across the Naval Aviation Enterprise to include NAVSUP and DLA. Additionally Additive Manufacturing funds Cooperative Research and Development Activities (CRADAs) support with Industry Partners and next generation AM studies. This effort will fund the development, test and approval of additional Polymer Material Data Curves, Polymer material certification for aviation applications and System Documentation/ Training updates of additional high strength Polymers for use on deployed Additive Manufacturing systems. This will support deployed systems in producing Critical parts for Aircraft, Support Equipment and Aircraft Launch and Recovery Equipment, while enhancing Naval Aviation Readiness and Lethality allowing point of need part manufacturing to mitigate supply support shortfall, dramatically decreasing Mean Logistics Delay Times (MLDT) and increasing aircraft availability.</p> <p>2904 NAVSEA IT</p> <p>This program includes the funding for the Information Technology (IT) tools utilized in shore maritime maintenance planning, execution, tracking, quality control, certification, closeout, employee qualifications, and payroll. This program supports ship, submarine, and aircraft carrier maintenance. The Navy Maritime Maintenance Enterprise Solution (NMES) includes efforts for the development, support, and sustainment of maritime shore maintenance and includes multiple modernization efforts to insure effectiveness of Fleet maintenance systems. This includes the retirement and/or replacement of costly systems and applications, transition planning, and systems engineering for integration with current and future enterprise solutions. These efforts align with direction to insure that these solutions support a planned, single maintenance solution end state, as well as direction to align with multiple laws, regulations, policies, and guidance across the FYDP. It includes the modernization of Naval Shipyard, Regional Maintenance Centers, and Forward Deployed Naval Forces' planning, Maintenance, Repair and Overhaul (MRO) production tools. This includes modifications/enhancements to Shipyard IT applications, for work execution management, critical chain scheduling, workload and performance applications, the availability cost tracking, and material management applications, and other solutions such as the Electronic Technical Working Document (eTWD) initiative. The goal</p>		



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<p>is to provide modernization, migration, and consolidation of obsolete legacy IT tools to a modern, supportable, and modular solution enabling Fleet Maintenance across Intermediate and Depot level maintenance activities worldwide for the Navy.</p> <p>2905 MyNavy HR</p> <p>MyNavy Human Resources (HR) Transformation - formerly known as Manpower, Personnel, Training &amp; Education (MPT&amp;E) Transformation -- will change how we recruit, how HR services are provided throughout a Sailor's entire "Hire-to-Retire" lifecycle and improve fleet combat readiness. By streamlining processes and systems, MyNavy HR will improve the speed, accuracy, and quality of personnel and pay services, better positioning the Navy to equip and manage its people. This effort is the linchpin of the Navy's MPT&amp;E Business IT Transformation strategy that stems from investing in programs that directly align with the Sailor 2025 vision. The current 70-year-old business processes and 40-year-old obsolete IT systems will not sustain anticipated Fleet growth and is neither cost efficient nor effective. MyNavy HR involves revolutionary change by using agile delivery model to the greatest extent possible to implement business IT products using the Industry Best Practices Model (e.g., early investment for largest ROI, rapid prototyping, and vanilla COTS products usage.) MyNavy HR is a fully integrated portfolio of IT Systems organized into five distinct pillars: Navy Personnel and Pay (NP2), Learning Stack (LS), Enterprise Customer Relationship Management (eCRM), Single Point of Entry (SPOE), and Authoritative Data Environment (ADE). This portfolio of systems serves as the cornerstone of the OPNAV N1 MyNavy HR strategy. The impetus for building an adaptive family of systems is gearing MyNavy HR Transformation towards customer needs. The traditional waterfall delivery methodology of IT goods and services cannot meet the emergent requirements evolving from shortened technical obsolescence. Thus, MyNavy HR Transformation will employ an Agile delivery method that is highly structured, with a repeatable software development approach designed to quickly deliver usable capability to the end user. These capabilities are packaged as Minimum Viable Products (MVPs) which are routinely delivered to the customer for their use and evaluation. Favorably received MVPs are subsequently refined and integrated into a production baseline. Rapidly integrating a family of systems using an agile methodology necessitates an overarching system integrator and coordinator to ingest pilots and prototypes into a technical baseline. MNHR ITS will provide the Global Design &amp; Strategic Planning to baseline the "55 to 1" technical execution plan and will articulate the "system of systems" baseline release. Additionally, pilots and prototypes that have reached sufficient maturity will be integrated and deployed into the production baseline.</p> <p><b>AUTHORITATIVE DATA ENVIRONMENT (ADE)</b></p> <p>The Authoritative Data Environment (ADE) is an enterprise information management system that will migrate the existing MyNavy HR legacy data warehouses into a central data repository that is composed of a data warehouse, data lake, data management tools and an Application Program Interface (API) Layer. ADE will provide an authoritative data-sharing framework, leveraging scalable and interoperable technologies as well as business intelligence and data analytic capabilities. ADE will need to interface and integrate with SPOE and all MyNavy HR transactional and business systems, including enabling 'plug &amp; play' of new services, technologies, and system capabilities. Some of the key principles of ADE include:</p> <ol style="list-style-type: none"> <li>1. Flexible architecture and scalable design.</li> <li>2. Data Governance to produce authoritative, cleansed, conformed, consolidated, and calculated data.</li> <li>3. Data Access to specified users.</li> <li>4. Master Data Management (core elements, metadata tagging, business rules, standards, metrics, and tools).</li> <li>5. Data analytics and business intelligence (descriptive, prescriptive, and predictive).</li> </ol>		

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<p>6. Identification, development, and maintenance of enterprise data policies.</p> <p>ENTERPRISE CUSTOMER RELATIONSHIP MANAGEMENT (eCRM)</p> <p>The eCRM solution will integrate business processes, supporting systems, and authoritative data in support of Navy Personnel Command's (NPC's) MNCC (My Navy Career Center), Navy Recruiting Command (NRC), Navy Education &amp; Training Command (NETC), and other commands that manage the Navy workforce. The eCRM solution provides an approach to manage information on current and future Sailors, veterans, and their families. The eCRM solution is organized by the following segments:</p> <ol style="list-style-type: none"> <li>1. Sales Management - recording all stages of the prospecting process to include contact management, leads tracking, forecasting and initial processing.</li> <li>2. Knowledge Management - providing the tools for identifying, capturing, evaluating, retrieving, and sharing information assets.</li> <li>3. Case Management - supporting the automation of processes to formulate opinions, approvals, and fulfillment of case related requests.</li> <li>4. Performance Management- supporting the performance of Navy Sailors.</li> <li>5. Recruiting - eCRM capabilities provide several functions in support of the Navy's recruiting needs, to include:               <ol style="list-style-type: none"> <li>A. Provide personally identifiable information (PII) in a commercial cloud platform.</li> <li>B. Provide ability for users to access mobile platforms.</li> <li>C. Meet Navy Cybersecurity requirements to protect Impact Level (IL) 4 data and will achieve an Authority to Operate (ATO) from the Navy Authorizing Official (NAO).</li> <li>D. Support non-recruiting activities and address case management and knowledge management. Case management functionality supports tracking incidents, and knowledge management provides for sharing and collaborating across various business areas.</li> </ol> </li> </ol> <p>LEARNING STACK (LS)</p> <p>The Learning Stack will provide a cloud-based material solution that will streamline learning management (course/content delivery and assessments), capture and record interactive learning experiences, enable curriculum authoring and development, provide student Sailor registration and administration, create and regulate course/student scheduling, and offer e-learning capabilities, such as distance learning.</p> <p>The Learning Stack is a delivery vehicle for the following core objectives of the Ready Relevant Learning (RRL) initiative:</p> <p>Learning Management System (LMS) with Assessments - MyNavy Training (MNT)</p> <p>MyNavy Learning (MNL)/Learning Object Repository (LOR)</p> <p>Curriculum Development System (CDS)</p> <p>Student Information System (SIS)</p> <p>Enterprise Resource Scheduler (ERS)</p> <p>The Learning Stack is one of three lines of effort that is the Navy's strategy for IT learning continuum. The other two are RRL content modernization, and the Training Network infrastructure. Collectively, these three individual efforts will cultivate instruction content that meets Fleet validated needs (ashore and afloat), and provide keystone delivery mechanisms that will decrease training timelines, assimilate operational agility, and improve overall mission readiness.</p>		

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<p>Additionally, the Learning Stack supports the MyNavy HR Transformation Program that includes yet expands beyond the RRL core initiatives identified above. In support of the broader MyNavy HR enterprise, the Learning Stack will provide a centralized, authoritative repository for Interactive Multimedia Instruction (IMI) courseware, officer and citizen development (NJROTC and ROTC candidate management), enlisted advancement exam development and distribution, enlisted degree completions, and tuition assistance authorizations.</p> <p>The RRL and MyNavy HR Transformation initiatives require the development of Learning Stack capabilities that permit:</p> <ol style="list-style-type: none"> <li>1. Mobile &amp; flexible delivery of modular training to the Sailor</li> <li>2. Synchronization of work requirements with learning modules to ensure proper training delivery</li> <li>3. Leveraging cloud-hosted capabilities to optimize the Learning Stack delivery model</li> </ol> <p><b>NAVY PERSONNEL AND PAY (NP2)</b></p> <p>A 2015 analysis of alternatives for integration of personnel and pay capabilities recommended the use of Oracle PeopleSoft 9.2 with Global Payroll for achieving the Navy's Personnel and Pay IT needs. Follow-on analysis conducted as part of the MyNavy HR Transformation efforts in 2016 and 2017 indicated that the most cost effective approach to achieving the Transformation goals of modernizing HR Business System IT consistent with industry best practices was de-customization of the Navy Standard Integrated Personnel System (NSIPS) which uses Oracle PeopleSoft as its core technology, integration with Global Payroll, use of General Ledger to maximize auditability and accounting functions and hosting of the integrated solution. Navy Personnel and Pay (NP2) will develop and sustain the core system of systems architecture; executing pilot programs and iterative development of capabilities for Navy's MyNavy HR Transformation.</p> <p>The NP2 adapts and reengineers business processes to conform to the technical parameters of PeopleSoft 9.2 while integrating with the Direct to Treasury Pay Capability via Pay Modernization (Pay Mod). This combined effort will result in a minimally-customizable vanilla configured Commercial Off the Shelf, cloud hosted, integrated personnel and pay solution that will provide the Navy with an IT system that is modern, highly automated, auditable, and more efficient.</p> <p>Implementation of NP2 will result in several key benefits:</p> <ol style="list-style-type: none"> <li>1. Improved accuracy and auditability of personnel and pay transactions.</li> <li>2. Treasury Direct Disbursing eliminating Navy reliance on the Defense Joint Military Pay System.</li> <li>3. Improved permeability of Active and Reserve Components to improve accuracy and eliminate delays in pay processing when a member moves between components.</li> <li>4. Increased automation of common personnel and pay transactions</li> <li>5. Integration of functionality currently spread across 55+ different adhoc and outdated HR Business Systems.</li> </ol> <p><b>SINGLE POINT OF ENTRY (SPOE)</b></p> <p>SPOE is an integrated, unified capability that includes MyNavy Portal (MNP), Mobile Applications, and Identity, Credential and Access Management (ICAM). It also includes integration with eCRM, NP2, and ADE solutions. SPOE consolidates the Navy's HR portals, knowledge, and applications into a single simplified Sailor experience. Through a multi-phased modernization approach, SPOE provides an intuitive self-service capability for Sailors to view and manage their personnel and career information. It provides Active and Reserve Sailors with personalized interactive experiences and access to relevant information including learning content, HR applications, and career business processes. SPOE forms a foundational capability for the MyNavy Career Center (MNCC) by connecting its portal and ICAM</p>		

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<p>functionality with eCRM. The Navy’s strategy for transformation of its MyNavy HR capabilities relies on SPOE as the user-facing capability linking Sailors to modernized personnel and pay capabilities, MyNavy Training (MNT), and ADE.</p> <p>SPOE includes processes, capabilities, and functionalities, such as:</p> <p>1. Integration of capabilities to include: My Navy Portal (MNP), Mobile Applications, CRM solution, and Identity Credential Access Management (ICAM)</p> <p>2. MNP</p> <p>A. Serve as the My NavyHR's single point of entry to Sailors HR resource</p> <p>B. Provide capability to have a low bandwidth version accessible to Sailors operating in a restricted bandwidth environment</p> <p>C. Provide CAC-free access for Sailors accessing MNP via personal devices such as smart phones, tablets, personal laptops and computers.</p> <p>D. Provide solution set for disconnected Operations</p> <p>E. Provide a private portal for Sailors to access personal HR information</p> <p>F. Provide a public presence for access to non- sensitive information.</p> <p>3. ICAM</p> <p>A. Provide authentication and Single Sign-On (SSO) capability for access to the objective MyNavy HR capability.</p> <p>4. Mobility Program</p> <p>A. Maintain the ability to host and manage mobile applications through Apple/iTunes &amp; GooglePlay app stores and host information in MyNavy HR's Navy App Locker website and mobile app. (www.applocker.navy.mil)</p> <p>B. Provide Mobile application management suite/platform and processes for agile development and sustainment of apps' portfolio.</p>		
<p>2953 MODEL BASED PRODUCT SUPPORT (MBPS) - Formerly known as Product Lifecycle Management (PLM)</p> <p>Logistics Information Technology (LOG-IT) modernization will provide the capability of performing integrated, real-time, data driven operational and shore logistics. LOG-IT systems must be able to operate in disconnected environments with modern, cyber-secure and auditable systems that Compress the Kill Chain. The MBPS program is major authoritative data source for LOG-IT. The MBPS program modernizes ship / submarine readiness modeling, technical data management, and configuration management IT systems to enable advanced digital twin and readiness analytics capabilities. MBPS provides capability directed by ASN RDA (IAW ASN RDA Acquisition Decision Memorandum of 5/25/2021) in support of Digital Transformation to migrate legacy LOG IT applications into an integrated Navy Product Life-Cycle Management (N-PLM) environment to include both maritime and aviation support. It will be hosted in a Government-approved commercial cloud environment and used on a 24/7 basis by over 200,000 personnel assigned to 286 ships/submarines, all aircraft and over 700 shore-based activities, impacting a yearly \$6.5B investment in product sustainment.</p> <p>Additional resources are required to complete MBPS capability to execute the replacement of legacy LOG IT systems into N-PLM to support Planned Maintenance, Modernization Planning, and Operational Availability reporting. Use of RDT&amp;E funding allows for performance of engineering development, design testing, data</p>		

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<p>integration, training development and cybersecurity requirements and award capability development via Other Transaction Authority or via PTC development contract to complete MBPS MVPs and align efforts with NAVAIR under PEO MLB to transition to a single Navy PLM beginning in FY23.</p> <p>Per CNO's address to SASC 31 July 2019, "Given the changing security environment and the increasingly multi-domain nature of threats, accelerating our Navy's digital transformation will be critical to preparing our Sailors to deter, fight and win. Digital technologies have the potential to be a force multiplier, putting data at the center of all of our decisions and transforming how we fight, stay ready, and conduct business operations." MBPS will enable global visibility across all weapon systems, all echelons and all supported units with real-time logistics and readiness data in a single picture to compress the logistics kill chain.</p> <p>3167 JOINT TECHNICAL DATA INTEGRATION (JTDI)</p> <p>Joint Technical Data Integration (JTDI) Program - Funding provides an enterprise common data transport solution to support the future state for Logistics IT and Readiness: Naval Product Lifecycle Management (N-PLM), Naval Maintenance, Repair, and Overhaul (N-MRO), Naval Supply Chain Management (N-SCM), and Integrated Data Environment (IDE). In addition to transporting authoritative technical data to maintainers in the ashore, afloat, and expeditionary environments, JTDI also automates the movement of CBM+ data generated by smart weapon systems deployed around the globe, consolidates and makes platform sensor data available for automated ingest into the Standard Data Repository, which provides modern, highly integrated analytic capabilities to enable condition-based maintenance processes. JTDI is a digital technical data access, delivery and local Organizational &amp; Intermediate level library management toolset that improves accuracy and timeliness of weapon system repair manuals and other technical data delivery, minimizes the Fleet's library management burden, and reduces maintenance work hours with a Return on Investment of 2.5:1. Funding supports the evaluation, testing and integration to develop a JTDI Government Off-The-Shelf (GOTS) solution for installation on Carrier and Amphibious Assault class ships, the Consolidated Afloat Networks and Enterprise Services Network (CANES), and at other globally deployed Navy/Marine Corps activities. JTDI is aligned with NAVAIR LOG IT digital transformation objectives and Navy Digital Roadmap.</p> <p>Marine Aviation Logistics Enterprise Information Technology (MAL-EIT) - MAL-EIT funding supports the evaluation, development, testing and integration of software and hardware solutions across all US Marine Corps Aviation activities to be used in the planning and execution of geographically distributed, expeditionary Aviation Logistics (AVLOG) chains in support of deployed USMC Air Combat Element operations. The MAL-EIT Program is one of four programs contained within the Marine Aviation Logistics Support Program (MALSP) modernization program known as MALSP II. Legacy MALSP is nearly 25 years old and grossly inadequate in IT capability to meet the informational, planning, and C2 needs of a dynamic, geographically distributed nodal AVLOG system. MAL-EIT is a Defense Business System Abbreviated Acquisition Program that will develop and deliver the required IT capability necessary to eliminate the IT related gaps existing in the legacy MALSP. MAL-EIT is a family of IT solutions to be developed and delivered in three increments. These increments are depicted below:</p> <p>Expeditionary Pack Up Kit (EPUK): Provides Expeditionary Supply Operations to include business administration, inventory, and customer service operations.</p> <p>Next Generation Buffer Management System: Provides buffer management in a time domain, and buffer sizing analysis.</p>		

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Logistics Planning Tool and Optimizer Tool: Provides capability to develop tailored Remote Expeditionary Support Packages, consumption forecasts, and Nodal Logistics Lay down designs.		
<p>3185 JOINT AIR LOGISTIC INFORMATION SYSTEM (JALIS)</p> <p>JALIS is an operational scheduling and aircraft management system that facilitates real-time data analysis. JALIS is a critical element in the management of DoD air logistics assets. JALIS allows:</p> <ol style="list-style-type: none"> <li>(1) DoD Service Personnel to submit airlift requirements for DoD Personnel and cargo</li> <li>(2) Air Logistics Flying Units to communicate their aircraft availability in a real-time graphic display</li> <li>(3) Designated Scheduling Organizations to compare airlift requirements with available aircraft</li> <li>(4) Designated Scheduling Organizations to create mission assignments</li> </ol> <p>JALIS informs applicable users of mission details and modifications by using a combination of system displays and email updates. JALIS is geographically distributed and has a user base in excess of 4,000 members. JALIS facilitates the movement of thousands of DoD Personnel and tons of cargo annually in support of the following:</p> <ol style="list-style-type: none"> <li>(1) Navy Unique Fleet Essential Airlift</li> <li>(2) Army's Operational Support Airlift Agency (OSAA)</li> <li>(3) United States Transportation Command (USTRANSCOM)</li> <li>(4) United States Marine Corps (USMC)</li> </ol>		
<p>9406 MAINTENANCE DATA WAREHOUSE</p> <p>Maintenance Data Warehouse funds the Naval Aviation Enterprise (NAE) components, in coordination with Navy LOG-IT, of digital transformation, which is a critical component of improving readiness; giving Navy users access to authoritative truth data and automating inefficient manual processes. It will be executed in a fully agile manner providing continuous fleet readiness improvements across the FYDP. The initial configuration will be supported with an agile Minimal Viable Product (MVP) as the foundation for continuous capability introduction. The Aviation Logistics Environment (ALE) will provide the seamless environment to support the integration of the other capabilities developed in Maintenance Data Warehouse.</p> <p>Aviation Logistics Environment (ALE) provides the Naval Aviation Enterprise (NAE) components, in coordination with Navy LOG-IT, of digital transformation, which is a critical component of improving readiness; giving Navy users access to authoritative truth data and automating inefficient manual processes. It will be executed in a fully agile manner providing continuous fleet readiness improvements across the FYDP. The initial configuration will be supported with an agile Minimal Viable Product (MVP) as the foundation for continuous capability introduction. The Aviation Logistics Environment (ALE) will provide the seamless environment to support the integration of the</p>		

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<p>other capabilities developed in Maintenance Data Warehouse. Aviation Logistics Environment (ALE) provides a global logistics enterprise solution, delivering capabilities via a net-centric, shared data environment that supports shore-based, afloat, and expeditionary operations. ALE consists of three components; Ground Station, Aviation PLM, and Enterprise Service Bus (ESB). The Maintenance Engineering Ground Station for Aviation (MEGA) is the Naval Aviation Type/Model/Series (T/M/S)-agnostic ground station. MEGA is currently under development using Government off-the-Shelf (GOTS) software and PLM/ESB is configuring Commercial off-the-Shelf (COTS). The Aviation Product Lifecycle Management (Aviation PLM) capability will provide the digital thread of aviation logistics data for allowable and as-configured Repair Bill of Materials (R BOM) sustainment, technical bulletins, technical directives and engineering change proposals, and reliability centered maintenance and maintenance planning. The Enterprise Service Bus (ESB) capability will provide the digital backbone for data connections to and from authoritative data sources. ALE consolidates aging, near-end-of-life systems, and applications and aligns Information Assurance (IA) and cybersecurity requirements.</p> <p>Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) program is the next generation data warehouse containing over 30 years of aircraft maintenance, flight, components, and usage data. Through the use of web-based, commercial off the shelf software for data load, analysis, query, and reporting tools, the user has the capabilities to effectively obtain readiness data in a near real-time environment, as well as providing historical data for long range planning, trend and records analysis, records reconstruction, and compliance with technical directives. DECKPLATE supports the mission of the warfighter who requires a single source of near real-time aviation data in which to base critical readiness decisions. DECKPLATE collects data from authoritative sources, such as the fleet maintenance systems, into a data warehouse. To provide the warfighter with a common view of Logistics IT data, the time consuming tasks of collecting, extracting, transforming, and loading source data will enable an federated data view that will reduce and ultimately eliminate duplicative and manual processes, while providing visibility and access to trusted data for decision support. This also accomplishes a reduction in legacy systems mandated by Office of the Chief of Naval Operations. DECKPLATE manages total inventory for two major categories of assets, Aircraft (General Equipment) and Engine/Propulsion Systems/Modules (EPSMs) (Operating Materials &amp; Supply). DECKPLATE is comprised of the transactional Aircraft Inventory and Readiness Reporting (DECK-AIRRS) and the Engine Transaction Reporting (DECK-ETR) subsystems, which provide the complete lifecycle for aircraft and Engine/ Propulsion System/Modules (EPSMs). DECKPLATE has been identified as a level 1 financial feeder system due to the value of the aircraft and EPSM's managed in the system, and continues to respond to audit compliance and Cyber Security mandates. DECKPLATE is a core feeder system to numerous NAVAIR efforts.</p> <p>Condition Based Maintenance Plus (CBM+) solution is an initiative which provides Naval Aviation Enterprise with common enabling capabilities which deliver timely data-driven, decisional information to optimize aircraft availability and materiel readiness by incorporating health and usage leading indicators into the failure mode mitigation process, enabling the Warfighter to more efficiently meet mission requirements through automated analysis and decision making processes. The CBM + initiative increases readiness through streamlined maintenance processes which provide the sustainment base with timely, actionable logistics/engineering data and integrated analytics not previously available, enabling engineers and acquisition professionals to support system improvements based on CBM+ technologies, acquired data, and business process integration of analytic results. CBM+ provides the enabling infrastructure and storage solutions within an Enterprise common environment needed to store and analyze weapon system sensor data to extend the life of current and new acquisition aircraft, realizing savings from reductions in field (organizational and intermediate) maintenance actions, reduced functional check flight hours, mishap mitigation, and reduced parts usage.</p> <p>Vector supports the development of a common logistics analytical tool suite, which provides a single view of data and insights focused on aircraft readiness, maintenance, supply, cost, and man-hours. Vector provides naval aviation with a common view of approved key performance metrics and the capability to perform multi-system analysis of Ready for Tasking (RFT)/Ready Basic Aircraft (RBA) Gap drivers, 'Top-Down' aircraft systems analysis down to the component level. Vector</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605013N I Information Technology Development				
identifies system performance trends early to mitigate future readiness and cost impacts to the fleet. This is critical for fleet understanding of readiness degraders and issue resolution.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		271.085	290.353	234.360	-	234.360
Current President's Budget		261.195	318.103	282.138	-	282.138
Total Adjustments		-9.890	27.750	47.778	-	47.778
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	27.750			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-9.890	0.000			
• Program Adjustments		0.000	0.000	53.506	-	53.506
• Rate/Misc Adjustments		0.000	0.000	-5.728	-	-5.728
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 9999: Congressional Adds						
Congressional Add: Aviation innovative cyber solutions						
Congressional Add: Cyber solutions in classified environments						
Congressional Add: Warfare mission analysis in cyber contested environment						
Congressional Add: Product lifecycle management for naval aviation						
Congressional Add: Actionable analytics for reliable maintenance						
Congressional Add: Advanced shipyard technologies						
Congressional Add: Digital twin development						
Congressional Add: Broadband network for Navy owned research vessels						
Congressional Add: Classified data exchange environment for submarines						
Congressional Add: Cyber supply chain risk management						
Congressional Add Subtotals for Project: 9999						
Congressional Add Totals for all Projects						



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development
<div>Change Summary Explanation</div> <div>Technical: Not applicable.</div> <div>Schedule: Not applicable.</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / <i>Information Technology Development</i>				Project (Number/Name) 2901 / <i>Navy Enterprise IT</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2901: <i>Navy Enterprise IT</i>	157.387	38.065	54.215	37.099	-	37.099	48.239	46.776	29.603	30.218	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

Realigned the Civilian Human Capital Strategy Project funding to OMN 4A3M.

**A. Mission Description and Budget Item Justification**

Secretariat Offices

The Department of the Navy Chief Information Officer, Technology Division (DONCIO IT) provides Information Technology (IT), Information Assurance (IA), Information Management (IM), Document Management (DM), Records Management (RM), Knowledge Management (KM) and other related support services to the Secretary of the Navy (SECNAV), Chief of Naval Operations (OPNAV), the DON Secretariat, including political appointees, flag officers and senior executives. This support spans across over 24 organizations, covers nearly 6,000 individual customers, and countless worldwide end users. These services include complete life-cycle software support, software application development, implementation, and post development software support. DONCIO IT is heavily involved in the research and analysis of emerging trends and technologies for use throughout the Secretariat. DONCIO IT is also a valued partner and stakeholder in the development, review, and implementation of all DON and DoD IT related policies that affect the Secretariat members. Additionally, DONCIO IT astutely manages the telecommunication needs of the Secretariat and OPNAV staffs; to include providing state-of-the-art mobile devices, services and support, laptops to promote telework, and a host of other peripherals as needed when these executives travel abroad and around the country. DONCIO IT acts as a trusted agent for the review and approval of all IT related acquisitions across the Secretariat and provides expert guidance on the utilization of DON service contracts that support the purchase of software, hardware and other IT-related functions. DONCIO IT also manages and supports all Cyber Security functions for its Secretariat customers. Furthermore, DONCIO IT manages and supports all administrative requirements and functions of the NMCI/NGEN contract for all Secretariat customers. Database and application development support is required to test, evaluate, and modify current and new systems/capabilities for Secretariat customers.

Navy's Civilian Human Capital Strategy (HCS)

The HCS implements advance discoveries, initiates lines of efforts, conducts pilots, and completes business case analyses designed to improve the DON's ability to access, curate, and engage its workforce.

The HCS Task Force is responsible for designing, conducting, and evaluating limited-scope projects, introducing new or enhanced technologies to develop transformation recommendations for the larger DON enterprise. The HCS aims to streamline DON civilian human capital (HC) investments. This supports 18 Budget Submitting Offices (BSOs), which reported 352 HCS aligned programs and 152 technologies in FY21.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 2901 / <i>Navy Enterprise IT</i>
<p>The HCS is designed to identify opportunities for enterprise-wide HC reform by leading operating concepts and technologies like artificial intelligence and cloud computing. The centralized approach to innovation will minimize the upfront cost of identifying solutions, achieving cloud and cybersecurity compliance, and reduce the cost of investments through scale purchases. Assessments and evaluations contribute to business case analysis reports with recommendations for the Assistant Secretary of the Navy (Manpower &amp; Reserve Affairs) (ASN (M&amp;RA)), Under Secretary of the Navy (UNSECNAV), and/or the Secretary of the Navy (SECNAV) regarding the broader implementation of technologies across the DON.</p> <p>Funds are used for efforts, such as, technology configuration and automation technology solutions for HR transactions, artificial intelligence (AI), and the development predictive analytics and dashboards in the ADVANA/Jupiter platform. The Task Force evaluates the utility of such technologies in order to develop a data driven business case for wider implementation across the DON.</p> <p>ELECTRONIC PROCUREMENT SYSTEM (ePS)</p> <p>The electronic Procurement System (ePS) is the Department of the Navy's (DON) End-to-End (E2E) Contract Writing System (CWS). It will provide the Navy and Marine Corps contracting community with a full contract writing management capability and integrates with federally mandated systems, DON financial systems, and industry. The ePS will utilize Department of Defense (DoD) standards and support auditability. The ePS will address existing CWS challenges including outdated architecture, limited capabilities, scalability concerns, and existing obsolete legacy systems.</p> <p>Full deployment of the ePS ensures compliance of the DON's contracting abilities with the following legislative mandates: the writing and management of all contracts must now occur in congressionally approved computer systems (Section 862 of the National Defense Authorization Act (NDAA) of 2013); the central management and oversight of all DoD business (10 U.S. Code (U.S.C.) Section 2222); and all contracting actions must be fully auditable and traceable (Section 1003 of the NDAA 2010 &amp; Office of the Secretary of Defense (OSD) Financial Improvement and Audit Readiness (FIAR) Guidance).</p> <p>The ePS will use DoD data exchange capabilities (e.g., Procurement Data Standard (PDS) and Purchase Request Data Standard (PRDS)) in order to achieve standardized data interoperability with external systems. The Navy Enterprise Service Bus (NESB) serves as the hub to relay procurement data to various finance and other systems of record, such as Navy Enterprise Resource Planning (Navy ERP).</p> <p>The result of successful ePS implementation will be a contracting workforce that conducts standardized, seamless, end-to-end contract management in a secure computing environment, issuing timely contracts that comply with all DoD/Federal laws, regulations, and policies.</p> <p>NMCI ENTERPRISE SERVICE TOOLS(NEST)</p> <p>Next Generation Enterprise Network (NGEN) utilizes the NMCI Enterprise Service Tools (NEST) as an integrated set of tools that facilitate the full service lifecycle management (SLM) of customer service requests for IT services, including RAPT(Requirement to Award Process Tool), NET (NMCI Enterprise Tool), Task Order Management (TOM), and Enterprise Reporting. NEST is considered a Government Owned and Managed Ordering Defense Business System (DBS) that has a valid ATO.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 2901 / Navy Enterprise IT				
NEXT GENERATION ENTERPRISE NETWORK (NGEN)NETWORK ARCHITECHTURE DESIGN AND TESTING							
<p>NGEN is utilizing a rapid systems engineering approach, leveraging leading industry experts to design and execute a transformative architecture across the spectrum of services which drives towards the design of the Navy Digital Platform and digital business and service delivery. The Navy Digital Platform (NDP) is a modern digital platform that encompasses optimal cloud consumption, domain singularity, mobility, resilience, and enhanced security. The modernized platform is on parity with industry, which is ready to meet changing mission needs and achieve competitive Naval advantage through a constant state of Information Readiness. Navy's Digitization Journey is dependent upon the Navy's Enterprise Network. The modernized platform will meet today and future mission requirements. This multi-year effort and investment is needed to finalize and adjudicate a Target Enterprise Architecture (TEA), identify obsolescent technologies associated with Navy network platforms, and aid in the integration of users and services, implement enabling business processes and service management frameworks, and provide sustaining activity guidance for future investment areas across all classification levels and operating environments.</p> <p>NGEN will implement a new network architecture design, a technical enterprise architecture that integrates rationalized users and services, implements enabling business processes and service management frameworks and provides guidance for future investment areas across all classification levels and operating environments. This includes network modeling &amp; simulation, performance-based prototypes and applied research in future technologies affecting network architectures to advance the state of networks across all domains.</p>							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: SECNAV Projects IT System Modernization			0.664	0.594	0.370	0.000	0.370
Articles:			-	-	-	-	-
FY 2023 Plans:							
Continue role as PSO for the RMF Assessment and Authorization requirements of CFMS, which ensures CFMS maintains its ATO on the Navy network. Continue Database development and modification for legacy, current, and future systems. Continue providing Database Administrator development for Oracle and Microsoft Structured Query Language (MS SQL) based systems and applications. Provide Application Developer support to modify current systems and develop new systems/capabilities for Secretariat customers.							
FY 2024 Base Plans:							
Continue role as PSO for the RMF Assessment and Authorization requirements of CFMS, which ensures CFMS maintained its ATO on the Navy network. Continue Database development and modification for legacy, current, and future systems. Continue providing Database Administrator development for Oracle and Microsoft Structured Query Language (MS SQL) based systems and applications. Provide Application Developer support to modify current systems and develop new systems/capabilities for Secretariat customers.							
FY 2024 OCO Plans:							

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2901 / Navy Enterprise IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 decrease (\$0.224M) due to the cost of the database and application development on the existing contracting vehicle was lower than originally budgeted.						
Title: Civilian Human Capital Strategy  Articles:  FY 2023 Plans: - Continue to configure and implement human resources automation (AUTONOA) in support of DON wide implementation. - Deploy DON enterprise solution for Learning Management System. - Implementation of predictive analytics dashboard. - Implementation of Artificial Intelligence (AI)/Automation for recruitment contract management technology solution. - Explore technology for Off Boarding pilot recommendations. - Explore DON wide Talent Management solutions.  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: FY24 funding has been realigned to OMN line item 4A3M to support civilian Human Capital business process improvement and modernization efforts and associated solutions centered around technology license fees, configuration support, and infrastructure / integration.		1.685 -	1.403 -	0.000 -	0.000 -	0.000 -
Title: Electronic Procurement System (ePS)  Articles:  Description: Funding required for the Electronic Procurement System (ePS) to provide support for configuration, integration, testing, training, deployment and implementation of the system.  FY 2023 Plans:		20.517 -	19.959 -	17.142 -	0.000 -	17.142 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2901 / Navy Enterprise IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Based on the Program's market research in the previous fiscal year, it determined that small businesses had the capacity and ability to meet the ePC requirements, allowing for a small business set aside. ePS will continue preparations and planning for the ePC award and MVCR deployment. These efforts include the award of an Appian license contract in Q1 to support the current migration effort and future Agile sprints of Core Contracting Module (CCM) development. ePS is working to finalize the MCBOSS environment and complete migration of the CCM from the contract's environment.</p> <p>The MVCR deployment schedule depends on the award of the ePS Portfolio Coordinator (ePC) to begin integration, development and hosting activities required by Q3 FY23. The MVCR will include the CCM to provide simplified acquisitions functionality in addition to the required interfaces to Federal, DOD and DON business systems. The MVCR will include the interfaces required to get a contract through the Procurement to Pay (P2P) process.</p> <p>ePS will complete the required Authority-to-Operate (ATO) documentation and prepare the production environment in the MCBOSS cloud to accommodate the first wave of active users. Based on the current roadmap and capability assumptions, new users will continuously transition to ePS with each capability release starting with MVCR release 1.0 in Q1 of FY24, with an end-user count expected to be ~16,000 at full operational capability.</p> <p>ePS will continue market research and capability assessments by evaluating and prioritizing additional capabilities including Grants, Inventory Purchasing, Pre-Procurement Planning (PPP) and Solicitation module. Required capabilities will be added to the ePS prioritized requirements list and used to update the ePS roadmap for FY24 releases. Requirement priorities will be continuously updated in accordance with Agile and Scrum processes.</p> <p>Continuous analysis will drive capability assessments, interface evaluations, and portfolio development coordinated by the ePC. Additional interfaces will be established with DoD Stakeholder financial systems and DoN Systems in compliance with auditability readiness goals.</p> <p><b>FY 2024 Base Plans:</b> With the Navy's ePS Core Contracting Module (CCM) deployed in the MCBOSS cloud environment, the program office and ePC will utilize the ePS prioritized requirements list developed in FY23 to plan and schedule FY24 releases, including enhancements to the ePS CCM.</p>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 2901 / Navy Enterprise IT				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
The ePS roadmap will evolve according to capability assessments, the prioritized requirements list, and assessment results. FY24 planned releases include:  Q1: R1.0 is MVCR  Q2: R1.1 is planned to include Purchase Request (PR) and Acquisition Planning functionality.  Q3: R1.2 is planned to include Vendor Engagement and Contract Clause capabilities.  Q4: Release 1.3: Includes - ePS-SUP Inventory Purchasing module - ePS-CCM Enhancements - Solicitation Module enhancements - Additional User accession for NAVRESFOR, FFC, and PACFLT - PIEE Single Sign-On Capabilities  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$2.817M) due to MVCR development planned for completion by end of Q4 FY23 for Release 1.0.							
Title: NMCI Enterprise Service Tools (NEST)  Articles:  Description: Key objectives for Network Management - NMCI Enterprise Service Tools (NEST):  -The NMCI Enterprise Service Tools (NEST) is an integrated set of tools that facilitate the full service lifecycle management (SLM) of customer service requests for IT services, including RAPT(Requirement to Award Process Tool), NET (NMCI Enterprise Tool), Task Order Management (TOM), and Enterprise Reporting. NEST is considered a Government Owned and Managed Ordering, Defense Business System (DBS) that has a valid ATO.			2.151 -	5.457 -	5.298 -	0.000 -	5.298 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2901 / Navy Enterprise IT	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>-NEST is officially the single contract writing system for the DON's (i.e. all of Navy, including OCONUS, and USMC) NGEN-R contracts. NEST absorbed historically vendor-owned functionality and integrated the DoD's compliance standards, bringing NGEN-R into the DoD's Procure-to-Pay (P2P) space. Part of the requirement of adhering to P2P standards involved interfacing with 7+ systems. The team is continuously interfacing with new systems to comply with compliance mandates and Financial Acquisition and Regulation (FAR) clauses.</p> <p>-Serving as a NGEN ordering tool for Navy and USMC, NEST serves an extensive user base of more than 3,000 users and services 1.1M+ Navy and USMC service members globally. With this many users, NEST handles a large amount of financial transactions, with nearly \$1B of annual obligations processed within the tools.</p> <p>-The NEST team serves as a centralized link between enterprise and project level activities, while maintaining and operating all NEST functions, including O&amp;M support and strategic PMO work. Some of those activities include but are not limited to: executive guidance and brief support, end-to-end software development lifecycle implementation in accordance with CMMI (Capability Maturity Model Integration) level 5, prioritization of program missions/objectives, RMF/IA support/process definition, risk management, and FY planning &amp; road mapping.</p> <p><b>FY 2023 Plans:</b> NEST support will prioritize the implementation of Navy ePS interface to support NMCI ordering future state, and will finalize remaining requirements and end-state integration impacting the database post NGEN-R contract award and supported end-user training. NEST will also support the validation of amendments to the mandated DoD/DON procurement policies and upgrade the database accordingly, (e.g. additional system handshake requirements). NEST will commence analysis and implementation of COTS solutions for a contract management module to improve ability to ingest and manage base contract details that feed into NEST ordering. This would reduce manual administration while increasing the standardization and use cases for NEST. Also NEST system will commence upgrade to support Next Generation Enterprise Network (NGEN) IT Services requirements in a multi-vendor environment, and we are currently in Limited Deployment Authority to Proceed (ATP), specifically FY23 funds will support NEST compliance with the P2P requirements and handshake protocols leverage from the DPC (Defense Pricing and Contracting). In accordance with DoD policies and</p>					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2901 / Navy Enterprise IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
requirements with the end to end process from requirements to obligations through the contractual lifecycle contained in the overarching investment plan and BCRD.						
<b>FY 2024 Base Plans:</b> NEST support will complete the implementation of Navy ePS interface to support NMCI ordering future state. NEST will continue to support the validation of amendments to the mandated DoD/DON procurement policies and upgrade the database accordingly, (e.g. additional system handshake requirements). NEST will continue the analysis and implementation of COTS solutions for a contract management module to improve ability to ingest and manage base contract details that feed into NEST ordering. This would reduce manual administration while increasing the standardization and use cases for NEST. Also NEST system will continue upgrading to support NGEN IT Services requirements in a multi-vendor environment, and we are currently in Limited Deployment Authority to Proceed (ATP), specifically FY24 funds will be used for efforts to separate contract writing and other financial data aspects of the NEST tools and the logistical capabilities of our existing end-to-end systems, as well as collaborating with other DON ACQ system owners (CWS Tools) to identify acquisition capability alignments to satisfy the Capability Portfolio Management requirements in accordance with DoN acquisition portfolio strategy and roadmap.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$0.159M) is due to system maturation, operational stability and maintenance requirements vice code development and achieving expected goals of automation efficiencies.						
<b>Title:</b> Live, Virtual, and Constructive (LVC) Training Development		8.063	3.517	0.000	0.000	0.000
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> Funding will continue and complete efforts to develop and integrate capabilities to Naval Research, Development and Engineering (NRDE) lab to support Information Warfare (IW) into the Fleet Synthetic Training (FST) environment. This includes analyzing technical requirements and training requirements and utilizing the results of the analyses to add additional Information Warfare (IW) Fleet Synthetic Training (FST) capabilities in the Naval Research, Development and Engineering (NRDE) laboratory allowing the IW Enterprise to integrate into existing FST events with other warfare domains.						
<b>FY 2024 Base Plans:</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 2901 / Navy Enterprise IT				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
LVC RDTEN development requirements complete in FY23. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$3.517M) due to completion of LVC development requirements.						
<b>Title:</b> Warfighting Readiness Assessment - Force Level Integration Tool (FLINT)  <b>Articles:</b>		4.985 -	2.561 -	0.308 -	0.000 -	0.308 -
<b>FY 2023 Plans:</b> FLINT continues to identify, digitize, and incrementally evaluate data sources for incorporation into a larger data architecture plan to expand FLINT's capabilities.  FLINT uses agile software development methodologies and human-centered design processes to define a Minimum Viable Product (MVP) release in Q1FY23 and a Minimum Viable Capability Release (MVCR) by Q4FY23. This methodology will deliver software that will enhance POM capabilities for improved mission outcomes.  FY23 funding will continue agile development of the DevSecOps production environment and accomplish the following: - FLINT Model Evaluation and Selection - FLINT Automation and Machine Learning Enhancements - FLINT Data Architecture and Engineering - FLINT Minimum Viable Product (MVP) v1.1 - FLINT Minimum Viable Product (MVP) v1.2 - FLINT Minimal Value Capability Release (MVCR) - FLINT Knowledge Management System - FLINT POM Automation Suite Explore Functionality - FLINT POM Automation Suite Optimization Functionality - FLINT POM Automation Suite Rank Functionality  <b>FY 2024 Base Plans:</b> FLINT will continue to utilize an iterative, human-centered design process that maximizes use of frequent user feedback and engagement, automated software testing, and continuous and automated cybersecurity monitoring						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2901 / Navy Enterprise IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
and assessments to rapidly and iteratively design, develop, integrate, test, accredit, and deliver reliable software capabilities that meet priority user needs.						
FY24 funding will continue agile development of the DevSecOps production environment with the following enhancements: - FLINT POM Automation Suite Value Modeling Functionality - FLINT AI - Inference Engine - FLINT AI - Recommendation Engine - FLINT AI - Propose a Trade  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$2.253M) due to planned delivery of Minimum Viable Capability Release completion in FY23.						
Title: NGEN Network Architecture Design and Testing		0.000	20.724	13.981	0.000	13.981
Articles:		-	-	-	-	-
Description: Key objectives for NGEN Network Architecture Design and Testing:  - Transport, Compute and Storage Architecture and Design: Mission is to deliver a modern digital domain, on parity with industry, which is ready to meet changing mission needs and achieve competitive advantage through a constant state of information readiness. This investment is to align Naval Digital Platform design and implementation to the Navy's Technical Enterprise Architecture (TEA) that replaces obsolete technologies associated with NMCI and ONE-Net platforms, integrate rationalized users and services, implement enabling business processes and service management frameworks and provide guidance for future investment areas across all classification levels and operating environments.  -Core Application Services Architecture and Design: Refactor core applications and services to transition to future state as a component of the move to M365 Software as a Service (SaaS) environment.  -Integrated Navy Operations Command and Control System (INOCCS) Framework and Fleet Design for DODIN Operations: The INOCCS framework provides the foundation for an Operational Support System (OSS) that enables DoDIN Ops, Defensive Cyberspace Operations (DCO), cybersecurity, and informs Offensive						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2901 / Navy Enterprise IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Cyberspace Operations (OCO). Testing will include conducting technical comparisons of vendor products required to upgrade the network (AoA activities). Participating in technical exchange meetings related to OSS, service and resource management, data analytics and visualizations, DCO, defining cyberspace concept of operations, documenting an INOCCS reference architecture, information system security engineering in support of receiving an Authority to Operate, and documenting implementation and transition strategies for INOCCS.</p> <p><b>FY 2023 Plans:</b> NGEN will complete development and engineering efforts to stand up the NMCI lab of the future (a component of software automation increasing the response times to cybersecurity threats) and commence engineering development to implement a new network architecture design; a technical enterprise architecture that integrates rationalized users and services, implements enabling business processes and service management frameworks and provides guidance for future investment areas across all classification levels and operating environments. In FY23 NGEN will:</p> <p>-Conduct network modeling &amp; simulation, review performance-based prototypes, and institute applied research in future technologies affecting network architectures to advance the state of network across all domains.</p> <p>-Commence testing and evaluation for transport, compute and storage architecture and design in a lab or at a pilot site to establish baseline for the SMIT vendor. Additionally, will commence engineering support to develop a future state architecture in a lab setting that will leverage existing infrastructure on premise applications and services to ensure a seamless transition between managed on premise and managed-off premise user access to M365 capabilities.</p> <p>-Develop implementation and transition strategies for INOCCS by: *Commencing INOCCS testing to include technical comparisons of vendor products required to upgrade the network (AoA activities). *Coordinating technical exchange meetings related to OSS, service and resource management, data analytics and visualizations, and DCO. *Providing information system security engineering support to define cyberspace concept of operations that will document an INOCCS reference architecture to receive an Authority to Operate.</p> <p><b>FY 2024 Base Plans:</b></p>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2901 / Navy Enterprise IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>NGEN will continue engineering development to implement a new network architecture design; a technical enterprise architecture that integrates rationalized users and services, implements enabling business processes and service management frameworks and provides guidance for future investment areas across all classification levels and operating environments. In FY24 NGEN will continue to conduct:</p> <p>- Network modeling &amp; simulation, review performance-based prototypes, and institute applied research in future technologies affecting network architectures to advance the state of network across all domains.</p> <p>- Testing and evaluation for transport, compute and storage architecture and design in a lab or at a pilot site to establish baseline for the SMIT vendor. Additionally, continue engineering support to develop a future state architecture in a lab setting that will leverage existing infrastructure on premise applications and services to ensure a seamless transition between managed on premise and managed-off premise user access to M365 capabilities.</p> <p>- Engineering to rehome / migrate OCONUS (ONE-Net) sites to NDP for common services following the NDP pattern for small sites and transport services for both large and small sites.</p> <p>- Implementation and transition strategies for INOCCS by: * Conducting INOCCS testing to include technical comparisons of vendor products required to upgrade the network (AoA activities). * Coordinating technical exchange meetings related to OSS, service and resource management, data analytics and visualizations, and DCO. * Providing information system security engineering support to define cyberspace concept of operations that will document an INOCCS reference architecture to receive an Authority to Operate.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$6.743M) is due to planned completion of development and engineering efforts to stand up the NMCI Lab Of The Future and planned transfer from NGEN Network Architecture Design and Testing to NMCI Enterprise Service Tools (NEST) to support Defense Business System (DBS) certification.</p>						
Accomplishments/Planned Programs Subtotals		38.065	54.215	37.099	0.000	37.099

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2901 / Navy Enterprise IT			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 4A3M: Civilian Human Capital Strategy	3.900	7.990	8.834	-	8.834	9.459	10.271	10.506	0.000	Continuing	Continuing
• OPN LI 8106: Command Support Equipment - LVC	1.876	1.006	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.882
• OPN LI 8164: NGEN Investments	175.000	201.314	176.087	-	176.087	176.051	176.135	179.635	183.228	0.000	1,267.450
Remarks											
D. Acquisition Strategy											
DONCIO IT will award option year 2 of the cost-plus-fixed-fee contract in September 2022, via the Naval Supply Systems Command (NAVSUP).											
HCS: Programs will use existing government contracting vehicles and competitive processes, where appropriate, to configure extant private-sector solutions to meet requirements and buy licenses to access those products.											
ELECTRONIC PROCUREMENT SYSTEM (ePS)											
The ePS program will award a 5 year contract to a Portfolio Coordinator (ePC) who will provide the full range of systems engineering, software engineering, project management, integration, testing, deployment, and application sustainment services to deliver an ePS MVCR to its users and continue development of the ePS technical and functional capability roadmap for subsequent releases.											
The program plans to select solutions to meet the individual business process requirements using a Capability Analysis (CA) approach based on the Material Solutions Analysis (MSA) process. A continuously integrated team of functional owners, program managers and systems engineers execute MSAs for each required capability. The program office will collaborate with DASN(P) to perform a combination of market research, fit-gap analysis, and MSAs to identify and evaluate potential solutions using a "make, buy or reuse decision" process against the required capability, balanced with identified funding and technical constraints. The program office relies on MSAs both to inform the agile process for required component integration, enhancement, or development and to enable the portfolio approach.											

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2901 / Navy Enterprise IT

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development (Modernization)	C/FP	CACI : Chantilly, VA	4.555	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Contractor Engineering Support (DONCJIS) (Modernization)	SS/T&M	Interimage Inc. : Manassas, VA	1.272	0.000		0.000		0.000		-		0.000	0.000	1.272	-
Software Development (Modernization)	C/FP	Dell Marketing LP : Round Rock, TX	1.938	0.000		0.000		0.000		-		0.000	0.000	1.938	-
Software Development (CLEOC) (Modernization)	C/FP	NSA : Various	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
SYSTEM Modernization (Modernizaation)	WR	NIWC LANT : CHARLESTON, SC	4.026	0.000		0.000		0.000		-		0.000	0.000	4.026	-
CORB SYSTEM Modernization (Modernization)	WR	NIWC LANT : CHARLESTON, SC	2.002	0.000		0.000		0.000		-		0.000	0.000	2.002	-
Software Development (Modernization)	C/CPFF	Booz Allen Hamilton (BAH) : McLean, VA	0.755	0.464	Sep 2022	0.394	Sep 2023	0.246	Sep 2024	-		0.246	0.000	1.859	-
Software Development (Modernization)	C/CPFF	SAIC : Reston, VA	1.039	0.000		0.000		0.000		-		0.000	0.000	1.039	-
HCS Artificial Intelligence	TBD	TBD : TBD	0.000	0.746	Sep 2022	0.927	May 2023	0.000		-		0.000	0.000	1.673	-
HCS Digital HR	MIPR	Rock Island Arsenal : Rock Island, IL	0.000	0.800	Sep 2022	0.420	Apr 2023	0.000		-		0.000	0.000	1.220	-
HCS Predictive Analysis	TBD	TBD : TBD	0.000	0.100	Sep 2022	0.015	Mar 2023	0.000		-		0.000	0.000	0.115	-
HCS Learning Management System	TBD	TBD : TBD	0.000	0.039	Sep 2022	0.041	Feb 2023	0.000		-		0.000	0.000	0.080	-
ePS Data Transition Strategy	Various	NAVSUP BSC : Mechanicsburg, PA	1.702	0.000		0.000		0.000		-		0.000	0.000	1.702	-
ePS NESB Data Mapping	C/FP	BOOZ ALLEN : Tysons Corner, Va	7.150	0.000		0.000		0.000		-		0.000	0.000	7.150	-
NESB Configuration and Validation	C/FP	NAVWAR : San Diego, CA	7.371	0.000		0.000		0.000		-		0.000	0.000	7.371	-
Contract Writing System (ePS)	C/FP	CGI Federal : Fairfax, VA	38.771	0.000		0.000		0.000		-		0.000	0.000	38.771	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2901 / Navy Enterprise IT					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NERP Interface Analysis (ePS)	Various	NAVWAR : San Diego, CA	2.409	0.250	Dec 2021	0.000		0.000		-		0.000	0.000	2.659	-
Fleet Architecture Integration Tool (FAIT)	Various	FFRDC/Various : Arlington, VA	0.533	0.000		0.000		0.000		-		0.000	0.000	0.533	-
LVC Scenario Development and Training	C/FFP	NAVWAR NIWC PAC : San Diego, CA	0.000	1.399	Dec 2021	0.517	Dec 2022	0.000		-		0.000	0.000	1.916	-
LVC Warrior Integration	FFRDC	NAVAIR : Patuxent River, MD	0.000	2.364	Dec 2021	1.000	Dec 2022	0.000		-		0.000	0.000	3.364	-
LVC Virtual Wizard / Next Generation Threat Simulator (NGTS)	C/FFP	NAVAIR : Patuxent River, MD	0.000	2.800	Dec 2021	1.500	Dec 2022	0.000		-		0.000	0.000	4.300	-
Force Level Integration Tool (FLINT)	FFRDC	Georgia Tech Research Institute : Atlanta, GA	0.000	4.985	Mar 2022	2.561	Mar 2023	0.308	Mar 2024	-		0.308	Continuing	Continuing	Continuing
ePS Agile System Integrator Development (ePC)	Various	Various : Various	0.000	0.000		8.157	May 2023	8.628	May 2024	-		8.628	Continuing	Continuing	Continuing
CON-IT System Development and Updates (ePS)	Various	Various : Various	2.500	0.332	Jun 2022	0.000		0.000		-		0.000	0.000	2.832	-
Design Engineering Support (NGEN)	WR	NIWC PAC : San Diego	0.000	0.000		4.027	Mar 2023	3.526	Mar 2024	-		3.526	Continuing	Continuing	Continuing
Design Engineering Support (NGEN)	WR	NIWC LANT : Charleston, SC	0.000	0.000		2.283	Feb 2023	1.170	Feb 2024	-		1.170	Continuing	Continuing	Continuing
Design Engineering Support (NGEN)	C/CPFF	Booz Allen Hamilton : McLean, VA	0.000	0.000		5.124	Dec 2022	3.543	Dec 2023	-		3.543	Continuing	Continuing	Continuing
Design Engineering Support (NGEN)	C/CPFF	GTRI : Arlington, VA	0.000	0.000		5.160	Jan 2023	3.575	Jan 2024	-		3.575	Continuing	Continuing	Continuing
Design Engineering Support (NGEN)	C/CPFF	2Twelve : Reston, VA	0.000	0.000		4.130	Apr 2023	2.167	Apr 2024	-		2.167	Continuing	Continuing	Continuing
ePS Agile Development	Various	Various : Various	0.000	6.621	Sep 2022	0.000		0.000		-		0.000	0.000	6.621	-
ePS Prototype Migration	Various	Various : Various	0.000	1.034	Sep 2022	0.000		0.000		-		0.000	0.000	1.034	-



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2901 / Navy Enterprise IT					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			76.523	21.934		36.256		23.163		-		23.163	Continuing	Continuing	N/A
Remarks															
SECNAV Projects IT System Modernization funding supports database development and modification for legacy, current, and future systems. HCS FY 2024 funding has been realigned to OMN to support civilian Human Capital business process improvement and modernization efforts and associated solutions centered around technology license fees, configuration support, and infrastructure / integration. ePS Portfolio Coordinator contract award shifted to Q3 FY23, with testing and validation requirements rolled into larger cost category. ePS release dates shifted one quarter to the right in anticipation of contract award shift.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Documentation (ePS)	Various	Various : Various	3.734	1.000	Oct 2021	0.000		0.000		-		0.000	0.000	4.734	-
Cost Analysis (ePS)	C/CPFF	NAVWAR : San Diego, CA	1.603	0.250	Nov 2021	0.000		0.000		-		0.000	0.000	1.853	-
Systems Engineering (ePS)	Various	Various : Various	24.002	3.121	Mar 2022	1.500	Mar 2023	1.530	Mar 2024	-		1.530	Continuing	Continuing	Continuing
Logistics Analysis (ePS)	Various	NIWC LANT : Charleston, SC	5.494	0.750	Oct 2021	1.500	Oct 2022	0.418	Oct 2023	-		0.418	Continuing	Continuing	Continuing
Requirements Validation (ePS) - Small Business set aside	C/FFP	NAVWAR : San Diego, CA	1.500	0.000		0.000		0.000		-		0.000	0.000	1.500	-
Project Management/ Implementation (ePS)	Various	Enterprise Horizon : San Francisco, CA	3.536	0.000		0.000		0.000		-		0.000	0.000	3.536	-
ePS Engineering Services - Small Business set aside	Various	Bowhead : Alexandria, VA	3.457	0.000		0.000		0.000		-		0.000	0.000	3.457	-
ePS Testing and Validation/ Architecture Tool	Various	NSWC Dahlgren : Dahlgren, VA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
System Engineering Support (NEST)	C/CPFF	Deloitte : Rosslyn, VA	18.764	2.151	Jul 2022	5.457	Jul 2023	5.298	Jul 2024	-		5.298	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2901 / Navy Enterprise IT

## Support (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
(ePS) Project Management/ Implementation	C/CPFF	Chenega : Chesapeake, VA	1.904	0.000		0.000		0.000		-		0.000	0.000	1.904	-
MCBOSS Cloud Services (ePS)	C/CPFF	NIWC LANT : Charleston, SC	7.187	3.572	Jun 2022	1.532	Jun 2023	2.429	Jun 2024	-		2.429	Continuing	Continuing	Continuing
ePS engineering services	C/CPFF	Falconwood : Arlington, VA	2.909	0.000		0.000		0.000		-		0.000	0.000	2.909	-
ePS Appian Licenses	C/CPFF	Appian : Mclean, VA	0.000	0.000		1.513	Dec 2022	0.383	Dec 2023	-		0.383	Continuing	Continuing	Continuing
ePS Portfolio Licenses	Various	NAVWAR : San Diego, CA	0.000	0.334	Jul 2022	0.334	Jul 2023	0.350	Jul 2024	-		0.350	Continuing	Continuing	Continuing
<b>Subtotal</b>			74.190	11.178		11.836		10.408		-		10.408	Continuing	Continuing	N/A

## Test and Evaluation (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	Booz Allen Hamilton (BAH) : McLean, VA	0.400	0.200	Sep 2022	0.200	Sep 2023	0.124	Sep 2024	-		0.124	0.000	0.924	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/FFP	NIWC LANT : Charleston, SC	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-
Operational Test & Evaluation (OT&E)	C/FP	NAVWAR : San Diego, CA	0.815	0.000		0.000		0.000		-		0.000	0.000	0.815	-
Developmental Test & Evaluation (DT&E)	C/FP	OPTEVFOR : NORFOLK, VA	1.756	0.590	Aug 2022	1.000	Aug 2023	0.262	Aug 2024	-		0.262	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	JITC : Ft. Huachuca, AZ	0.848	0.424	Aug 2022	0.454	Aug 2023	0.400	Aug 2024	-		0.400	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	Falconwood : Arlington, VA	1.555	0.000		0.000		0.000		-		0.000	0.000	1.555	-
Developmental Test & Evaluation (DT&E)	Various	Various : Various	0.000	1.600	Nov 2021	1.734	Nov 2022	0.700	Nov 2023	-		0.700	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development						Project (Number/Name) 2901 / Navy Enterprise IT					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Subtotal			6.174	2.814		3.388		1.486		-		1.486	Continuing	Continuing	N/A		
Remarks																	
Assessment and Authorization (A&A) requirements.																	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
ePS Program Support	C/FFP	PEO MLB : Arlington, VA	0.500	0.639	Oct 2021	2.235	Oct 2022	2.042	Oct 2023	-		2.042	Continuing	Continuing	Continuing		
LVC Program Management	C/FFP	NIWC PAC : San Diego, CA	0.000	1.500	Dec 2021	0.500	Dec 2022	0.000		-		0.000	0.000	2.000	-		
Subtotal			0.500	2.139		2.735		2.042		-		2.042	Continuing	Continuing	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			157.387	38.065		54.215		37.099		-		37.099	Continuing	Continuing	N/A		
Remarks																	
HCS FY 2024 funding has been realigned to OMN to support civilian Human Capital business process improvement and modernization efforts and associated solutions centered around technology license fees, configuration support, and infrastructure / integration.																	

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

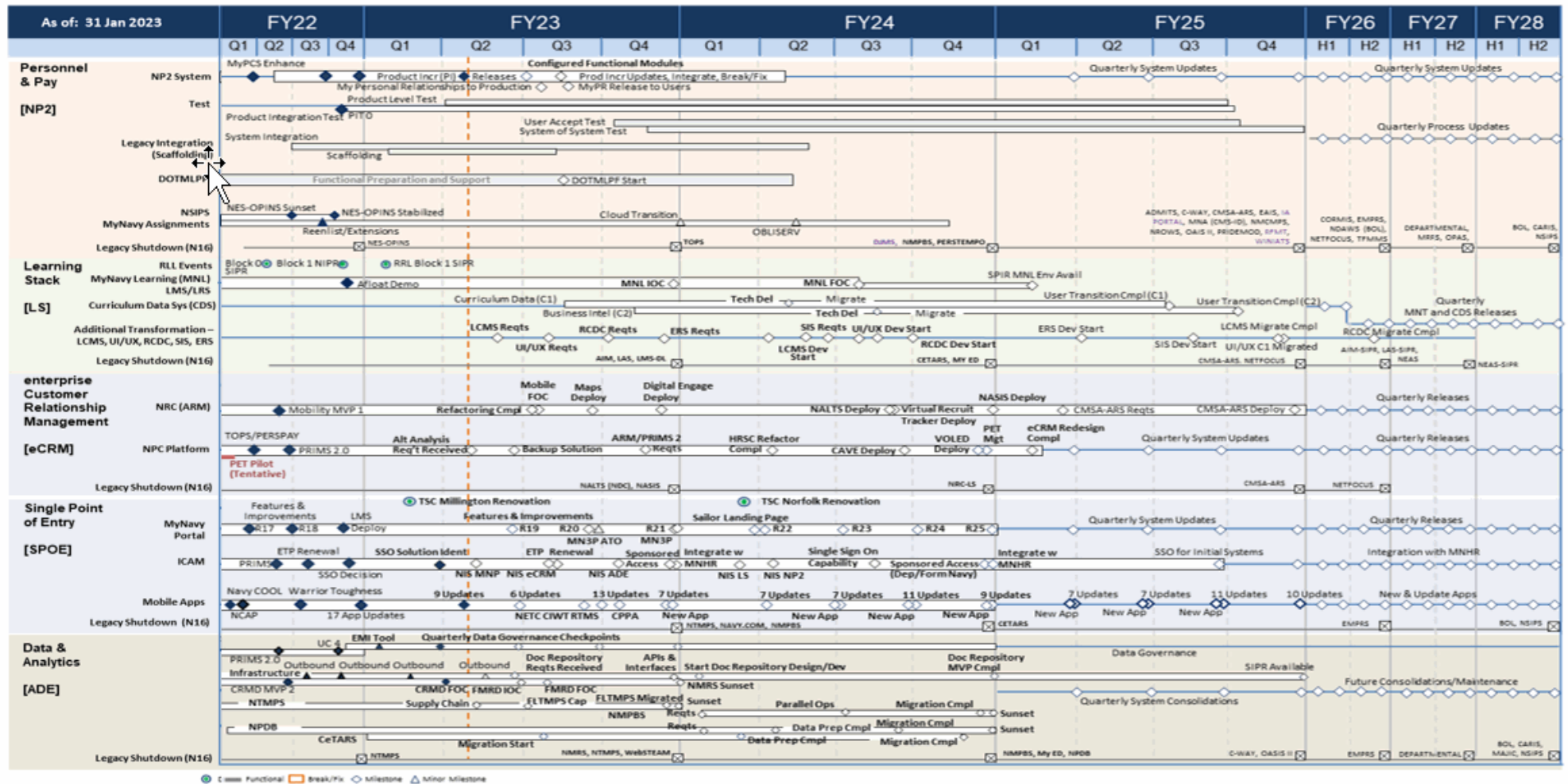
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R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Dev  
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Project (Number/Name)

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023																																																											
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)																																																	
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy													Date: March 2023																
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2901 / Navy Enterprise IT													
NEST	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
	NEST/ NGEN-R Upgrades																												
					Dashboard Decommissioning																								
					EUHW Release 2																								
					DASN P2P Support																								
					Ongoing Rollover Support																								
					Expand User Mgmt Capabilities																								
					ATO Package support																								
					DoDAAC Front-end Mgmt																								
					TOM Build Clause Logic Service for DFAR Clauses																								
					TOM Funds Check																								
					TOM Auto Funds Obs with NERP																								
				TOM Analyze Task Order Closeout																									
				TOM ePC Future Phase																									
				TOM Integrate Purchase Requests																									

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023
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Warfighting Readiness Assessment - Force Level Integration Tool (FLINT)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	FLINT Requirements	FLINT Gap Analysis																										
		FLINT Model E&A																										
		FLINT Enhancements																										
			FLINT ATO																									
			FLINT Data Digit																									
		FLINT Data A&E																										
			FLINT MVP 1.1		FLINT MVCR																							
			FLINT KM		FLINT Explore																							
		FLINT Optimize																										
	FLINT Rank					FLINT Value Model		FLINT AI Enhancements 1																				
							FLINT AI Enhancements 2																					
									FLINT AI Enhancements 3																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023																		
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2901 / Navy Enterprise IT										
Live Virtual and Constructive (LVC) Training Development	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
	PM and Coordination																											
	LVC Scenario Development																											
	I-Warrior Integration																											
	Virtual Wizard Release																											
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023													
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2901 / Navy Enterprise IT									
NGEN Architecture Design and Testing	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
					INOCCS Testing																								
					Transport, Compute, & Storage Pilot Testing																								
					Develop Future State Architecture																								

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

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R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

Project (Number/Name)

2901 / Navy Enterprise IT

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2901.L12</b>				
SECNAV Projects IT System Modernization: Technology Development	1	2022	4	2028
SECNAV Projects IT System Modernization: System Development & Demonstration	1	2022	4	2028
SECNAV Projects IT System Modernization: System Testing	1	2022	4	2028
SECNAV Projects IT System Modernization: Production & Deployment	1	2022	4	2028
Civilian Human Capital Strategy: Pre-implementation / Configuration Preparations	4	2022	4	2023
Civilian Human Capital Strategy: Implementation / Configuration	2	2023	4	2024
Civilian Human Capital Strategy: Testing	3	2023	4	2024
Civilian Human Capital Strategy: Deployment	4	2023	4	2024
<b>ePS</b>				
ePS / Market Research and Capability Delivery Assessment Activities	3	2022	4	2028
ePS / Agile Development and DevSec Ops	3	2022	4	2028
ePS / MVCR Prototyping	1	2022	3	2023
ePS / Portfolio Coordinator Contract Award (System Integrator)	3	2023	3	2023
ePS/ MCBOS Cloud Support Integration	3	2022	4	2028
ePS/ Continuous Authority to Operate	3	2022	4	2028
ePS/ MVCR Release 1.0	1	2024	1	2024
ePS/ MVCR Release 1.1	2	2024	2	2024
ePS/ MVCR Release 1.2	3	2024	3	2024
ePS/ MVCR Release 1.3	4	2024	4	2024
ePS/ MVCR Release 1.4	1	2025	1	2025
ePS/ Continuous Capability Backlog Prioritization	1	2024	4	2028

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2901 / Navy Enterprise IT

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ePS/ Future MVCR Releases	2	2025	4	2028
<b>NEST</b>				
NEST/ NGEN-R Upgrades	1	2022	4	2027
NEST Enterprise Report - Dashboard Decommissioning	1	2023	1	2023
NET - EUHW Release 2	1	2023	1	2023
NEST - DASN P2P Support	1	2023	2	2023
NEST - Ongoing Rollover Support	1	2023	4	2023
NEST Common Launch - Expand User Mgmt Capabilities	1	2023	2	2023
NEST - ATO Package support	1	2023	1	2023
NEST - DoDAAC Front-end Mgmt	1	2023	2	2023
NEST - TOM Build Clause Logic Service for DFAR Clauses	1	2023	3	2023
NEST - TOM Funds Check	1	2023	4	2023
NEST - TOM Auto Funds Obs with NERP	1	2023	3	2023
NEST - TOM Analyze Task Order Closeout	1	2023	4	2023
NEST - TOM ePC Future Phase	1	2023	1	2023
NEST - TOM Integrate Purchase Requests	1	2023	3	2023
<b>Warfighting Readiness Assessment - Force Level Integration Tool (FLINT)</b>				
FLINT Warfighting and Readiness analytical capability requirements validation	1	2022	1	2022
FLINT Data Environment Gap Analysis	2	2022	1	2023
FLINT Model Evaluation and Selection	2	2022	1	2023
FLINT Automation and Machine Learning Enhancements	2	2022	4	2023
FLINT Authority to Operate	4	2022	1	2023
FLINT Data Digitization	3	2022	4	2022
FLINT Data Architecture and Engine	2	2022	4	2023
FLINT Minimum Viable Product 1.1	4	2022	1	2023

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2901 / Navy Enterprise IT

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
FLINT Minimum Viable Product 1.2	1	2023	2	2023
FLINT Minimum Value Capability Release	2	2023	4	2023
FLINT Knowledge Management System	4	2022	2	2023
FLINT POM Automation Suite Explore Functionality	3	2023	4	2023
FLINT POM Automation Suite Optimization Functionality	1	2022	1	2023
FLINT POM Automation Suite Rank Functionality	1	2022	2	2023
FLINT POM Automation Suite Value Modeling Functionality	3	2023	1	2024
FLINT AI - Inference Engine	2	2024	4	2024
FLINT AI - Recommendation Engine	4	2023	4	2024
FLINT AI - Propose a Trade	3	2024	1	2025
<b>Live Virtual and Constructive (LVC) Training Development</b>				
LVC Program Management and Coordination	1	2022	4	2023
LVC Scenario Development	1	2022	4	2023
I-Warrior Integration	1	2022	4	2023
Virtual Wizard Release	1	2022	4	2023
<b>NGEN Architecture Design and Testing</b>				
INOCCS Testing	1	2023	2	2025
Transport, Compute, & Storage Pilot Testing	1	2023	3	2025
Develop Future State Architecture	1	2023	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2903: NAVAIR IT	70.606	4.607	11.413	13.979	-	13.979	14.365	14.167	14.194	14.528	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

Navy Cybersecurity - Cyber Warfare consists of many different aspects to include sabotage of our weapon systems, networks as well as enablement of missions. Nation and non-nation state actors are acquiring and employing more advanced cyber-attacks in order to exploit our networks and aviation systems challenging our technological edge. The threats and capabilities are real and range from exploiting capabilities, overloading weapons systems and logistics supply chains, to jamming signals or taking control of weapons systems. We must defend against adversarial cyber attacks while contributing to the exploitation of cyber warfare capabilities.

To meet these challenges and address the Chief of Naval Operations priorities and tasking, these R&D efforts are specifically focused on Naval Air Systems Command weapon or control systems and programs to ensure warfighting effectiveness as part of integrated / multi-platform kill chains. These research and development efforts will strengthen our cyber posture by developing research, development, test and evaluation capabilities and solutions to deter, detect, and mitigate cyber threats and safeguard classified naval aviation systems and platforms from "cradle to grave." These solutions will be integrated into the acquisition of weapons systems to enhance security, increase lethality, and improve resiliency in the expected operational environments. Our weapon or control systems are unique in the aforementioned environments and mission, but also in the presence of numerous non-traditional access points and trusted cyber relationships required for operational environments.

Further, this line sustains Naval Aviation's Red Team capability to research, identify and validate nation-state exploitable cyber susceptibilities and vulnerabilities in both deployed and next-generation warfighting platforms. Through it, these efforts improve Naval Aviation's mission survivability by developing and demonstrating operational TTPs within the cyber contested environment. The team partners with Naval Aviation programs to certify theorized cyber weaknesses and thus to prevent denial, degradation or disruption of safety, readiness, and mission. The Red Team's assessment products support CYBERSAFE certification of platforms and systems, and likewise supports PMAs and OPNAV with validated threat data prioritizing systems security engineering (SSE) investments. The team leverages national-level cyber warfare experts, all-source intelligence, and technology research to assess NAE operational technology, fleet exercises, support equipment, enterprise logistics systems, and supply chain.

Digital Thread (DT) - Funding provides a Naval Enterprise Solution to manage technical data required for weapons systems to promote workforce automation, resource optimization, and process standardization for program lifecycle management and to integrate acquisition with the warfighter. This will support future state for Logistics IT and enhancing Readiness in providing an enterprise solution with Naval Product Lifecycle Management (N-PLM). N-PLM is integral to Digital Log IT, supporting the Naval Maintenance, Repair, and Overhaul (N-MRO), Naval Supply Chain Management (N-SCM). Digital Thread (DT) is the capability providing digital process integration with complete, secure and authoritative data, coordinated as part of approved Navy LOG-IT. DT integrates the product life cycle to provide universal access to authoritative data and workflow automation, enabling configuration management of data, implementation of closed loop quality, and consolidation of engineering products including digital enablement of additive manufacturing. Connecting these processes using standardized digital tools and data accelerates the product development cycle and lowers costs for support and new capability integration. The Digital Thread capability includes development and demonstration of cyber security

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / <i>Information Technology Development</i>		Project (Number/Name) 2903 / <i>NAVAIR IT</i>	
<p>architectures for sustainment information systems, and development of a digital/additive manufacturing data architecture and repository. DT capability will benefit the speed to the Fleet with reduction of active legacy systems that stakeholders (PMAs, Squadrons, Depots, OEM, and Shipyards) are accessing for authoritative data.</p> <p>Digital Production Floor (DPF) - Initiative modernizes Navy Aviation Depots by removing paper from the Production floor and integrating key Quality elements to support a true digital North Star ensuring viability and alignment with broader Naval Logistics IT (LOG-IT) enterprise initiatives to realize a fully unified digital sustainment capability. This capability aligns and leverages ongoing Digital Thread /Aviation Product Lifecycle Management (AvPLM) efforts to transform our existing way of doing business and align us with commercial best practices for digitization of business processes. Current paper based processes have demonstrated inefficiencies and administrative delays in performance, degraded quality of product, and increased Depot level repair turnaround times.</p> <p>Radio Frequency Identification (RFID) - Digital tracking infrastructure enabling enhanced inventory and asset tracking capability with real-time or near real time visibility of fixed and rolling assets for accountability. Signed DD200s document lost tagged assets, therefore, each of these assets are large enough to be tagged. This capability will reduce the amount of DD200s by approximately 95%. By digitizing this capability, labor man-hours spent manually performing inventory tasking requirements will be reduced by ~33% overall. This initiative will provide the necessary foundational infrastructure and enable expansion to other use cases such as tool control, parts tracking, and HAZMAT tracking. Moving from manual, labor-intensive (~30 man-years) inventory method for fixed and rolling assets to an automatic digital method will provide real-time or near real time visibility into asset location throughout the facility, alerts when assets that are taken out of a geo-fenced location, and the ability to perform frequent inventory inspections; therefore, providing enhanced asset management. This will be accomplished by the implementation of compatible and integrated solutions via a blended technology approach (i.e. RFID, GPS, etc.) that is in direct support of the objective to realize a full Digital Production Floor at the Aviation Depots.</p> <p>Additive Manufacturing (AM) - Provides for the development of the Additive Manufacturing/3D Printing Process, Material Verification and Qualification to support deployment of Additive Manufacturing capability to Fleet Depot and Level II Maintenance level facilities, as well as provides for the Qualification, Validation, Testing and incorporation of private industry Additive Manufacturing initiatives across the Naval Aviation Enterprise to include NAVSUP and DLA. Additionally Additive Manufacturing funds Cooperative Research and Development Activities (CRADAs) support with Industry Partners and next generation AM studies. This effort will fund the development, test and approval of additional Polymer Material Data Curves, Polymer material certification for aviation applications and System Documentation/ Training updates of additional high strength Polymers for use on deployed Additive Manufacturing systems. This will support deployed systems in producing Critical parts for Aircraft, Support Equipment and Aircraft Launch and Recovery Equipment, while enhancing Naval Aviation Readiness and Lethality allowing point of need part manufacturing to mitigate supply support shortfall, dramatically decreasing Mean Logistics Delay Times (MLDT) and increasing aircraft availability.</p>					
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>				<b>FY 2022</b>	<b>FY 2023</b>
				<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>
				<b>FY 2024 Total</b>	
<b>Title:</b> Navy Cybersecurity				1.749	6.098
<b>Articles:</b>				-	-
<b>FY 2023 Plans:</b>				-	-
- Develop, maintain, and execute the Naval Aviation Red Team. Host the laboratories and foundational capabilities necessary to conduct adversarial cyber threat emulation and other hands-on cyber warfare assessments of NAE operational technology, support equipment, processes, and information technology.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2903 / NAVAIR IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue augmentation and maturation of laboratory capabilities, environments and customized toolsets across multiple NAVAIR sites and facilities to conduct cyber security Research, Development, Test and Evaluation (RDT&amp;E) for NAVAIR programs.</p> <p>- Continue development aviation weapon systems customized tools, methodologies, and procedures identified from Cyber Risk Assessments, Cyber Table Tops, test and evaluation capability gaps and emergent threats. Increased program and Fleet support capability for penetration testing, hands on adversarial assessments, and engineering investigations.</p> <p>- Continue support of emergent Fleet Cyber Command/10th Fleet (FLTCYBERCOM/C10F) Operations Orders (OPORD) and Tasking Orders (TASKORD) requiring urgent development of cyber incidence planning and response capability and customized weapon and control systems solutions for identified Fleet risks.</p> <p>- Continue to increase capability investment directly supports NAE Cyber Red Team capabilities, emergent intelligence, performance of FLTCYBERCOM/C10F OPORDs/TASKORDs, Blackbeard After Action Report (AAR), Cyber Risk Assessments of Aviation Weapons Systems and Platforms, Cyber Planning &amp; Response Center, Aviation Resiliency, incident response investigations, Cyber Supply Chain risk management (SCRM) and hardening, and OSD Defense Science Board Task Force for Cyber Deterrence recommendations. Without this capability investment, the US Navy will continue to be especially vulnerable to attacks on its nontraditional systems (e.g., Aircraft, Weapons, Support Equipment).</p> <p><b>FY 2024 Base Plans:</b></p> <p>- Continue to develop, maintain, and execute the Naval Aviation Red Team. Continue to host the laboratories and foundational capabilities necessary to conduct adversarial cyber threat emulation and other hands-on cyber warfare assessments of NAE operational technology, support equipment, processes, and information technology.</p> <p>- Continue augmentation and maturation of laboratory capabilities, environments and customized toolsets across multiple NAVAIR sites and facilities to conduct cyber security Research, Development, Test and Evaluation (RDT&amp;E) for NAVAIR programs.</p> <p>- Continue development aviation weapon systems customized tools, methodologies, and procedures identified from Cyber Risk Assessments, Cyber Table Tops, test and evaluation capability gaps and emergent threats. Increased program and Fleet support capability for penetration testing, hands on adversarial assessments, and engineering investigations.</p> <p>- Continue support of emergent Fleet Cyber Command/10th Fleet (FLTCYBERCOM/C10F) Operations Orders (OPORD) and Tasking Orders (TASKORD) requiring urgent development of cyber incidence planning and response capability and customized weapon and control systems solutions for identified Fleet risks.</p>						

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2903 / NAVAIR IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue to increase capability investment directly supports NAE Cyber Red Team capabilities, emergent intelligence, performance of FLTCYBERCOM/C10F OPOORDs/TASKORDs, Blackbeard After Action Report (AAR), Cyber Risk Assessments of Aviation Weapons Systems and Platforms, Cyber Planning &amp; Response Center, Aviation Resiliency, incident response investigations, Cyber Supply Chain risk management (SCRM) and hardening, and OSD Defense Science Board Task Force for Cyber Deterrence recommendations. Without this capability investment, the US Navy will continue to be especially vulnerable to attacks on its nontraditional systems (e.g., Aircraft, Weapons, Support Equipment).</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$0.641M) limits support in development aviation weapon systems customized tools, methodologies, and procedures.</p>						
<p><b>Title:</b> Digital Thread</p> <p style="text-align: right;"><b>Articles:</b></p> <p><b>FY 2023 Plans:</b> Expand DT-IDRN capabilities to ramp up product development to incrementally deliver additive manufacturing capabilities to increase the breadth and complexity of parts that can be manufactured by the Fleet. Implement additional processes and workflows to including digital engineering data, integrated quality management, and digital manufacturing connectivity. Continue development and implementation of digital workflows to accelerate processes and integration of IDRN requirements into AvPLM to manage digital technical data for key platforms. Continue to create additional networked capability to extend information across digital platforms. Continue to expand and extend capability for DT to allow for Additive Manufacturing (AM) Integration for cybersecure capacity expansion to meet fleet requirements.</p> <p><b>FY 2024 Base Plans:</b> Continue expanding DT-IDRN capabilities to support product development to expand additive manufacturing capabilities to increase the breadth and complexity of parts that can be manufactured by the Fleet. Implement additional processes and workflows to include digital engineering data, integrated quality management, and digital manufacturing connectivity. Continue development and implementation of digital workflows to accelerate processes and integration of IDRN requirements into AvPLM to manage digital technical data for key platforms. Continue to create additional networked capability to extend information across digital platforms. Continue</p>		2.858 -	4.015 -	3.067 -	0.000 -	3.067 -



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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
to expand and extend capability for DT to allow for Additive Manufacturing (AM) Integration for cybersecurity capacity expansion to meet fleet requirements.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: FY24 decrease (\$0.948M) is due to a descope of contract and labor.						
Title: Digital Production Floor  Articles:  FY 2023 Plans: Begin development, configuration, and implementation of digital workflows to accelerate processes and manage digital data. Initiate effort for digital work package traceability for shop floor efficiency to advance and transform from paper to a unified digital sustainment capability. Develop acquisition strategy that facilitates the creation and implementation of an infrastructure that will provide secure network capabilities to extend and synchronize information across digital platforms while transforming the existing way of doing business from paper to align with digital business best practices.  FY 2024 Base Plans: Continue development, configuration, and implementation of digital workflows to standardize and accelerate processes and manage digital data. Initiate effort for digital work package traceability for shop floor efficiency to advance and transform from paper to a unified digital sustainment capability. Develop acquisition strategy that facilitates the creation and implementation of an infrastructure that will provide secure network capabilities to extend and synchronize information across digital platforms while transforming the existing way of doing business from paper to align with digital business best practices.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase (\$0.405M) supports a planned transition from contract award to actual development.		0.000 -	1.300 -	1.705 -	0.000 -	1.705 -
Title: Additive Manufacturing (AM)  Articles:  FY 2023 Plans:		0.000 -	0.000 -	3.300 -	0.000 -	3.300 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
<b>FY 2024 Base Plans:</b> Develop and implement expanded material capability for deployed Tier 1 (desktop 3D polymer printers) and Tier 2 (industrial 3D polymer printers) printers. Evaluate software for component selection, component design, and modeling and simulation. Initiate printer networking across relevant operational networks.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$3.300M) supports the Additive Manufacturing (AM) capability to organically produce AM parts on site, on-demand, directly improving operational Readiness.						
<b>Title:</b> Radio Freq ID (RFID) Technology		0.000	0.000	0.450	0.000	0.450
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> N/A						
<b>FY 2024 Base Plans:</b> Begin implementation of a digital tracking solution for asset management targeting an aircraft hangar and a major back-shop/component building at each brick and mortar Site (FRC-E, FRC-SE, FRC-SW). This solution will consist of multiple compatible and integrated technologies (i.e. RFID, GPS, IoT, etc.) that will lay the foundation for enhanced inventory and asset tracking capability as well as expanded use cases (i.e. tool management, parts tracking, HAZMAT tracking etc.). Additionally, funding will be utilized for the development (if not already configurable) for a middleware software that can integrate with Government system such as Maximo. Lastly, funds to also be utilized for any required ruggedize protective covering for hardware.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$0.450M) supports the implementation of a digital tracking solution for asset management targeting an aircraft hangar and a major back-shop/component building at each brick and mortar Site (FRC-E, FRC-SE, FRC-SW).						
Accomplishments/Planned Programs Subtotals		4.607	11.413	13.979	0.000	13.979

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## C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4268/DPF: Digital Production Floor	0.000	3.274	3.850	-	3.850	1.357	1.035	0.936	0.959	0.000	11.411

## Remarks

## D. Acquisition Strategy

Navy Cybersecurity - The Navy Cybersecurity strategy is executed in the following three concurrent steps:

### 1. Cyber Red Teaming of Naval Aviation

Cyber Red Teaming of naval aviation systems will be completed across the acquisition lifecycle to include systems deployed in their operational environments. Focus areas will include but are not limited to:

- 1) Onboard/supporting embedded systems
- 2) Onboard/supporting RF apertures
- 3) RDT&E environments
- 4) Software support activities
- 5) Supply chain
- 6) Support and maintenance equipment
- 7) Enterprise network security
- 8) Logistics systems
- 9) Physical security

### 2. Cyber Incident Response, Defensive Cyber Engineering

Achieve capability to respond to cyber incidents and detect adversary intrusions. Activities will include:

- 1) Management of NAVAIRSYSCOM Cyber Planning and Response Center (CPRC)
- 2) Development and deployment of adversary threat hunting tools and TTPs that support NAE operational technology
- 3) Advanced digital forensics capabilities
- 4) Microelectronics Reverse Engineering
- 5) Enabling the conduct of Proactive-Defensive Cyber Operations (PDCO) missions for NAE operational technology
- 6) Development of general cyber warfare defensive technologies focused on protecting NAE warfighting systems

### 3. Key Cyber Laboratories and CSRA Performance

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<p>Maintain the baseline capabilities to support NAE platforms in achieving cyber survivability, as well as to support the continued development and maturation of Cyber Survivability Risk Assessments. This will include some focus on maintaining capabilities in NAVAIR facilities such as:</p> <ol style="list-style-type: none"> <li>1) Cyber Warfare Innovation Lab (CWIL)</li> <li>2) Aviation Cyber Forensics Laboratory (ACFL)</li> <li>3) Cyber Planning &amp; Response Center (CPRC)</li> <li>4) Naval Aviation Red Team facilities</li> </ol> <p>Digital Thread - Digital Thread/Cyber Security Architecture and Strategy</p> <p>The management approach includes the Logistics IT Portfolio Management Office residing in NAVAIR as part of Program Executive Office for Aviation Common Systems and Commercial Services.</p> <ol style="list-style-type: none"> <li>1) Develop cyber security architecture standards for Naval Aviation Environment (NAE) Digital Thread.</li> <li>2) Develop IT and data architecture for NAE Digital Thread to accelerate maintenance and sustainment and support digital manufacturing capabilities including design, manufacturing, and materials data.</li> <li>3) Implement cyber security architecture for NAE Digital Thread including COMFRC, Logistics IT, PMAs.</li> <li>4) Implement Phase 1 of NAE Digital Thread Integrated Digital Resource Network (DT-IDRN) at D-level locations.</li> <li>5) Stand up developmental digital manufacturing data repository that includes digital design and digital material database.</li> <li>6) Integrate digital manufacturing data repository into DT-IDRN.</li> </ol> <p>Digital Production Floor Strategy</p> <p>The management approach includes the Logistics IT Portfolio Management Office residing in NAVAIR as part of Program Executive Office for Aviation Common Systems and Commercial Services.</p> <ol style="list-style-type: none"> <li>1) Develop IT and data architecture for DPF to digitize, optimize and standardize Depot maintenance processes</li> <li>2) Develop and execute acquisition strategy for required infrastructure and software development/configuration</li> <li>3) Develop and execute Hardware Acquisition strategy for end user aligned to LD implementation targets</li> <li>4) Implement IT and data architecture for DPF</li> <li>5) Complete accreditation, interface development, test plan and prototype of DPF</li> <li>6) Implement Phase 1 (Limited Deployments) of DPF at primary D-level locations</li> <li>7) Implement Phase I (Limited Deployments) of DPF at all D-level locations</li> <li>8) Continue Limited Deployments, in a Continuous Improvement Capability Delivery (CICD) methodology</li> </ol> <p>Hardware and software development services will be awarded using competitively awarded contracts with appropriate out-year options. Service contracts will contain a matrix of tasks and required levels of performance. Follow on contracts will also follow the same competitive system. The Services provided under the contract support</p>		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 2903 / <i>NAVAIR IT</i>
<p>acquisitions will not encompass tasks inherently Governmental in nature and the Statements of Work will include a matrix that establishes the minimum acceptable performance standards.</p> <p>Radio Frequency Identification (RFID) Strategy</p> <p>The management approach includes the Logistics IT Portfolio Management Office residing in NAVAIR as part of Program Executive Office for Aviation Common Systems and Commercial Services.</p> <p>Radio Frequency Identification (RFID) - Development services will be awarded using a competitively awarded contract that will contain a matrix of tasks and required levels of performance. Follow on contracts will also follow the same competitive system. The Services provided under the contract support acquisitions will not encompass tasks inherently Governmental in nature and the Statements of Work will include a matrix that establishes the minimum acceptable performance standards.</p> <p>Additive Manufacturing (AM) Strategy</p> <p>The management approach includes the systems engineering oversight of capability and integration efforts.</p> <ol style="list-style-type: none"> <li>Develop data and specifications for capability expansion <ul style="list-style-type: none"> <li>-Partner with industry through Cooperative Research and Development Activities (CRADAs) for standard and component development</li> <li>-Partner with Military institutes</li> <li>-Leverage public private institutes</li> <li>-Leverage Naval Air Warfare Center (NAWC) laboratory personnel and facilities</li> <li>- Contracted testing Tier 1 (desktop 3D polymer printer) ESD material evaluation</li> <li>- Contracted material testing Tier 2 (industrial 3D polymer printers)</li> <li>- Contracted automated Technical Data Package development leveraging Naval Air Warfare Center Aircraft Division (NAWCAD) internal resources</li> <li>-Leverage cross military working groups for candidate evaluation software</li> </ul> </li> <li>Develop and implement network connectivity <ul style="list-style-type: none"> <li>-Leverage NAWCAD Lakehurst personnel and expertise</li> <li>-Test &amp; Evaluation of connectivity in phases on appropriate networks</li> <li>-Development of Additive Manufacturing metrics dashboard</li> <li>-Test &amp; Evaluation of Tier 1 and Tier 2 connectivity on Research, Development, Test and Evaluation (RDT&amp;E) network</li> </ul> </li> <li>Develop requirements and evaluate systems for technical refresh <ul style="list-style-type: none"> <li>-Stakeholder input across Naval Aviation Enterprise (NAE)</li> <li>-Analysis of Alternatives (AoA) conducted to determine state of the art</li> <li>-Acquire and Evaluate Tier 1 system</li> <li>-Evaluate system Tier 2</li> </ul> </li> </ol>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 2903 / NAVAIR IT
-Acquire and Evaluate design software Tier 1 and Tier 2		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2903 / NAVAIR IT					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Solutions for Cyber Warfare Capabilities for Navy Cybersecurity	Various	Various : Various	16.968	0.244	Oct 2021	1.959	Oct 2022	1.909	Oct 2023	-		1.909	Continuing	Continuing	Continuing
Solutions for Digital Thread	Various	Various : Various	22.886	2.258	Oct 2021	3.077	Oct 2022	2.258	Oct 2023	-		2.258	Continuing	Continuing	Continuing
Solutions for Digital Production Floor	TBD	TBD : TBD	0.000	0.000		0.654	Apr 2023	0.850	Jan 2024	-		0.850	Continuing	Continuing	Continuing
Solutions for Radio Frequency Identification (RFID)	Various	Various : Various	0.000	0.000		0.000		0.405	Mar 2024	-		0.405	Continuing	Continuing	Continuing
Solutions for Additive Manufacturing Network Connectivity Development	WR	NAWCAD : Lakehurst, NJ	0.000	0.000		0.000		0.701	Oct 2023	-		0.701	Continuing	Continuing	Continuing
Solutions for Additive Manufacturing Capability Expansion	Various	TBD : TBD	0.000	0.000		0.000		0.450	Jun 2024	-		0.450	Continuing	Continuing	Continuing
Subtotal			39.854	2.502		5.690		6.573		-		6.573	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Prod Def no longer funded in the FYDP	Various	Various : Various	4.379	0.000		0.000		0.000		-		0.000	0.000	4.379	-
Subtotal			4.379	0.000		0.000		0.000		-		0.000	0.000	4.379	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD/AM : Patuxent River, MD	0.000	0.000		0.000		0.750	Oct 2023	-		0.750	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development					Project (Number/Name) 2903 / NAVAIR IT				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	NAWCAD/AM : Patuxent River, MD	0.000	0.000		0.000		0.474	Oct 2023	-		0.474	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	Various	TBD/AM : TBD	0.000	0.000		0.000		0.575	Jun 2024	-		0.575	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		1.799		-		1.799	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Prod Def no longer funded in the FYDP	WR	NAWCAD : Patuxent River, MD	1.756	0.000		0.000		0.000		-		0.000	0.000	1.756	-
Systems Engineering Support for Navy Cybersecurity	WR	NAWCAD : Patuxent River, MD	15.280	1.455	Oct 2021	4.089	Oct 2022	3.498	Oct 2023	-		3.498	Continuing	Continuing	Continuing
Systems Engineering Support for Digital Thread	WR	NAWCAD : Patuxent River, MD	6.912	0.600	Oct 2021	0.938	Oct 2022	0.809	Oct 2023	-		0.809	Continuing	Continuing	Continuing
Systems Engineering Support for Navy Cybersecurity	WR	NAWCWD : China Lake, CA	2.425	0.050	Oct 2021	0.050	Oct 2022	0.050	Oct 2023	-		0.050	Continuing	Continuing	Continuing
Systems Engineering Support for Digital Production Floor	TBD	TBD : TBD	0.000	0.000		0.646	Oct 2022	0.855	Oct 2023	-		0.855	Continuing	Continuing	Continuing
Systems Engineering Support for Radio Frequency Identification (RFID)	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.045	Oct 2023	-		0.045	0.000	0.045	-
Systems Engineering Support for Additive Manufacturing	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.350	Oct 2023	-		0.350	Continuing	Continuing	Continuing
Subtotal			26.373	2.105		5.723		5.607		-		5.607	Continuing	Continuing	N/A



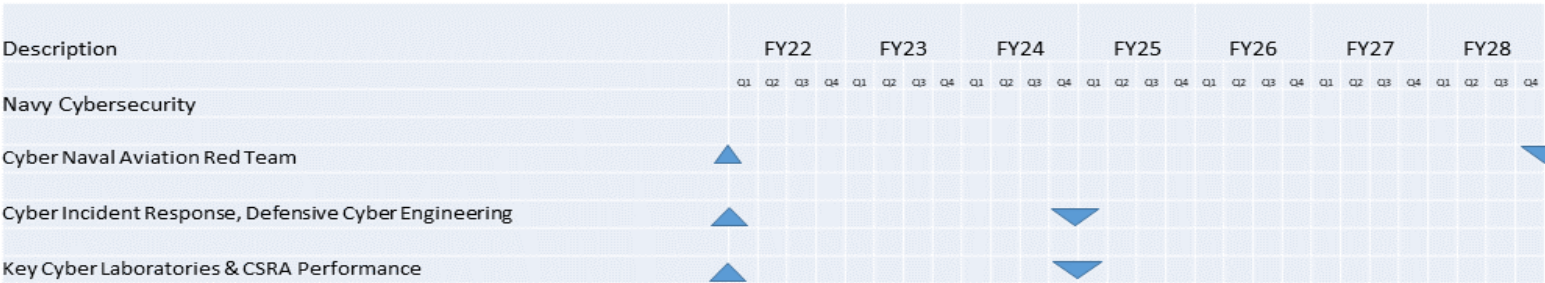
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development					Project (Number/Name) 2903 / NAVAIR IT				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		70.606	4.607		11.413		13.979		-		13.979	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 2903 / NAVAIR IT



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy												Date: March 2023																		
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2903 / NAVAIR IT														
	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028					
Digital Thread	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Development																														
	Phase 4a		Phase 4b		Phase 5a		Phase 5b		Phase 6a		Phase 6b		Phase 7a		Phase 7b		Phase 8a		Phase 8b		Phase 9a		Phase 9b		Phase 10a		Phase 10b			
Deployment																														
Deployment																														
	Phase 4a		Phase 4b		Phase 5a		Phase 5b		Phase 6a		Phase 6b		Phase 7a		Phase 7b		Phase 8a		Phase 8b		Phase 9a		Phase 9b		Phase 10a		Phase 10b			
IOC	▲	▲	▲		▲	▲			▲	▲			▲	▲			▲	▲			▲	▲			▲	▲				
	Phase 3		Phase 4a		Phase 4b		Phase 5a		Phase 5b		Phase 6a		Phase 6b		Phase 7a		Phase 7b		Phase 8a		Phase 8b		Phase 9a		Phase 9b		Phase 10a		Phase 10b	
Deliveries																														
	▼		▼		▼		▼		▼		▼		▼		▼		▼		▼		▼		▼		▼		▼			
	Phase 4a		Phase 4b		Phase 5a		Phase 5b		Phase 6a		Phase 6b		Phase 7a		Phase 7b		Phase 8a		Phase 8b		Phase 9a		Phase 9b		Phase 10a		Phase 10b			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023						
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2903 / NAVAIR IT				
	FY2024				FY2025				FY2026				FY2027				FY2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
RFID																				
Development																				
Development																				
Deployment																				
Deployment																				
Deliveries																				
Deliveries/Field Implementation																				

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

Date: March 2023

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R-1 Program Element (Number/Name)	Program Element Description	Program Element Status	Program Element Comments

PE 0605013N / Information Technology Development

Project (Number/Name)	Start Date	End Date	Duration (Days)	Project Manager	Status	Progress (%)	Budget (USD)	Actual Cost (USD)	Variance (USD)	Risk Level	Notes
101	2023-01-01	2023-03-31	90	John Doe	Completed	100	150000	148000	2000	Low	Project completed ahead of schedule.
102	2023-04-01	2023-06-30	90	Jane Smith	In Progress	75	200000	195000	5000	Medium	Minor delays in procurement.
103	2023-07-01	2023-09-30	90	Mike Johnson	On Hold	20	180000	180000	0	High	Waiting for client approval.
104	2023-10-01	2023-12-31	90	Sarah Lee	Planned	0	120000	120000	0	Low	Initial planning phase.
105	2024-01-01	2024-03-31	90	David Kim	Planned	0	90000	90000	0	Medium	Resource allocation in progress.

2903 / NAVAIR IT

	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028
Digital Production Floor	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4
Contract Award  Contract Prep Contract Award							
Development			Phase 1 LD1 Phase 1 LD2	Phase 2 LD1 Phase 2 LD2	Phase 3 LD1 Phase 3 LD2	Phase 4 LD1 Phase 4 LD2	Phase 5 LD1 Phase 5 LD2
Deployment			Phase 1 LD1 Phase 1 LD2	Phase 2 LD1 Phase 2 LD2	Phase 3 LD1 Phase 3 LD2	Phase 4 LD1 Phase 4 LD2	Phase 5 LD1 Phase 5 LD2
Deliveries			Phase 1LD1 Phase 1LD2	Phase 2LD1 Phase 2LD2	Phase 3LD1 Phase 3LD2	Phase 4LD1 Phase 4LD2	Phase 5LD1 Phase 5LD2

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023						
Appropriation/Budget Activity 1319 / 5								R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2903 / NAVAIR IT				
	FY2024				FY2025				FY2026				FY2027				FY2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Additive Manufacturing																				
Capability Expansion Development																				
System Networking Technical and Operational Evaluation																				
System Evaluation Deployment																				

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 2903 / <i>NAVAIR IT</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Navy Cybersecurity</i></b>				
Advanced Cyber Labs: Support Organic/BAA industry solutions: Key Cyber Laboratories & CSRA Performance	1	2022	4	2024
Advanced Cyber Labs: Support Organic/BAA industry solutions: Cyber Incident Response, Defensive Cyber Engineering	1	2022	4	2024
Advanced Cyber Labs: Support Organic/BAA industry solutions: Cyber Naval Aviation Red Team	1	2022	4	2028
<b><i>Digital Thread</i></b>				
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 4a)	1	2022	2	2022
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 4b)	3	2022	4	2022
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 5a)	1	2023	2	2023
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 5b)	3	2023	4	2023
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 6a)	1	2024	2	2024
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 6b)	3	2024	4	2024
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 7a)	1	2025	2	2025
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 7b)	3	2025	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2903 / NAVAIR IT	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 8a)		1	2026	2	2026
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 8b)		3	2026	4	2026
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 9a)		1	2027	2	2027
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 9b)		3	2027	4	2027
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 10a)		1	2028	2	2028
Development: Digital Thread Development: Digital Thread Capability Development Updates (Phase 10b)		3	2028	4	2028
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 4a)		1	2022	2	2022
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 4b)		3	2022	4	2022
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 5a)		1	2023	2	2023
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 5b)		3	2023	4	2023
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 6a)		1	2024	2	2024
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 6b)		3	2024	4	2024
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 7a)		1	2025	2	2025
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 7b)		3	2025	4	2025



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2903 / NAVAIR IT	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 8a)		1	2026	2	2026
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 8b)		3	2026	4	2026
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 9a)		1	2027	2	2027
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 9b)		3	2027	4	2027
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 10a)		1	2028	2	2028
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 10b)		3	2028	4	2028
Deployment: Digital Thread Deployment: Digital Thread Phase 3- IOC FMC		1	2022	1	2022
Deployment: Digital Thread Deployment: Digital Thread Phase 4a IOC		2	2022	2	2022
Deployment: Digital Thread Deployment: Digital Thread Phase 4b IOC		4	2022	4	2022
Deployment: Digital Thread Deployment: Digital Thread Phase 5a IOC		2	2023	2	2023
Deployment: Digital Thread Deployment: Digital Thread Phase 5b IOC		4	2023	4	2023
Deployment: Digital Thread Deployment: Digital Thread Phase 6a IOC		2	2024	2	2024
Deployment: Digital Thread Deployment: Digital Thread Phase 6b IOC		4	2024	4	2024
Deployment: Digital Thread Deployment: Digital Thread Phase 7a IOC		2	2025	2	2025
Deployment: Digital Thread Deployment: Digital Thread Phase 7b IOC		4	2025	4	2025
Deployment: Digital Thread Deployment: Digital Thread Phase 8a IOC		2	2026	2	2026
Deployment: Digital Thread Deployment: Digital Thread Phase 8b IOC		4	2026	4	2026
Deployment: Digital Thread Deployment: Digital Thread Phase 9a IOC		2	2027	2	2027
Deployment: Digital Thread Deployment: Digital Thread Phase 9b IOC		4	2027	4	2027
Deployment: Digital Thread Deployment: Digital Thread Phase 10a IOC		2	2028	2	2028
Deployment: Digital Thread Deployment: Digital Thread Phase 10b IOC		4	2028	4	2028

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2903 / NAVAIR IT

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: Digital Thread New/Updates (Phase 4a)	2	2022	2	2022
Deliveries: Digital Thread New/Updates (Phase 4b)	4	2022	4	2022
Deliveries: Digital Thread New/Updates (Phase 5a)	2	2023	2	2023
Deliveries: Digital Thread New/Updates (Phase 5b)	4	2023	4	2023
Deliveries: Digital Thread New/Updates (Phase 6a)	2	2024	2	2024
Deliveries: Digital Thread New/Updates (Phase 6b)	4	2024	4	2024
Deliveries: Digital Thread New/Updates (Phase 7a)	2	2025	2	2025
Deliveries: Digital Thread New/Updates (Phase 7b)	4	2025	4	2025
Deliveries: Digital Thread New/Updates (Phase 8a)	2	2026	2	2026
Deliveries: Digital Thread New/Updates (Phase 8b)	4	2026	4	2026
Deliveries: Digital Thread New/Updates (Phase 9a)	2	2027	2	2027
Deliveries: Digital Thread New/Updates (Phase 9b)	4	2027	4	2027
Deliveries: Digital Thread New/Updates (Phase 10a)	2	2028	2	2028
Deliveries: Digital Thread New/Updates (Phase 10b)	4	2028	4	2028
<b>Digital Production Floor</b>				
Contract Award: Contract Award Prep	1	2023	3	2023
Contract Award: Contract Award	3	2023	3	2023
Development: Development Digital Production Floor: Digital Production Floor Phase 1 LD1	1	2024	3	2024
Development: Development Digital Production Floor: Digital Production Floor Phase 1 LD2	2	2024	4	2024
Development: Development Digital Production Floor: Digital Production Floor Phase 2 LD1	1	2025	3	2025
Development: Development Digital Production Floor: Digital Production Floor Phase 2 LD2	2	2025	4	2025
Development: Development Digital Production Floor: Digital Production Floor Phase 3 LD1	1	2026	3	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2903 / NAVAIR IT	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Development: Development Digtial Production Floor: Digital Production Floor Phase 3 LD2		2	2026	4	2026
Development: Development Digtial Production Floor: Digital Production Floor Phase 4 LD1		1	2027	3	2027
Development: Development Digtial Production Floor: Digital Production Floor Phase 4 LD2		2	2027	4	2027
Development: Development Digtial Production Floor: Digital Production Floor Phase 5 LD1		1	2028	3	2028
Development: Development Digtial Production Floor: Digital Production Floor Phase 5 LD2		2	2028	4	2028
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 1 LD1		1	2024	3	2024
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 1 LD2		2	2024	4	2024
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 2 LD1		1	2025	3	2025
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 2 LD2		2	2025	4	2025
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 3 LD1		1	2026	3	2026
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 3 LD2		2	2026	4	2026
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 4 LD1		1	2027	3	2027
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 4 LD2		2	2027	4	2027
Deployment: Deployment Digtial Production Floor: Digital Production Floor Phase 5 LD1		1	2028	3	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2903 / NAVAIR IT	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Deployment: Deployment Digital Production Floor: Digital Production Floor Phase 5 LD2	2	2022	4	2028
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 1 LD1	3	2024	3	2024
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 1 LD2	4	2024	4	2024
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 2 LD1	3	2025	3	2025
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 2 LD2	4	2025	4	2025
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 3 LD1	3	2026	3	2026
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 3 LD2	4	2026	4	2026
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 4 LD1	3	2027	3	2027
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 4 LD2	4	2027	4	2027
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 5 LD1	3	2028	3	2028
Deliveries: Deliveries Digital Production Floor: Digital Production Floor Phase 5 LD2	4	2028	4	2028
Radio Freq ID (RFID) Technologies				
RFID Development: Development: Development - General Equipment Radio Freq ID (RFID) Technologies	2	2024	4	2024
RFID Deployment: Deployment: Deployment - General Equipment Radio Freq ID (RFID) Technologies	1	2025	3	2025
RFID Deliveries: Deliveries: Deliveries - General Equipment Radio Freq ID (RFID) Technologies	4	2025	4	2025
Additive Manufacturing (AM)				
Capabilty Expansion: Development: Development	1	2024	4	2028
System Evaluation: Technical and Operational Evaluation: Technical and Operational Evaluation	1	2024	4	2028
System Networking: Deployment: Deployment	1	2024	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2904 / NAVSEA IT			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2904: NAVSEA IT	306.041	15.930	17.474	19.431	-	19.431	21.171	20.411	20.113	20.515	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Navy Maritime Maintenance Enterprise Solution (NMMES) is the Information Technology (IT) toolset currently utilized to execute ship and submarine maintenance in the Naval Shipyards (NSY), Regional Maintenance Centers (RMC), Ship Repair Facility (SRF), Intermediate Maintenance Facilities (IMF), Forward Deployed Regional Maintenance Center, and commercial industrial sites worldwide. These maintenance activities support Fleet operations 24 hours per day, 7 days per week. The NMMES IT solution is used by over 40,000 civilians and military who conduct over \$8.9B of ship, aircraft carrier, and submarine maintenance and modernization on an annual basis.

The NMMES program includes sustainment as well as multiple modernization efforts to insure the continued effectiveness of the Fleet maintenance IT toolset. These efforts consist of adding mandatory enhancements, such as Financial Improvement and Audit Readiness (FIAR) changes and aligning with the Standard Accounting Budget Reporting System (SABRS) system. The NMMES program provides for software changes, retiring and/or replacing of costly legacy applications, transition planning, and systems engineering for integration with existing and future solutions. These efforts align with direction to insure that proposed interim solutions support and facilitate the transition to the planned maintenance solution end state. This program will provide modernization, migration, testing, and consolidation of obsolete IT tools and code base to the next generation of centrally hosted tools supporting Fleet Maintenance systems for the Navy. Funding for NMMES PU 2904 addresses critical deficiencies and minimizes the inherent risks that a catastrophic failure would be to fleet readiness. The funds are required to support the modernization of products that are on outdated software, align maintenance applications and processes with evolving shipbuilding techniques, and enhance the existing applications to make them cloud capable. It also provides for software enhancements required to make applications Financial Improvement and Audit Readiness (FIAR) compliant and to enable system modifications of financial feeder applications to interface with a FIAR compliant system of record. The requirement to handle 3-D integrated product models being delivered with CVN-78, Virginia Class and Columbia Class are also driving the requirement. NAVSEA plans to execute these funds primarily through a current sustainment contract and several separate contracts through existing delivery orders to gain the specialized resources and material necessary to sustain these vital functions.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> electronic Technical Work Document (eTWD)	1.007	1.586	1.814	0.000	1.814
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The eTWD Initiative is a NAVSEA Sponsored, Chief of Naval Operations (CNO) approved Reduction in Total Ownership Cost (ROTC) Initiative to establish interactive electronic Technical Work Document (eTWD) capability for use in the naval shipyards. An eTWD will be used to execute maintenance, repair, overhaul and modernization work packages on ships and submarines undergoing major availabilities in					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>naval shipyards. This solution will provide paperless work packages, pulling authoritative data from the existing NMMES applications supporting ship maintenance. The interactive electronic work instruction will be used at the jobsite replacing the current paper based instructions. The overall goal for eTWD is twofold: 1) to reduce the resources and time preparing, executing and certifying work instructions; and 2) enable the non-stop execution of work by having online documents and drawings accessible for problem resolution. The eTWD Initiative is in progress.</p> <p><b>FY 2023 Plans:</b> The eTWD system is scheduled to conduct and complete Government Acceptance Testing event followed by a Production Readiness Review. eTWD Go Live with individual shipyards will occur as each shipyard migrates onto MSE at the CEDC in Charleston, SC. Sustainment Plan strategy to be finalized and implemented when eTWD contract ends to support long-term eTWD solution sustainment.</p> <p><b>FY 2024 Base Plans:</b> The follow-on modules will be initiated based on the success during government testing and evaluation. The functionality will include interfaces with the systems of record that are utilized for work brokering and the development and implementation of class maintenance plans. This will then lead to the ability to compare work plans against the varied configurations across ship/sub classes in future years. The existing functionality will move into the NMMES sustainment operational baseline. Planning for deployment to the Intermediate Level activities will begin.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$0.228M) supports agile deployments in the NSYs conducted in FY23 which will continue into FY24 with ramp down in FY25. The timeline shifted due to the focus on DON COST SABRS and the DISA circuit installs, which permitted centralized data hosting.</p>						
<p><b>Title:</b> Project Sequencing &amp; Scheduling (PSS) Upgrade</p> <p><b>Articles:</b></p> <p><b>Description:</b> The PSS scheduling application provides the naval shipyards (Portsmouth Naval Shipyard, Puget Sound Naval Shipyard &amp; IMF, Pearl Harbor Naval Shipyard &amp; IMF, and Norfolk Naval Shipyard) with a customized, flexible scheduling tool for Chief of Naval Operations maintenance availabilities and other maintenance, repair and overhaul work assigned to the activities in support of the first phase of the Optimized</p>		3.457 -	1.606 -	1.165 -	0.000 -	1.165 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Fleet Response Plan. Key system objectives include: 1) Standardization of the scheduling processes and tools; 2) Creation of dates for use in the NMMES project management software; 3) Generation of user and management reports covering all aspects of scheduling of a ship or submarine availability. The current PSS application is based on a proprietary commercial product originally acquired over 25 years ago. The application is outdated and the vendor has informed the Navy that it will no longer be supported in the near future requiring Navy to pursue an immediate upgrade to a supportable product, while not interrupting maintenance availabilities. The product had already become increasingly difficult to maintain and with the pending loss of vendor support could lead to catastrophic system failure and loss of ability to maintain project schedules.</p> <p><b>FY 2023 Plans:</b> Conduct training of the user community in the use of the PSS replacement product and GO-Live. Begin configuration for maintenance support functions not currently included in the critical chain scheduling functions across shipyard availabilities. Identify scheduling and sequencing requirements for lifting and handling to conduct analysis to identify configuration and integration tasks into single NSY scheduling tool.</p> <p><b>FY 2024 Base Plans:</b> Continue work with new scheduling product vendor to configure product enhancements based on data analysis and continuous improvement process requirements and Fleet recommendations. Begin configuration by lifting and handling sequencing requirements.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$0.441M) due to critical chain/critical path configuration efforts slowly ramping down/completed and continued analysis occurs in a sustainment environment.</p>						
<p><b>Title:</b> Planned Maintenance System (PMS) Upgrade</p> <p><b>Articles:</b></p> <p><b>Description:</b> The Planned Maintenance System Management Information System (PMS MIS) is an upgraded web-based solution that tracks the status of all Maintenance Index Pages (MIPs) and Maintenance Requirements Cards (MRCs). This includes new and revised documentation allowing for Technical Feedback Report (TFBR) generation and tracking from initial reporting to problem resolution, management of activity documentation distribution information, document development history including Reliability-Centered Maintenance (RCM) information and other data needed to support all forms of planned maintenance in the</p>		1.495 -	1.986 -	0.586 -	0.000 -	0.586 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Fleet. PMS MIS will interface with authoritative configuration and logistics management databases allowing for Equipment Maintenance Plans (EMPs) to reflect actual ship or unit configuration. These EMPs will be created by ashore maintenance managers eliminating tailoring by ships' force. The upgraded PMS Scheduler (PMS SKED) is designed to consume configuration specific O-Level Maintenance Plans and MRCs by afloat platforms to ease administrative burdens associated with Force Revision processing and equipment to PMS associations. The existing processes require excessive sailor and shore expert administrative burden creating complex and ambiguous documents and extensive time to implement changes. As a result, improper execution of equipment maintenance can occur. Additionally, leadership lacks the tools to monitor program implementation and assure satisfactory performance. Furthermore, the existing processes do not support distributed and optimally manned ship concepts of operation such as those now used by the Naval Expeditionary Combat Command and the Littoral Combat Ship. The future PMS upgrade will provide visibility to shore maintenance leaders ensuring equipment is consistently scheduled throughout the fleet and execution issues are identified.						
FY 2023 Plans: PMS MIS role based and user acceptance testing will be completed and PMS MIS IOC will be delivered into a Navy production environment. The remaining development and testing of PMS SKED Prime IOC (shore based component) is expected to be completed and delivered. PMS SKED Instance IOC functionality (afloat functionality) including secure communications will be developed and tested. This will occur in line with any updates required by the Risk Management Framework for cybersecurity. Interfacing with the Navy Maintenance, Repair and Operations (NMRO) team to validate PMS scheduling functionality and compatibility with legacy Force Revision processes will continue. The FoPMS team is expected to support NMRO shipboard pilots by end of FY22. Continue utilizing spiral development philosophy to incorporate PMS MIS IOC enhancements.						
FY 2024 Base Plans: PMS SKED Instance IOC testing completed in FY23 with various shipboard pilots identified and underway. Migration of ashore users into PMS SKED Prime IOC has commenced. Upon successful completion of the pilots, the upgraded PMS SKED Instance will be delivered to the Navy production environment (targeting CANES) for afloat users. The spiral development philosophy will continue to be used to incorporate PMS MIS and PMS SKED IOC enhancements. The Ships' 3-M development efforts will begin in late FY22 and the complete end-to-end testing and deployment will conclude prior to the end of FY24.						
FY 2024 OCO Plans:						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 decrease (\$1.400M) due to contract requirements in support of PMS SKED being delivered and testing efforts ramping down.						
Title: Strategic Planning &Forecasting (SPF) Upgrade		0.000	1.445	1.788	0.000	1.788
Articles:		-	-	-	-	-
Description: SPF is part of a suite of tools in NMMES that are utilized to assist Navy industrial activities in resource planning and long term workload forecasting to meet CNO strategic maintenance requirements through the gathering and compiling of workforce data. Two additional applications; 1) Performance Measurement and Control (PMC) and Quality Performance System (QPS) are interfaced with SPF to produce the staffing, planning and performance measurement analysis necessary to successfully accomplish work in navy industrial activities. All three of these applications have known software deficiencies, which limit productivity and require cumbersome manual adjustments of key planning, availability progress, and workload leveling progress reports. This data is reported to the CNO on a weekly basis and is shared with others such as the Joint Chiefs and Congress when requested. Historically to effectively operate and meet mission needs, the naval shipyards and RMCs have supplemented this suite with additional local spreadsheet and databases, adding to the complexity of replacing this aging solution. One goal of the SPF Upgrade is to eliminate these ad hoc databases and unify the solution to effectively operate in the targeted navy data center environment. The SPF Upgrade is part of the Service Life Extension that will address the accumulation of significant problems with this application, update the software platform, provide integrated metrics capabilities across naval shipyards and include accessibility of data by planners at headquarters. The SPF Upgrade will modernize the database architecture to provide fully functioning data warehouse environment that will eliminate the weekend long running of PMC jobs that hinders efficiency and productivity. The Upgrade will eliminate the currently required manual interfaces with other NMMES applications to produce a seamless real-time environment that can accommodate all project management metrics, as well as all ship maintenance related metrics. Additionally, it will eliminate the manual data gathering and consolidation efforts required to produce Shipyard Interim Metrics; and eliminate the need for Headquarters and each shipyard to maintain their own unique respective standalone data files. These efforts are in direct support of the CNO's Design for Maritime Superiority line of effort for the role of data in decision-making.						
FY 2023 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue development of PMC component as part of the Enterprise data Analytics which has incorporated PMC in it. Finalize functional and business process analysis and market analysis of commercial products. Select commercial package(s) and begin configuration and integration planning.  <b>FY 2024 Base Plans:</b> Complete configuration of upgrade, and begin testing in the consolidated environment once network circuit upgrades are complete for the SPF upgrade in preparation. Begin configuration and integration of the QPS and PMC components. Initiate testing of the end-to-end business processes in the toolset.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$0.343M) supports agile deployments in the NSYs are conducted in FY23 and will continue into FY24 with ramp down in FY25. The timeline shifted due to the focus on FY22 active efforts and the new SPF OTA moving to an FY23 start vice FY22.						
Title: Financial Technical Upgrade  <div>Articles:</div> <b>Description:</b> NMMES has two primary applications that are financial feeders; 1) SYMIS Mission Funded COST (aka COST) which processes cost related data for mission funded activities with the Standard Accounting & Reporting System - Field Level (STARS-FL); and 2) the SYMIS Pre & Post Payroll Processes which manages the Time & Attendance data from NMMES to the Defense Civilian Payroll System (DCPS). These applications are targeted for modernization to address the FOUR mandatory requirements: 1) meeting FISCAM and auditability requirements; 2) transitioning COST to interface with SABRS, vice STARS-FL no later than 30 September 2019; 3) both these applications are COBOL-based. COST utilizes a 1990s era Case tool (PACBASE) to generate COBOL-ready code. In 2015, vendor support for the PACBASE tool was transitioned to an IBM subsidiary in France (who in 2016 informed the Navy that support for the tool would end by 2018), hence without this tool the COST application cannot be updated and therefore must be refreshed in order to operate; and 4) the rapid increase in the cost of gaining sufficient COBOL licenses to operate these two applications in support of fleet maintenance has also created emerging execution year budget challenges for the Navy to such an extent that it is now more feasible to transition these applications to a non-COBOL solution than to continue in the current licensing structure. The Financial Technical Upgrade addresses these four urgent needs in order to continue operation of the NMMES system in support of ship and submarine maintenance operations.		0.000 -	3.250 -	1.267 -	0.000 -	1.267 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>FY 2023 Plans:</b> Deploy new NMMES financial solution to shipyards and RMC production environments and begin potential Navy ERP interface. Being G invoicing as directed by the Department of Treasury. Deployment of select modules in the replatformed toolset. Conduct training and deployment. Begin planning and requirements identification for future potential Navy ERP interface.					
<b>FY 2024 Base Plans:</b> Continue deployment financial solution to shipyards and RMC production environments and begin potential Navy ERP interface while working through.					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease(\$1.983M) due to the production effort moving into a sustainment effort at the NSYs and RMCs.					
Title: Material Management Upgrade		1.217	1.766	1.490	0.000
Articles:		-	-	-	-
Description: The Material Access Technology-Mission Funded (MATmf) application is used by all Naval Shipyards to manage and provide logistical support for services and materials manufactured, purchased and utilized in the overhaul, repair, and maintenance of ships and submarines. MATmf provides quantitative, financial, and status information on industrial materials. It monitors the shop stores in the shipyard and assesses the direct material inventories. MATmf has reached end-of-life and is operating on software components that are considered obsolete. A Service Life Extension is required to support the future capabilities (i.e. eTWD requirements), to correct sustainability issues, and to improve the ability to support current and future ships maintenance. While the upcoming MSE releases will consolidate application databases (including MATmf into a data center environment); it does not include material integration across shipyards nor provide usable real time material information or metrics across the ship maintenance community. The MSE releases will also not convert the outdated development code, eliminate the time cumbersome manual batch processing, nor fix a host of long term shortcomings affecting the efficiency of MATmf (including long time printing limitations affecting Material Control Tags and waterfront performance). Utilizing the findings from multiple LEAN events NAVSEA 08 and the Corporate Material Process Action Team have identified and documented many areas in MATmf that need enhancement to improve effectiveness. Some of these requirements include: 1) the ability to allow for Fiscal Year rollover of JMLs, 2) the ability to allow redistribution of bulk receipt inspected materials to other					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
shipyards, 3) the ability to report transactions for BP28 assets, 4) improve the ability to create efficient processes for receipt of RFI tagged material into Shop Stores, 5) improve receipt of shipyard contracts into shipyard for receipt inspection, 6) allow DLR material in Shop Stores, 7) address transition to another handheld scanner as the current handhelds are no longer available for purchase. These deficiencies will be addressed in the Material Management Upgrade.  <b>FY 2023 Plans:</b> Conduct prototype testing and analysis to determine the best solution to meet ship maintenance requirements. After down selection initiate software configuration efforts. Begin functional testing of the replacement solution. Conduct Integration testing to ensure the planned solution meets performance requirements of NMMES System and external material management systems of record. This is dependent on the continued DISA network circuit procurement, installation, and cybersecurity protections that will support the Depot Maintenance user community. Begin acceptance testing, training and deployment. Continued deployment of SMMS.  <b>FY 2024 Base Plans:</b> Additional development, integration, and user acceptance testing to SMMS to moving into government cloud environment, once approved by NAVSEA 08. Additional modules to incorporate functionality of more local material apps developed, acceptance tested by users, and FMA users trained, as necessary by corporate needs. Sustainment of current SMMS application.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$0.276M) due to configuration ramping down and deployment beginning based on current contract estimates.						
Title: NMMES -- Maritime Systems Environment (MSE) -- Database Optimization  <b>Articles:</b>  <b>Description:</b> The NMMES system is presently undergoing modernization to address cyber security deficiencies, consolidate and align databases across multiple data instances, and to transition the solution into an approved Component Enterprise Data Center (CEDC). Once the transition from four geographically dispersed instances to the CEDC is complete and has reached stability MSE Database will be optimized to gain throughput efficiencies, capitalize on economies of scale, and rationalize data structures to streamline the use of authoritative data		2.160 -	1.890 -	1.596 -	0.000 -	1.596 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
and to provide standardized access to data across the fleet maintenance enterprise. MSE is live at the RMCs, FDRMC, and SRF. NSYs and NSSF will transition to the MSE UNNPI environment in FY20-21.						
FY 2023 Plans: Continue analyzing legacy system data and component application database structures to discover opportunities for efficiency gains through the implementation of streamlined database designs which are key in supporting analytics and database decision making. Will roll-out Phase 2 of the Business Intelligence and Business Warehouse solution.						
FY 2024 Base Plans: Continue efforts from the previous year by implementing MSE system wide data optimization and normalization to cohesively and seamlessly integrate multiple component databases using modern database schema designs and remove redundant application specific stored procedural codes embedded in databases. Goal is to eliminate duplication of stored data and unnecessary procedural programming code in databases to directly support mission critical data analytics and dramatically increase system efficiency and computational speed.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 decreased (\$0.294M) due expected licenses cost savings by optimizing databases.						
Title: SUPDESK - Timekeeping For All		1.038	1.038	2.350	0.000	2.350
Articles:		-	-	-	-	-
Description: The current timekeeping system (SUPDESK) at the shipyards allows managers to input time for their employees. This is considered a financial compliance issue and requires the system be adjusted to allow all shipyard workers to input and certify their individual time. Will also add the capability to track and certify overtime approvals. Supports efforts to close a financial audit finding by enabling time attestation for all employees.						
FY 2023 Plans: Continue software development and functional testing of the enhanced solution. Conduct integration testing to insure end to end data flow meet compliance requirements.						
FY 2024 Base Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 2904 / NAVSEA IT				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue integration and complete training as necessary with the activities.							
FY 2024 OCO Plans: N/A							
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase (\$1.312M) supports continued AIM integration and completes training as necessary with the activities.							
Title: MSE Waterfront Process Improvement			0.765	0.050	1.050	0.000	1.050
Articles:  Description: The Maritime Systems Environment (MSE) Waterfront Processes Improvement project is focusing on aligning the NMMES toolset to compliment waterfront industrial processes changes that were recommended based on the outcomes of multiple LEAN events. This is a multi-year initiative to not only address the backlog of LEAN recommendations in the ship maintenance community, but to also provide the impetus to accelerate the implementation of additional process improvements to gain further economies in the maintenance community.			-	-	-	-	-
FY 2023 Plans: Conduct analysis on the LEAN findings and incorporate into enhancements on future releases in the consolidated baseline at CEDC Charleston. Increase customer engagement and continue process improvement initiatives. Align tools to include rationalization of functionality into a consolidated NMMES toolset. Finalize the process for the agile software development methodology, and deploy the solution for multiple projects. Complete installation of network improvements providing faster response of data for waterfront personnel in the ship maintenance community.							
FY 2024 Base Plans: Incorporate change requests for remaining items on LEAN backlog and updates into the existing systems. Conduct LEAN Rapid Improvement Event to capture new process improvement initiatives.							
FY 2024 OCO Plans: N/A							
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increased (\$1.000M) supports MSE WFI LEAN Rapid Improvement Event to capture new process improvement initiatives which increase efforts at the NSYs and RMCs.							
Title: Enterprise Data Analytics			2.040	1.150	0.600	0.000	0.600

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:		-	-	-	-	-
Description: Establish capability to fully utilize navy authoritative maintenance data to develop predictive analysis and gain efficiencies in ship availabilities to provide data driven decisions based on current information.						
FY 2023 Plans: Continue integration, configuration, and deployments of selected toolset(s) as functionality is delivered based on lessons learned, user community feedback, leadership direction, and data quality improvements.						
FY 2024 Base Plans: Finalized integrating data sets from depot and intermediate maintenance applications to improve data visualization and analysis across the maintenance enterprise. Conduct efforts to provide automatic retrieval of information from various corporate systems that are manually performed on a daily basis, thereby eliminating the manual and laborious burden, ensuring consistency of data retrieval, and maintaining the pedigree of data collection.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 decreased (\$0.550M) due to the planned completion of training and maturity of the user community (train the trainer). Will maintain an open community of practice when additional training is necessary.						
Title: Product Data Management Integration		0.750	0.500	1.850	0.000	1.850
Articles:		-	-	-	-	-
Description: Modify the NMMES solution to be able to utilize the 3-D Product model information being delivered to the Navy by the shipbuilders for the Ford and Columbia Classes. Both the Ford Class Carrier and Columbia Class Submarine Programs are being designed, built and delivered utilizing 3-D integrated product models. Configuration and technical information will be provided to the government in electronic format rather than via paper-based drawings. The current suite of Shore Maintenance applications cannot accept the data delivered by either program, which will impact the ability of the shore Maintenance Community to maintain and modernize these platforms. This is required to support the USS FORD Planned Incremental Availability (PIA) at Norfolk Naval Shipyard as well as future maintenance availabilities on both classes.						
FY 2023 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue configuration, integration, and testing activities. Correct deficiencies identified during the testing processes. Initiate deployment in alignment with the rest of the NMMES modules as usable features become available. Expand deployment capability across the NAVSEA community from the initial localized deployment sites.						
FY 2024 Base Plans: Finalize data integration and manipulation standards, policies, and practices to support COLUMBIA Class, FORD Class, and VIRGINIA Block V.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase (\$1.350M) due to the demand for mobility devices and data integration finalization.						
Title: Local Application Rationalization		0.660	0.660	1.030	0.000	1.030
Articles:		-	-	-	-	-
Description: Several local applications provide site-specific augmentation to the NMMES toolset due to the historically distributed environment. The project rationalizes application to provide standardized functionality across the shore maritime maintenance community in line with the centralized hosting. This requires reviewing local application functionality and to determine which application functionality should be migrated.						
FY 2023 Plans: Continue analysis of local applications for rationalization into MSE. Begin planning and design for the standardization, configuration/integration of specific functionality into the NMMES portfolio. Progress planning and design for the standardization, configuration/integration into NMMES portfolio. Configuration and integration to incorporate the required end-to-end functionality into the centrally hosted single instance of the NMMES system.						
FY 2024 Base Plans: Consolidate required functionality of selected local naval shipyard applications that extend functionality beyond the aging shipyard IT systems. Continue to enhance the MSE suite of applications and implement local application functionality as older government made software is re-platformed or replaced with commercial						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
off-the-shelf (COTS) software. Improve product support with consolidated functionality in fewer software applications.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$0.370M) supports Risk Management Framework cybersecurity assurances processes during the integration efforts.					
<b>Title:</b> Mobility Solutions  <b>Articles:</b>  <b>Description:</b> Establish a "go everywhere" capability for the NMMES system at the Regional Maintenance Centers and Naval Shipyards. Include the capability to retrieve authoritative information across multiple, secure devices, (i.e. tablets, digital readers, scanners, etc.) to continue to exploit a paperless arena.  <b>FY 2023 Plans:</b> Expand to aircraft carriers, test requirements and develop processes to support remote support, primarily photo. Continue expanding application availability for mobile devices.  <b>FY 2024 Base Plans:</b> Identify electronic controls required to secure information on mobile devices and define technical attributes to support the expansion to include wearable devices as well as expand to video and voice from inside ship hulls.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$2.298M) supports expanding application availability for mobile devices.	1.341 -	0.547 -	2.845 -	0.000 -	2.845 -
Accomplishments/Planned Programs Subtotals	15.930	17.474	19.431	0.000	19.431
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
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<p><b>D. Acquisition Strategy</b></p> <p>The backbone of the present solution is a set of dated information technology (IT) products that have exceeded or are approaching end-of-life and do not meet the increasingly digitized operating environment. In order to ensure that the IT toolset continued functioning as required the Fleet Maintenance Board of Directors approved the establishment of the NAVSEA PMO-IT to oversee the selected development and sustainment efforts of this solution; to acquire and manage the IT resources necessary to gain further efficiencies in the toolset; and to transition this solution to a more modern and efficient end state. Selected modernizations, utilizing Commercial Off The Shelf (COTS) are aligned with ongoing sustainment to provide an IT solution until a COTS based Technical Refresh of this solution can be completed and deployed. Existing IT contracts will be used for sustainment services along with Other Transaction Agreements (OTA) and existing delivery orders to support required services at the waterfront.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2904 / NAVSEA IT					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	NAVSEA : WNY, D.C.	244.097	15.930	Oct 2021	17.474	Oct 2022	19.431	Oct 2023	-		19.431	Continuing	Continuing	Continuing
Software Development	WR	NSLC : Mechanicsburg, PA	15.999	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Advance Planning Analysis	WR	NAVWAR : Arlington, VA	7.471	0.000		0.000		0.000		-		0.000	0.000	7.471	-
Advance Planning Analysis	C/CPFF	NAVSEA : WNY, D.C.	33.474	0.000		0.000		0.000		-		0.000	0.000	33.474	-
Advance Planning Analysis	C/CPFF	NSWC PHD : Port Hueneme, CA	5.000	0.000		0.000		0.000		-		0.000	0.000	5.000	-
Subtotal			306.041	15.930		17.474		19.431		-		19.431	Continuing	Continuing	N/A
Remarks															
Program plans to execute all contract awards for software development of shipyard and national systems through the NAVSEA SEAPORT vehicle and other competitively awarded contracts.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			306.041	15.930		17.474		19.431		-		19.431	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

**PAGE ONE - Lean Systems Improvement**ELECTRONIC TECHNICAL WORK  
DOCUMENTS (eTWD): CEDC BuildoutELECTRONIC TECHNICAL WORK  
DOCUMENTS (eTWD): Network Circuit  
ImprovementsELECTRONIC TECHNICAL WORK  
DOCUMENTS (eTWD): eTWD Software  
ConfigurationELECTRONIC TECHNICAL WORK  
DOCUMENTS (eTWD): AIM ChangesELECTRONIC TECHNICAL WORK  
DOCUMENTS (eTWD): eTWD  
ImplementationPROJECT SEQUENCING & SCHEDULING  
(PSS) UPGRADE: PSS Upgrade Scheduling  
Improvement AnalysisPROJECT SEQUENCING & SCHEDULING  
(PSS) UPGRADE: Version UpgradePROJECT SEQUENCING & SCHEDULING  
(PSS) UPGRADE: PSS Upgrade Scheduling  
Improvement Software ConfigurationPROJECT SEQUENCING & SCHEDULING  
(PSS) UPGRADE: PSS Upgrade Scheduling  
Improvement Testing & DocumentationPROJECT SEQUENCING & SCHEDULING  
(PSS) UPGRADE: PSS Upgrade Scheduling  
Improvement Implementation

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

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	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Critical Chain Scheduling Cross Functionality																												
<b>PAGE THREE - Migration, Consolidation &amp; Enhancements</b>																												
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Analysis																												
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS integration, configuration, configuration and testing																												
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Testing & Documentation																												
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS, SHIPS, SKED Upgrade Implementation																												
<b>PAGE FOUR - Migration, Consolidation &amp; Enhancements CONTINUED</b>																												
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Analysis																												
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: DISA Circuit Intall																												
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Software Configuration																												
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Testing & Documentation																												

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## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Implementation (includes QPS & SPF modules)

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**PAGE FIVE- Migration, Consolidation & Enhancements CONTINUED**

FINANCIAL TECHNICAL UPGRADE: Financial Tech Redirect to DON SABRS

FINANCIAL TECHNICAL UPGRADE: Financial Tech SW upgrade

FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Testing & Documentation

FINANCIAL TECHNICAL UPGRADE: Schedule Detail

FINANCIAL TECHNICAL UPGRADE: COST SABRS Interface Implementation

FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Implementation

**PAGE SIX- Migration, Consolidation & Enhancements CONTINUED**

MATERIAL MANAGEMENT UPGRADE: CEDC Buildout

MATERIAL MANAGEMENT UPGRADE: DISA Network Circuit Improvement

MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Analysis for Replacement

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy													Date: March 2023																							
Appropriation/Budget Activity									R-1 Program Element (Number/Name)								Project (Number/Name)																			
1319 / 5									PE 0605013N / Information Technology Development								2904 / NAVSEA IT																			
									FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
									1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Software Configuration																																				
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Testing & Documentation																																				
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Implementation																																				
PAGE SEVEN- Migration, Consolidation & Enhancements CONTINUED																																				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: OEP Approval																																				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Analysis																																				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): DISA Circuit Upgrade																																				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Software Configuration and Standardization																																				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Testing & Documentation																																				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Implementation																																				

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Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development										Project (Number/Name) 2904 / NAVSEA IT																					
										FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Analysis																																									
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Software Configuration																																									
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Testing & Documentation																																									
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Implementation																																									
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Analysis																																									
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Software Configuration/Integration																																									
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Testing & Documentation																																									
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Implementation																																									



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																	Date: March 2023											
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development										Project (Number/Name) 2904 / NAVSEA IT								
	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Enterprise Data Analytics: Enterprise Data Analytics: OEP Approval																												
Enterprise Data Analytics: Enterprise Data Analytics: Analysis																												
Enterprise Data Analytics: Enterprise Data Analytics: Software Configuration and Standardization																												
Enterprise Data Analytics: Enterprise Data Analytics: Testing & Documentation																												
Enterprise Data Analytics: Enterprise Data Analytics: Implementation																												
Enterprise Data Analytics: Product Data Management Integration: PDM: OEP Approval																												
Enterprise Data Analytics: Product Data Management Integration: PDM: Analysis																												
Enterprise Data Analytics: Product Data Management Integration: PDM: Software Configuration and Standardization																												
Enterprise Data Analytics: Product Data Management Integration: PDM: Testing & Documentation																												
Enterprise Data Analytics: Product Data Management Integration: PDM: Implementation																												
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: OEP Approval																												
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Analysis																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023																					
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2904 / NAVSEA IT																			
										FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Software Configuration										<div></div>																											
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Testing & Documentation										<div></div>																											
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Implementation										<div></div>																											

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

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Project (Number/Name)

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## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>PAGE ONE - Lean Systems Improvement</b>				
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): CEDC Buildout	3	2022	4	2023
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): Network Circuit Improvements	3	2022	3	2023
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): eTWD Software Configuration	3	2022	3	2023
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): AIM Changes	3	2022	3	2023
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): eTWD Implementation	4	2023	4	2024
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Analysis	3	2022	1	2023
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: Version Upgrade	3	2022	2	2023
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Software Configuration	4	2022	4	2023
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Testing & Documentation	2	2023	4	2023
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Implementation	3	2023	4	2023
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Critical Chain Scheduling Cross Functionality	4	2023	3	2024
<b>PAGE THREE - Migration, Consolidation &amp; Enhancements</b>				
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Analysis	1	2022	1	2022
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS integration, configuration, configuration and testing	1	2022	4	2022

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Testing & Documentation	2	2022	3	2022
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS, SHIPS, SKED Upgrade Implementation	3	2023	3	2024
<b>PAGE FOUR - Migration, Consolidation &amp; Enhancements CONTINUED</b>				
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Analysis	1	2022	1	2022
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: DISA Circuit Intall	1	2022	3	2022
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Software Configuration	3	2022	3	2022
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Testing & Documentation	4	2022	3	2023
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Implementation (includes QPS & SPF modules)	4	2023	1	2024
<b>PAGE FIVE- Migration, Consolidation &amp; Enhancements CONTINUED</b>				
FINANCIAL TECHNICAL UPGRADE: Financial Tech Redirect to DON SABRS	1	2022	4	2022
FINANCIAL TECHNICAL UPGRADE: Financial Tech SW upgrade	3	2022	2	2023
FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Testing & Documentation	2	2022	4	2023
FINANCIAL TECHNICAL UPGRADE: Schedule Detail	1	2022	1	2023
FINANCIAL TECHNICAL UPGRADE: COST SABRS Interface Implementation	4	2022	4	2022
FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Implementation	3	2022	2	2023
<b>PAGE SIX- Migration, Consolidation &amp; Enhancements CONTINUED</b>				
MATERIAL MANAGEMENT UPGRADE: CEDC Buildout	1	2022	4	2022
MATERIAL MANAGEMENT UPGRADE: DISA Network Circuit Improvement	1	2022	3	2023
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Analysis for Replacement	1	2022	4	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2904 / NAVSEA IT	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Software Configuration		4	2022	1	2023
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Testing & Documentation		2	2023	4	2023
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Implementation		3	2023	3	2024
PAGE SEVEN- Migration, Consolidation & Enhancements CONTINUED					
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: OEP Approval		1	2022	1	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Analysis		1	2022	1	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): DISA Circuit Upgrade		1	2022	3	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Software Configuration and Standardization		4	2022	4	2023
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Testing & Documentation		3	2022	4	2023
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Implementation		4	2022	4	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Analysis		2	2022	3	2023
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Software Configuration		3	2022	3	2023
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Testing & Documentation		1	2022	4	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Implementation		2	2023	2	2023
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Analysis		1	2022	3	2022

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## Project (Number/Name)

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Software Configuration/Integration	2	2022	4	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Testing & Documentation	3	2022	1	2023
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Implementation	2	2023	2	2023
Enterprise Data Analytics: Enterprise Data Analytics: OEP Approval	1	2022	1	2022
Enterprise Data Analytics: Enterprise Data Analytics: Analysis	2	2022	2	2022
Enterprise Data Analytics: Enterprise Data Analytics: Software Configuration and Standardization	3	2022	2	2023
Enterprise Data Analytics: Enterprise Data Analytics: Testing & Documentation	3	2022	3	2023
Enterprise Data Analytics: Enterprise Data Analytics: Implementation	4	2022	4	2022
Enterprise Data Analytics: Product Data Management Integration: PDM: OEP Approval	1	2022	1	2022
Enterprise Data Analytics: Product Data Management Integration: PDM: Analysis	2	2022	4	2023
Enterprise Data Analytics: Product Data Management Integration: PDM: Software Configuration and Standardization	4	2022	2	2023
Enterprise Data Analytics: Product Data Management Integration: PDM: Testing & Documentation	2	2022	2	2023
Enterprise Data Analytics: Product Data Management Integration: PDM: Implementation	4	2023	4	2023
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: OEP Approval	1	2022	1	2022
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Analysis	1	2022	4	2022
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Software Configuration	4	2022	4	2022
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Testing & Documentation	2	2022	4	2023
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Implementation	4	2023	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2905 / BUPERS IT			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2905: BUPERS IT	404.341	135.110	145.401	137.692	-	137.692	123.995	4.460	4.024	4.104	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
<p>MyNavy Human Resources (HR) Transformation - formerly known as Manpower, Personnel, Training &amp; Education (MPT&amp;E) Transformation -- will change how we recruit, how HR services are provided throughout a Sailor's entire "Hire-to-Retire" lifecycle and improve fleet combat readiness. By streamlining processes and systems, MyNavy HR will improve the speed, accuracy, and quality of personnel and pay services, better positioning the Navy to equip and manage its people.</p> <p>This effort is the linchpin of the Navy's MPT&amp;E Business IT Transformation strategy that stems from investing in programs that directly align with the Sailor 2025 vision. The current 70-year-old business processes and 40-year-old obsolete IT systems will not sustain anticipated Fleet growth and is neither cost efficient nor effective. MyNavy HR involves revolutionary change by using agile delivery model to the greatest extent possible to implement business IT products using the Industry Best Practices Model (e.g., early investment for largest ROI, rapid prototyping, and vanilla COTS products usage.) MyNavy HR is a fully integrated portfolio of IT Systems organized into five distinct pillars: Navy Personnel and Pay (NP2), Learning Stack (LS), Enterprise Customer Relationship Management (eCRM), Single Point of Entry (SPOE), and Authoritative Data Environment (ADE). This portfolio of systems serves as the cornerstone of the OPNAV N1 MyNavy HR strategy.</p> <p>The impetus for building an adaptive family of systems is gearing MyNavy HR Transformation towards customer needs. The traditional waterfall delivery methodology of IT goods and services cannot meet the emergent requirements evolving from shortened technical obsolescence. Thus, MyNavy HR Transformation will employ an Agile delivery method that is highly structured, with a repeatable software development approach designed to quickly deliver usable capability to the end user. These capabilities are packaged as Minimum Viable Products (MVPs) which are routinely delivered to the customer for their use and evaluation. Favorably received MVPs are subsequently refined and integrated into a production baseline.</p> <p>Rapidly integrating a family of systems using an agile methodology necessitates an overarching system integrator and coordinator to ingest pilots and prototypes into a technical baseline. MNHR ITS will provide the Global Design &amp; Strategic Planning to baseline the "55 to 1" technical execution plan and will articulate the "system of systems" baseline release. Additionally, pilots and prototypes that have reached sufficient maturity will be integrated and deployed into the production baseline.</p> <p>AUTHORITATIVE DATA ENVIRONMENT (ADE)</p> <p>The Authoritative Data Environment (ADE) is an enterprise information management system that will migrate the existing MyNavy HR legacy data warehouses into a central data repository that is composed of a data warehouse, data lake, data management tools and an Application Program Interface (API) Layer. ADE will provide an authoritative data-sharing framework, leveraging scalable and interoperable technologies as well as business intelligence and data analytic capabilities.</p> <p>ADE will need to interface and integrate with SPOE and all MyNavy HR transactional and business systems, including enabling 'plug &amp; play' of new services, technologies, and system capabilities. Some of the key principles of ADE include:</p> <p>1. Flexible architecture and scalable design.</p>												

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 2905 / <i>BUPERS IT</i>
<p>2. Data Governance to produce authoritative, cleansed, conformed, consolidated, and calculated data.</p> <p>3. Data Access to specified users.</p> <p>4. Master Data Management (core elements, metadata tagging, business rules, standards, metrics, and tools).</p> <p>5. Data analytics and business intelligence (descriptive, prescriptive, and predictive).</p> <p>6. Identification, development, and maintenance of enterprise data policies.</p> <p>ENTERPRISE CUSTOMER RELATIONSHIP MANAGEMENT (eCRM)</p> <p>The eCRM solution will integrate business processes, supporting systems, and authoritative data in support of Navy Personnel Command's (NPC's) MNCC (My Navy Career Center), Navy Recruiting Command (NRC), Navy Education &amp; Training Command (NETC), and other commands that manage the Navy workforce. The eCRM solution provides an approach to manage information on current and future Sailors, veterans, and their families. The eCRM solution is organized by the following segments:</p> <p>1. Sales Management - recording all stages of the prospecting process to include contact management, leads tracking, forecasting and initial processing.</p> <p>2. Knowledge Management - providing the tools for identifying, capturing, evaluating, retrieving, and sharing information assets.</p> <p>3. Case Management - supporting the automation of processes to formulate opinions, approvals, and fulfillment of case related requests.</p> <p>4. Performance Management- supporting the performance of Navy Sailors.</p> <p>5. Recruiting - eCRM capabilities provide several functions in support of the Navy's recruiting needs, to include:</p> <p>A. Provide personally identifiable information (PII) in a commercial cloud platform.</p> <p>B. Provide ability for users to access mobile platforms.</p> <p>C. Meet Navy Cybersecurity requirements to protect Impact Level (IL) 4 data and will achieve an Authority to Operate (ATO) from the Navy Authorizing Official (NAO).</p> <p>D. Support non-recruiting activities and address case management and knowledge management. Case management functionality supports tracking incidents, and knowledge management provides for sharing and collaborating across various business areas.</p> <p>LEARNING STACK (LS)</p> <p>The Learning Stack will provide a cloud-based material solution that will streamline learning management (course/content delivery and assessments), capture and record interactive learning experiences, enable curriculum authoring and development, provide student Sailor registration and administration, create and regulate course/student scheduling, and offer e-learning capabilities, such as distance learning.</p> <p>The Learning Stack is a delivery vehicle for the following core objectives of the Ready Relevant Learning (RRL) initiative:</p> <p>Learning Management System (LMS) with Assessments - MyNavy Training (MNT)</p> <p>MyNavy Learning (MNL)/Learning Object Repository (LOR)</p> <p>Curriculum Development System (CDS)</p>		



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<p>Student Information System (SIS) Enterprise Resource Scheduler (ERS)</p> <p>The Learning Stack is one of three lines of effort that is the Navy's strategy for IT learning continuum. The other two are RRL content modernization, and the Training Network infrastructure. Collectively, these three individual efforts will cultivate instruction content that meets Fleet validated needs (ashore and afloat), and provide keystone delivery mechanisms that will decrease training timelines, assimilate operational agility, and improve overall mission readiness.</p> <p>Additionally, the Learning Stack supports the MyNavy HR Transformation Program that includes yet expands beyond the RRL core initiatives identified above. In support of the broader MyNavy HR enterprise, the Learning Stack will provide a centralized, authoritative repository for Interactive Multimedia Instruction (IMI) courseware, officer and citizen development (NJROTC and ROTC candidate management), enlisted advancement exam development and distribution, enlisted degree completions, and tuition assistance authorizations.</p> <p>The RRL and MyNavy HR Transformation initiatives require the development of Learning Stack capabilities that permit:</p> <ol style="list-style-type: none"> <li>1. Mobile &amp; flexible delivery of modular training to the Sailor</li> <li>2. Synchronization of work requirements with learning modules to ensure proper training delivery</li> <li>3. Leveraging cloud-hosted capabilities to optimize the Learning Stack delivery model</li> </ol> <p>NAVY PERSONNEL AND PAY (NP2)</p> <p>A 2015 analysis of alternatives for integration of personnel and pay capabilities recommended the use of Oracle PeopleSoft 9.2 with Global Payroll for achieving the Navy's Personnel and Pay IT needs. Follow-on analysis conducted as part of the MyNavy HR Transformation efforts in 2016 and 2017 indicated that the most cost effective approach to achieving the Transformation goals of modernizing HR Business System IT consistent with industry best practices was de-customization of the Navy Standard Integrated Personnel System (NSIPS) which uses Oracle PeopleSoft as its core technology, integration with Global Payroll, use of General Ledger to maximize auditability and accounting functions and hosting of the integrated solution. Navy Personnel and Pay (NP2) will develop and sustain the core system of systems architecture; executing pilot programs and iterative development of capabilities for Navy's MyNavy HR Transformation.</p> <p>The NP2 adapts and reengineers business processes to conform to the technical parameters of PeopleSoft 9.2 while integrating with the Direct to Treasury Pay Capability via Pay Modernization (Pay Mod). This combined effort will result in a minimally-customizable vanilla configured Commercial Off the Shelf, cloud hosted, integrated personnel and pay solution that will provide the Navy with an IT system that is modern, highly automated, auditable, and more efficient.</p> <p>Implementation of NP2 will result in several key benefits:</p> <ol style="list-style-type: none"> <li>1. Improved accuracy and auditability of personnel and pay transactions.</li> <li>2. Treasury Direct Disbursing eliminating Navy reliance on the Defense Joint Military Pay System.</li> <li>3. Improved permeability of Active and Reserve Components to improve accuracy and eliminate delays in pay processing when a member moves between components.</li> <li>4. Increased automation of common personnel and pay transactions</li> <li>5. Integration of functionality currently spread across 55+ different adhoc and outdated HR Business Systems.</li> </ol> <p>SINGLE POINT OF ENTRY (SPOE)</p>		

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<p>SPOE is an integrated, unified capability that includes MyNavy Portal (MNP), Mobile Applications, and Identity, Credential and Access Management (ICAM). It also includes integration with eCRM, NP2, and ADE solutions. SPOE consolidates the Navy's HR portals, knowledge, and applications into a single simplified Sailor experience. Through a multi-phased modernization approach, SPOE provides an intuitive self-service capability for Sailors to view and manage their personnel and career information. It provides Active and Reserve Sailors with personalized interactive experiences and access to relevant information including learning content, HR applications, and career business processes. SPOE forms a foundational capability for the MyNavy Career Center (MNCC) by connecting its portal and ICAM functionality with eCRM. The Navy's strategy for transformation of its MyNavy HR capabilities relies on SPOE as the user-facing capability linking Sailors to modernized personnel and pay capabilities, MyNavy Training (MNT), and ADE.</p> <p>SPOE includes processes, capabilities, and functionalities, such as:</p> <p>1. Integration of capabilities to include: My Navy Portal (MNP), Mobile Applications, CRM solution, and Identity Credential Access Management (ICAM)</p> <p>2. MNP</p> <p>A. Serve as the My NavyHR's single point of entry to Sailors HR resource</p> <p>B. Provide capability to have a low bandwidth version accessible to Sailors operating in a restricted bandwidth environment</p> <p>C. Provide CAC-free access for Sailors accessing MNP via personal devices such as smart phones, tablets, personal laptops and computers.</p> <p>D. Provide solution set for disconnected Operations</p> <p>E. Provide a private portal for Sailors to access personal HR information</p> <p>F. Provide a public presence for access to non- sensitive information.</p> <p>3. ICAM</p> <p>A. Provide authentication and Single Sign-On (SSO) capability for access to the objective MyNavy HR capability.</p> <p>4. Mobility Program</p> <p>A. Maintain the ability to host and manage mobile applications through Apple/iTunes &amp; GooglePlay app stores and host information in MyNavy HR's Navy App Locker website and mobile app. (www.applocker.navy.mil)</p> <p>B. Provide Mobile application management suite/platform and processes for agile development and sustainment of apps' portfolio.</p>								
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Learning Stack (LS)				8.274	12.500	15.185	0.000	15.185
Articles:				-	-	-	-	-
FY 2023 Plans:								
Continued focus on the development, deployment, and integration of Learning Stack capabilities within RRL								
1. Complete MyNavy Training (MNT) Technical Delivery and initial operating capability (IOC) allowing the start of LMS content migration.								

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
2. The Learning Object Repository (LOR) will change and be referred to as the Learning Content Management System (LCMS). This change is a result of additional capabilities that will allow for creation of new content in addition to configuration mgmt and content lifecycle mgmt. In FY23, LCMS will complete its Technical Capabilities Assessment.						
3. Begin development and integration of MNT Afloat/Disconnected Operations Application capability (dependent upon final shipboard and pier-side infrastructure solutions).						
4. Begin developing the Curriculum Data System (CDS) Deploying CDS ensures alignment of Curriculum to the content being modernized (curriculum is the documentation needed to conduct training (Instructor Guides, Course Syllabus, Student Guides). This will support the delivery of modernized content as it expands from Instructor-led training to self-paced training and virtual simulations.						
5. Begin design and initial development of MyNavy Learning (MNL) analytical tools within the Learning Stack to provide the ability to perform predictive analytics.						
6. Begin LOR design and initial development.						
FY 2024 Base Plans:						
Continued focus on the development, deployment, and integration of Learning Stack capabilities into the RRL						
1. Curriculum Data System (CDS) Technical Delivery allowing the start of curriculum data migration.						
2. Begin development of the Student Information System (SIS) to provide the capability to register Student Sailors in courses, track student attendance and course completions, and facilitate grades, transcripts, and assessment results.						
3. MNT Afloat/Disconnect Operations Technical Delivery enabling content delivery shipboard and Pierside.						
4. Learning Content Management System (LCMS - previously referred to as LOR) Technical Delivery to house RRL content objects necessary for course creations/modifications.						
5. Begin development of the Enterprise Resource Scheduler to provide the capability to schedule Student Sailors, Instructors, and electronic equipment needed to conduct training.						
6. Complete Curriculum Data System (CDS) Full Operational Capability (FOC). This will allow the delivery of modernized content as it expands from Instructor-led training to self-paced training and virtual simulations, enabling the shutdown of the AIM (NIPR) legacy system.						
7. Complete LMS content migration to MNT IL4 environment and LRS xAPI integration with MNT LMS components						
8. Achieve MNT (LMS with Assessments) full operating capability (FOC) enabling the shutdown of the legacy LMS-DL system. The MNT capability allows student Sailors the ability to capitalize on features provided in						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
the cloud-based LMS (such as self-paced training via mobile devices) that support the premise of RRL where training at the point of need enables training to come to the Sailors (vice classroom setting). 9. Complete initial technical delivery of MyNavy Learning (MNL) analytical capabilities that evaluate and assess Sailor training/learning.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$2.685M) is driven by the procurement and build out of the cloud environments to house the Learning Content Management System (LCMS) and initiation of Student Information System (SIS) development, as well as procurement of application software required for these efforts.						
<b>Title:</b> Single Point of Entry (SPOE)  <b>Articles:</b>		17.513 -	15.185 -	11.250 -	0.000 -	11.250 -
<b>FY 2023 Plans:</b> Many of these efforts are multiyear development activities that are interdependent on other programs growth and Career Life Event functions for systems that are shutting down. MyNavy Portal is a multi-year effort to support upgrades for sea operations, cyber improvements, and multimedia training capabilities. 1. Design and develop Single Sign-on capabilities to provide Sailors easier access to MyNavy HR systems such NP2, eCRM, Learning Stack, etc. 2. Design, develop and deploy a personalized experience on MyNavy Portal Private Presence (IL4) providing Sailors with quick access to their HR information much in the format of current commercial online banking websites. 3. Deploy MNP Quarterly releases to enhance capabilities for Sailor Self-Service, Personnel and Pay Data, public portals, and private portals: A. Enhance Sailors abilities to conduct HR requirements in capabilities to support Sailors in low-bandwidth and disconnected environments. B. Continue development and integration of portal capabilities for Sailors to manage their careers in an intuitive self-service web environment. C. Perform system consolidations in order to streamline MyNavy HR applications and capabilities.						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>D. Design, develop and deploy MyNavy Public Presence which will provide Sailors with a dynamic and enhanced user experience to access general HR information without the need to login to MNP Private.</p> <p>E. Design, develop and deploy MNP Private which will provide Sailors with easy access to a personalized HR dashboard for Personnel, Pay, Training, Education and other related information.</p> <p>4. Continue integration efforts for My Navy HR programs requiring ICAM user authentication to improve authentication and security procedures.</p> <p>5. Deploy new updates, functionality and/or capability to mobile applications, which serve as key components of self-service capabilities via mobile delivery.</p> <p>6. Develop three new mobile applications; and coordinate with N1 when mobile app strategy gets modified to include expansion of single purpose apps to multi-purpose apps, in support of transactional capabilities and mobile delivery of associated MyNavy HR systems.</p> <p>7. Provide the ICAM Sponsored Access solution to an initial user group, while determining the sponsored access solution for Dependents and former Navy</p> <p>8. Initiate migration of ICAM to an IL4 enterprise solution to maintain cyber accreditation to authenticate users within existing IL4 programs across the MyNavy HR Enterprise.</p> <p><b>FY 2024 Base Plans:</b></p> <p>Many of these efforts are multiyear development activities that are interdependent on other pillar's growth and Career Life Event functions for systems that are shutting down. MyNavy Portal is a multi-year effort to support upgrades for sea operations, cyber improvements, and multimedia training capabilities.</p> <p>1. Deploy Single Sign-on capabilities to provide Sailors easier access to MyNavy HR systems such as NP2, eCRM, Learning Stack, etc.</p> <p>2. Deploy MNP Quarterly releases to enhance capabilities for Sailor Self-Service, Personnel and Pay Data, public portals, and private portals:</p> <p>A. Enhance Sailors abilities to conduct HR requirements in capabilities to support Sailors in low-bandwidth and disconnected environments.</p> <p>B. Continue development and integration of portal capabilities for Sailors to manage their careers in an intuitive self-service web environment.</p> <p>C. Perform system consolidations in order to streamline MyNavy HR applications and capabilities.</p>						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>D. Design, develop and deploy MyNavy Public (IL2) Presence which will provide Sailors with a dynamic and enhanced user experience to access general HR information without the need to login to MNP Private.</p> <p>E. Design, develop and deploy MNP Private which will provide Sailors with easy access to a personalized HR dashboard for Personnel, Pay, Training, Education and other related information.</p> <p>F. Perform Navy HR website consolidations in order to streamline MyNavy HR applications</p> <p>3. Continue integration efforts for MyNavy HR programs that require ICAM functionality for improved authentication and security.</p> <p>4. Deploy new updates, functionality, and capability enhancements to mobile applications.</p> <p>5. Develop at least three new mobile applications and 20 app updates.</p> <p>6. Deliver Sponsored Access for Dependents and Former navy.</p> <p>7. Complete ICAM migration to IL4 with associated cyber accreditations across the MyNavy HR Enterprise to ensure continued access and user authentication.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$3.935M) reflects elements of MyNavy Portal and ICAM transitions to sustainment.</p>						
<p><b>Title:</b> Enterprise Customer Relationship Management (eCRM)</p> <p><b>Articles:</b></p> <p><b>FY 2023 Plans:</b> Pursuant to the Chief of Naval Operations 'First Day Letter' to the Chief of Naval Personnel, eCRM FY23 base plans pivoted to reflect Navy's immediate need for mobile and afloat Salesforce technology integration. This prioritization increases the efficiency of the recruitment workforce interactions with their accessions audience and eliminates physical limitations imposed by the desktop version.</p> <p>1. Develop and deploy a comprehensive back-up and restore solution for the eCRM pillar to minimize the risk of data loss should data be inadvertently lost or corrupt.</p> <p>2. Deploy Salesforce Mobile Application Full Operating Capability to enable Recruiters to have on-the-go access to the full Applicant Relationship Management (ARM) system that is available within the desktop solution.</p> <p>3. Redesign and deploy interim fixes to integrate common functionality across the Human Resources Service Center (HRSC) / Personnel and Pay (PERSPAY) applications to resolve integration issues between the two applications, improve performance, and increase functionality related to customer service and sailor pay.</p>		27.543 -	15.815 -	16.127 -	0.000 -	16.127 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>4. Define requirements, develop and deploy interim and enduring solutions to support operations in a disconnected, degraded or limited bandwidth environments for afloat units.</p> <p>5. Develop and deploy Salesforce Maps capability to allow Recruiters digital geospatial data analysis and optimal travel routing functionality.</p> <p>6. Define requirements, develop, and deploy Salesforce Digital Engagement within the Applicant Relationship Management (ARM) system to allow NRC Recruiters to send, store, and track texts between Recruiters and potential Leads through the Salesforce interface.</p> <p>7. Define requirements and begin development for the National Advertising and Leads Tracking System (NALTS) migration into the eCRM platform to modernize Leads development &amp; processing capabilities resulting in enhanced recruiting performance.</p> <p>8. Define requirements and begin development of the redesign for MyNavy Career Center (MNCC) capabilities (HRCS and PERSPAY) to streamline operations, improve workflows and provide better customer service to sailor and their families.</p> <p><b>FY 2024 Base Plans:</b></p> <p>1. Develop and deploy Physical Readiness Information Management System 2 enhancements to incorporate emerging requirements for physical readiness testing.</p> <p>2. Deploy the National Advertising and Leads Tracking System (NALTS) migration into the eCRM platform to modernize Leads development &amp; processing capabilities resulting in enhanced recruiting performance.</p> <p>3. Define requirements, develop, and deploy of Navy's Credentialing, Apprenticeships, and Voluntary Education (CAVE) into the eCRM platform to help sailors more easily pursue professional development goals and objectives..</p> <p>4. Define requirements, develop, and deploy of NRCs Virtual Recruit Tracker capability into the eCRM platform.</p> <p>5. Define requirements, develop, and deploy of Navy's Voluntary Education (VOLED) program into the eCRM platform</p> <p>6. Continue the development of the redesign for MyNavy Career Center (MNCC) capabilities (HRCS and PERSPAY) to streamline operations, improve workflows and provide better customer service to sailor and their families.</p> <p><b>FY 2024 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></p>							

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY24 increase (\$0.312M) for capability build of CAVE VOLED and continued redesign of MNCC capabilities.					
Title: Navy Personnel and Pay (NP2)					
Articles:					
FY 2023 Plans:					
FY23 efforts focus on achieving a configured functional module for comprehensive testing provided by the Developer to pay Active and Reserve Components (AC/RC). Additionally, system requirements will be initiated for Personnel capabilities to include Orders / Transfers; Personnel Management; Organizational Management; and Distribution Lines of Business:					
1) Continue NP2 payroll validation activities.					
2) Continue to analyze, develop, and test data integrations necessary to support business process re-engineering functions and capabilities required to keep legacy systems operational as incremental NP2 Releases are deployed.					
3) Complete NP2 configured functional module to support integrated testing and DOTMLPF activities.					
4) Support DOTMLP-F functional end user testing.					
5) Continue Interoperability Certification and SFIS Assessment planning with Joint Interoperability Test Command (JITC) to obtain Interim Certificate to Operate (ICTO) for Initial NP2 Release.					
6) Continue Developmental Test (DT) Assist events and Quarterly Reviews with Naval Command Operational Test & Evaluation Force (COTF)					
7) Begin System End-to-End Testing for Initial NP2 Release.					
8) Continue deployment planning for Initial NP2 Release.					
9) Program Increment Releases (PI) for the NP2 configured functional module (Hire to Retire functionality).					
FY 2024 Base Plans:					
Efforts in FY24 focus on comprehensive testing of the configured functional modules for IOC while transitioning to the configuration and development of additional MyNavy HR Personnel functions into NP2 in support of achieving Full Operational Capability (FOC) in the out-years. System requirements will be addressed for Personnel capabilities in support of the Navy's MyNavy HR IT Transformation initiative, to include Orders / Transfers, Personnel Management; Organizational Management; Fleet & Family Support; and Assignments & Distribution Lines of Business as identified in the MyNavy HR Portfolio Analysis Plan.					



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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2905 / BUPERS IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
1.) Continue NP2 deployment planning on additional configured functional modules to include Hire to Retire processes and functionalities to Pay Sailors and to meet audit requirements and other Navy directives 2.) Support the continuation of DOTMLP-F functional end user testing. 3.) Continue System End-to-End Testing for Initial NP2 Release for IOC. 4.) Conduct defect remediation and usability refinement activities resulting from on-going NP2 configured functional module testing. 5) Continue Interoperability Certification and SFIS Assessment planning with Joint Interoperability Test Command (JITC) to obtain Interim Certificate to Operate (ICTO) for Initial NP2 Release. 6) Continue Developmental Test (DT) Assist events and Quarterly Reviews with Naval Command Operational Test & Evaluation Force (COTF) 7.) Begin planning to support Operational Test Readiness Review (OTRR) with Director, Operational Test and Evaluation (DOT&E). 8.) Begin design, development, integration and testing sprints for Personnel capabilities under the Orders/ Transfers, Personnel Management; Organizational Management; Fleet & Family Support; and Assignments & Distribution Lines of Business. 9.) Support audit readiness activities to achieve reliable, accurate, and complete financial data for use in key management decisions and Financial Improvement and Audit Readiness (FIAR) compliance. 10.) Conduct Continuous Monitoring SETR through Technical Interchange Meetings (TIMs) with Technical Warrant Holders (TWHs) each Program Increment and regular recurring IPRs with Resource Sponsor and other stakeholders.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$8.468M) attributed to deployment of pay and shift to design stage of next phases of NP2 (personnel consolidation).						
Title: Authoritative Data Environment (ADE)  Articles:		22.652 -	23.300 -	24.997 -	0.000 -	24.997 -
FY 2023 Plans: 1. Perform the development, API construction, data transport efforts, engineering, archiving, and program activities necessary to support the migration of the following capabilities into the ADE environment: Navy Training Management and Planning System (NTMPS) including Supply Chain data models/dashboards						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2905 / BUPERS IT		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Navy Manpower Program and Budget System (NMPBS) Navy Manpower Requirements System (NMRS) Navy Personnel Database (NPDB) Web Standardized Territory Evaluation and Analysis for Management (WebSTEAM) Learning Assessment System (LAS) - Unclassified Academic Institution Module (AIM) - Unclassified 2. Perform the development, API construction, and data transport efforts that are necessary to continue the migration of the Corporate Enterprise Training Activity Resource System (CETARS). 3. Complete migration of Fleet Training Management and Planning System (FLTMPS) capability into the ADE environment. 4. Continue development of Minimum Viable Products (MVPs) delivering enhanced modeling tools as well as predictive & prescriptive analytic dashboards that will deliver decision-support capabilities to calculate Total Force Manpower Requirements. 5. The Commanders Risk Mitigation Dashboard (CRMD) will reach full operating capability (FOC). At FOC, CRMD will provide fleet wide access with quarterly risk scores and one quarter of predictive scores. The dashboard has been updated, models have been optimized, data is refreshed bi-monthly and account creation for commanders has been automated.  <b>FY 2024 Base Plans:</b> 1. Perform the development, API construction, data transport, engineering, archiving, and program activities necessary to support migration of the following capabilities into the ADE environment (and support future sunset of the associated legacy systems): Navy Manpower Program and Budget System (NMPBS) Navy Personnel Database (NPDB) Shore Manpower Requirements Determination (SMRD) Officer Assignment Information System II (OAIS II) Corporate Enterprise Training Activity Resource System (CETARS) Personnel Tempo (PERSTEMPO) Personalized Recruiting for Immediate and Delayed Enlistment Modernization (PRIDEMOD) My Education 2. Continue development of Minimum Viable Products (MVPs) delivering enhanced modeling tools as well as predictive & prescriptive analytic dashboards that will deliver decision-support capabilities to calculate Total Force Manpower Requirements.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development			Project (Number/Name) 2905 / BUPERS IT				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
3. Begin the development and accreditation of a classified ADE environment in IL6 to support the migration of classified systems and data within the MyNavy HR Portfolio.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase (\$1.697M) supports the development of a classified ADE environment in IL6. The new classified system will support the migration, sunset, and shutdown of existing MyNavyHR classified systems, including but not limited to LAS, AIM, NRDW and TFMMS. Funding also supports functional migration of the Shore Manpower Requirements Determination (SRMD) into ADE.											
Accomplishments/Planned Programs Subtotals							135.110	145.401	137.692	0.000	137.692
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OMN / 3B4K: Training Support	18.889	20.782	23.532	-	23.532	24.124	0.307	0.237	0.244	0.000	125.419
• OMN / 4A4M: Military Manpower and Personnel Mgmt	170.301	182.187	248.020	-	248.020	274.286	35.483	33.226	33.989	0.000	1,249.665
• OMNR / 4A4M: Military Manpower and Personnel Mgmt	2.546	2.518	2.603	-	2.603	0.000	0.000	0.000	0.000	0.000	10.312
• OMN / 1C1C: Combat Communications and Electronic Warfare (CIVPERS)	6.525	7.265	7.854	-	7.854	7.282	0.000	0.000	0.000	0.000	41.783
Remarks											
MyNavy HR Transformation is not just a technology refresh of existing systems, Transformation is a holistic change to how MyNavy HR Services are provided. Simultaneous functional investment (O&M,N) in business processes re-engineering and acquisition investment (RDT&E) in IT is critical to increase quality, auditability, efficiency and overall personnel readiness to meet Navy readiness needs - both current and future.											
1. OMN / 3B4K is required to support the sustainment costs associated with delivering a non-CAC Identity and Access Management (IdAM) capability across the MyNavy HR Enterprise that provides authentication, authorization and single sign on for access to the objective MPT&E capability. Additionally, to provide the ability to host and manage mobile applications developed through the Navy App Locker (past, present and future). In addition, continued operations and sustainment for the LS Transformation effort to acquire Software as a Service (SaaS) subscriptions, required interface maintenance with legacy systems; in addition to hosting N1 learning											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2905 / BUPERS IT			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
applications within the cloud environment. Lastly, Sustainment of SPOE system functionality to include additional Career Life Events, Mobile Applications, MNP Public Portal, and the credentialed identities of a larger user population which requires additional ICAM licenses											
2. OMN / 4A4M This Budget Activity consists of costs required to support both the functional and acquisition requirements (in parallel with development of technology) to holistically transform and deliver an effective modernized IT Solution. These efforts include requirements generation, business process re-engineering, change and risk management.											
3. OMN / 1C1C is for Civilian Labor Salaries / costs to support MyNavy HR Transformation											
4. OMNR / 4A4M is required to support IT Scaffolding of legacy IT Systems. Scaffolding is "throw-away" development required for transformation and the execution of the 55:1 Shutdown Plan. Due to the change in plan and moving towards a functional (vs. System) shutdown approach drives the need for IT Scaffolding as portions of IT system capabilities are retired.											
D. Acquisition Strategy											
Each MyNavy HR pillar follows a progression of piloting activities to development of a Minimal Viable Product (MVP). Once an MVP is developed and is ready to be hardened to a production capability, the pillar employs the MyNavy HR Transformation System Integrator contract to ingest the MVP into an integrated technical baseline.											
AUTHORITATIVE DATA ENVIRONMENT											
The required services are currently procured through a Cost Plus Fixed Fee (CPFF) task order awarded on a sole source contract for MyNavy HR PMW 240 enterprise services. A follow-on will be awarded in FY24.											
ENTERPRISE CUSTOMER RELATIONSHIP MANAGEMENT (eCRM)											
The migration concluded in February 2021 and transitioned to a small business 8a in spring of 2022 for the duration of the program's research, development, test, evaluation, and sustainment.											
LEARNING STACK (LS)											
Use existing Government Wide Acquisition Contracts or competitive contract for any new product sourcing, use existing Bi-Service PeopleSoft licenses, Indefinite Delivery/Indefinite Quantity contract vehicles within PMW 240 for additional design and integration services. Leverage the Interagency Agreement for an Assisted Acquisition with the Office of Personnel Management's USA Learning program.											
NAVY PERSONNEL AND PAY SYSTEM (NP2)											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
1319 / 5	PE 0605013N / Information Technology Development	2905 / BUPERS IT
<p>NP2 will incrementally implement Navy's personnel and pay modernization strategy using a variety of Indefinite Delivery/Indefinite Quantity contract Task Orders within MyNavy HR IT Solutions (PMW 240) for development and integration services.</p> <p>SINGLE POINT OF ENTRY (SPOE)</p> <p>The required services will be procured through a Cost Plus Fixed Fee (CPFF) sole source small business, Alaska Native Contract (ANC) 8 (a) contract.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2905 / BUPERS IT					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Learning Stack (LS)	C/CPFF	CACI : Pensacola, FL	23.800	2.500	May 2022	4.000	May 2023	6.340	May 2024	-		6.340	Continuing	Continuing	Continuing
MNP/SPOE	C/CPFF	Katmai : Arlington, VA	78.888	13.000	Dec 2021	11.000	Dec 2022	10.250	Dec 2023	-		10.250	Continuing	Continuing	Continuing
AOA Design, Development, Test & Deployment	C/CPFF	GDIT : New Orleans, LA	1.792	0.000		0.000		0.000		-		0.000	0.000	1.792	Continuing
NP2 Rapid Prototype Pilot	C/CPFF	Nakupuna : Washington, DC	37.872	0.000		0.000		0.000		-		0.000	0.000	37.872	Continuing
RMI SPM Development	C/CPFF	Kapsuun : Arlington, VA	17.239	0.000		0.000		0.000		-		0.000	0.000	17.239	Continuing
ADE + Data Analytics	C/CPFF	GDIT : Washington, D.C.	34.256	8.500	May 2022	14.500	May 2023	19.250	May 2024	-		19.250	Continuing	Continuing	Continuing
Portfolio System Integrator/Transformation Portfolio Coordinator and Production	C/IDIQ	NWCF, Falconwood : Chantilly, VA	64.146	57.110	Nov 2021	62.393	Nov 2022	46.616	Nov 2023	-		46.616	Continuing	Continuing	Continuing
eCRM Pilot	C/IDDQ	Katmai : Mclean, VA	34.974	7.615	Feb 2022	7.620	Feb 2023	8.324	Feb 2024	-		8.324	Continuing	Continuing	Continuing
NP2 Transformation	C/IDIQ	Nakupuna : Chantilly, VA	68.411	28.000	Oct 2021	45.500	Oct 2022	46.500	Oct 2023	-		46.500	Continuing	Continuing	Continuing
Subtotal			361.378	116.725		145.013		137.280		-		137.280	Continuing	Continuing	N/A
Remarks															
The Transformation Portfolio Coordinator & Production (TPC&P) is shifting to a strategy where integration efforts are managed by a Portfolio System Integrator (gov't function). The Portfolio Systems Integrator will deliver a family of systems in support of MyNavy HR Transformation.															
Authoritative Data Environment (ADE) - \$4.75M of the ADE increase is attributed to migration of Shore Manpower Requirements Determination to enhance analytical modeling and dashboards.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2905 / BUPERS IT					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
eCRM SAAS	C/IDIQ	Carahsoft : San Francisco, CA	21.880	18.000	Jan 2022	0.000		0.000		-		0.000	0.000	39.880	-
NSIPS Bi-Service License	C/CPFF	Oracle : Redwood City, CA	20.700	0.000		0.000		0.000		-		0.000	0.000	20.700	-
Subtotal			42.580	18.000		0.000		0.000		-		0.000	0.000	60.580	N/A
Remarks															
Piloting efforts for the MyNavy Career Center (MNCC) have completed and the Call Centers (Millington, TN and Little Creek, VA) are operational and utilizing the Salesforce applications in their day to day operations. As a result, the use of the SaaS product is now considered to be in full sustainment and the cost of the eCRM licenses have shifted to O&M,N beginning in FY23. Due to its transition to sustainment, the funding for the SaaS product have shifted to NP2 to support the continued product development, testing and integration of a modernized pay solution; as well as the buildout of analytic modeling and dashboard capabilities															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	C/FFP	COMOPTEVFOR : Arlington, VA	0.383	0.385	Dec 2021	0.388	Dec 2022	0.412	Dec 2023	-		0.412	Continuing	Continuing	Continuing
Subtotal			0.383	0.385		0.388		0.412		-		0.412	Continuing	Continuing	N/A
Remarks															
With the exception of NP2, programs are all either abbreviated acquisition programs or non-designated projects and do not require Independent Operational Test Evaluation (IOTE). Testing is performed in accordance with approved test plans by the business owners.															
NP2: Testing is for technical and analytical support to 'Commander, Operational Test and Evaluation Force' (COMOPTEVFOR) in the definition, conduct and analysis of structured Initial Operational Test and Evaluation (IOT&E) of NP2															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			404.341	135.110		145.401		137.692		-		137.692	Continuing	Continuing	N/A
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

<b>Date:</b> March 2023
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R-1 Program Element (Number/Name)	Program Element Description	Program Element Status	Program Element Comments

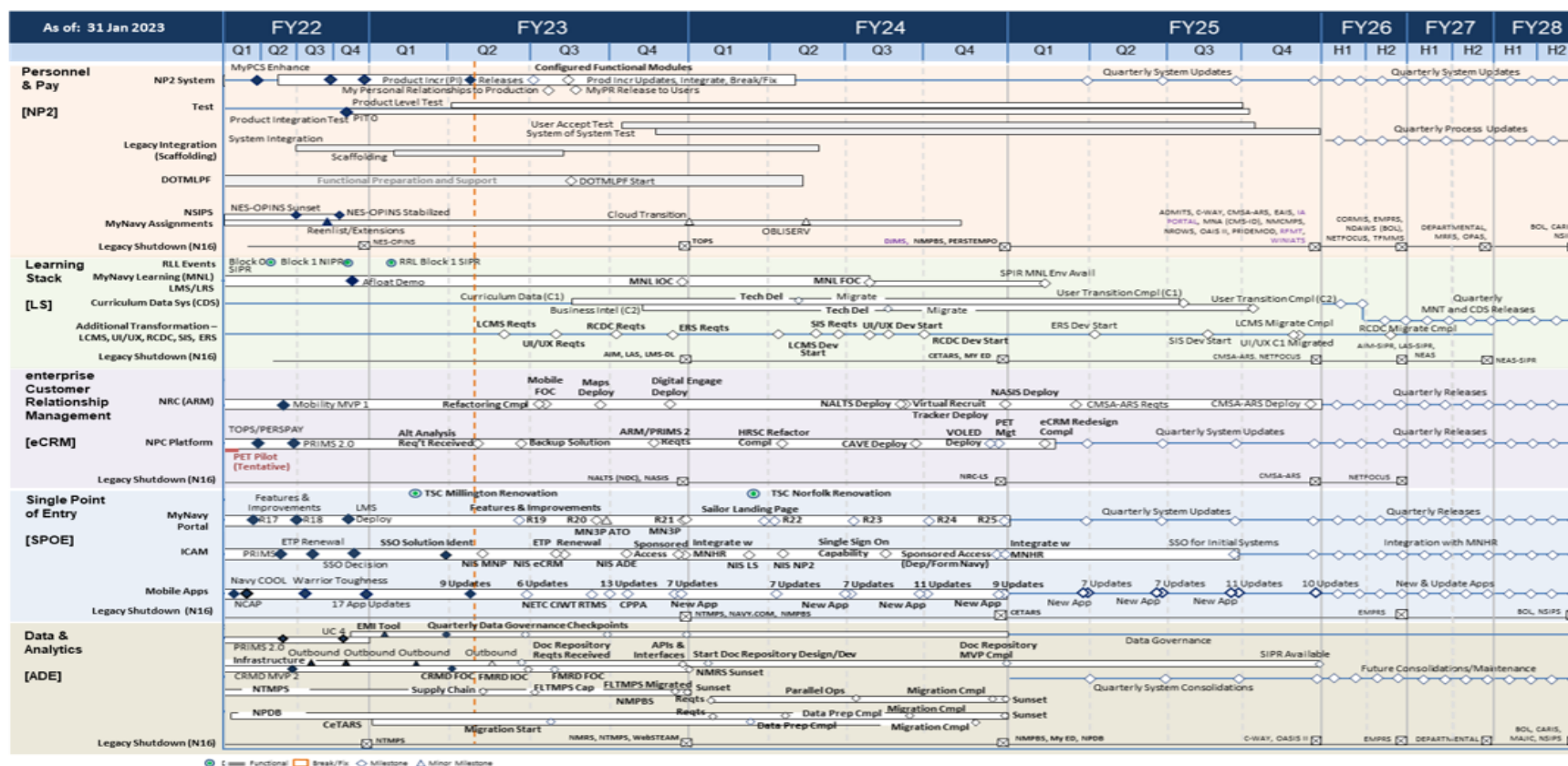
PE 0605013N / Information Technology Development

Project (Number/Name)	Start Date	End Date	Duration (Days)	Team Lead	Status	Progress (%)	Budget (USD)	Actual Cost (USD)	Variance (USD)	Risk Level	Notes
101	2023-01-01	2023-03-31	90	John Doe	Completed	100	15000	14800	200	Low	Project completed ahead of schedule.
102	2023-02-01	2023-05-31	120	Jane Smith	In Progress	75	20000	21000	-1000	Medium	Minor budget overrun, on track for completion.
103	2023-03-01	2023-06-30	120	Mike Johnson	On Hold	20	18000	18000	0	High	Project paused due to resource allocation.
104	2023-04-01	2023-07-31	120	Sarah Lee	Planned	0	22000	22000	0	Medium	Project planning phase.
105	2023-05-01	2023-08-31	120	David Kim	On Hold	10	19000	19000	0	Low	Project paused due to budget review.
106	2023-06-01	2023-09-30	120	Emily White	Planned	0	21000	21000	0	Medium	Project planning phase.
107	2023-07-01	2023-10-31	120	Chris Brown	On Hold	5	20000	20000	0	High	Project paused due to strategic review.
108	2023-08-01	2023-11-30	120	Alex Green	Planned	0	23000	23000	0	Medium	Project planning phase.
109	2023-09-01	2023-12-31	120	Olivia Black	On Hold	0	17000	17000	0	Low	Project paused due to resource allocation.
110	2023-10-01	2024-01-31	120	Noah Grey	Planned	0	24000	24000	0	Medium	Project planning phase.
111	2023-11-01	2024-02-28	118	Isabella Blue	On Hold	0	16000	16000	0	Low	Project paused due to budget review.
112	2023-12-01	2024-03-31	120	Liam Red	Planned	0	25000	25000	0	Medium	Project planning phase.
113	2024-01-01	2024-04-30	120	Mia Yellow	On Hold	0	18000	18000	0	Low	Project paused due to resource allocation.
114	2024-02-01	2024-05-31	120	Benjamin Purple	Planned	0	26000	26000	0	Medium	Project planning phase.
115	2024-03-01	2024-06-30	120	Charlotte Pink	On Hold	0	19000	19000	0	Low	Project paused due to budget review.
116	2024-04-01	2024-07-31	120	Ethan Orange	Planned	0	27000	27000	0	Medium	Project planning phase.
117	2024-05-01	2024-08-31	120	Ava Teal	On Hold	0	20000	20000	0	Low	Project paused due to resource allocation.
118	2024-06-01	2024-09-30	120	Lucas Silver	Planned	0	28000	28000	0	Medium	Project planning phase.
119	2024-07-01	2024-10-31	120	Sophia Gold	On Hold	0	21000	21000	0	Low	Project paused due to budget review.
120	2024-08-01	2024-11-30	120	Mason Bronze	Planned	0	29000	29000	0	Medium	Project planning phase.

2905 / BUPERS IT



## MyNAVY HR Transformation IT Services Executive View





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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2905 / BUPERS IT

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2905.L39</b>				
Learning Stack: Curriculum Data System (CDS) Initial Deployment	2	2024	2	2024
Learning Stack: Curriculum Data System (CDS) Tech Delivery	1	2024	1	2024
Learning Stack: Curriculum Data System (CDS) Full Deployment	4	2024	4	2024
Learning Stack: Curriculum Delivery System (CDS) Integration	3	2023	3	2023
Learning Stack: CDS IL6 Accredited IL6 Cloud hosting	2	2024	2	2024
Learning Stack: MyNavy HR Transformation (LS) 55 to 1 System Shutdown	3	2022	4	2026
Learning Stack: MyNavy Training ADO Development	2	2023	2	2023
Learning Stack: MyNavy Training ADO Tech Delivery	4	2024	4	2024
Learning Stack: CDS IL6 Deployment	2	2025	2	2025
Learning Stack: Student Information System (SIS) Development	2	2024	2	2024
Learning Stack: Student Information System (SIS) Initial Deployment	2	2025	2	2025
Learning Stack: Enterprise Resource Scheduler initial Deployment	3	2025	3	2025
Learning Stack: Enterprise Resource Scheduler Full Deployment	1	2026	1	2026
Learning Stack: Student Information System (SIS) Quarterly Releases	2	2026	4	2027
Learning Stack: Student Information System (SIS) Full Deployment	1	2026	1	2026
Learning Stack: Learning Content Management System (LCMS) Development	4	2023	3	2024
Learning Stack: Learning Content Management System (LCMS) Tech Delivery	3	2024	3	2024
Learning Stack: Learning Content Management System (LCMS) IL4 Limited Deployment	1	2025	1	2025
Learning Stack: Learning Content Management System (LCMS) IL4 Full Deployment	4	2025	4	2025
Learning Stack: Enterprise Resource Scheduler (ERS) Development Start	3	2024	3	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2905 / BUPERS IT	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Learning Stack: Enterprise Resource Scheduler (ERS) Development IOC	2	2025	2	2025
Learning Stack: Initiate xAPI Dictionary Integration	1	2022	2	2023
Learning Stack: LMS / LAS / LRS Afloat Analysis	1	2022	1	2022
Learning Stack: LMS / LAS / LRS Quarterly System Update	3	2023	4	2027
Learning Stack: MyNavy Training (MNT) w/ assessment initial capability	4	2023	4	2023
Learning Stack: MyNavy Training (MNT) w/ assessment full capability	3	2024	3	2024
Learning Stack: Disconnected Operations Pilot	1	2023	4	2024
Learning Stack: Create MVP Reserve Officer Training (ROTC) and Naval Junior Officer Reserve Training Corps (NJROTC)	1	2025	4	2026
Learning Stack: Deploy Reserve Officer Training Corps (ROTC) and Naval Junior Officer Reserve Training Corps (NJROTC) Candidate Management initial capabilities [ROTC & JROTC Candidate Mgt IOC]	4	2026	1	2027
Learning Stack: Management Information System - JST, USMAP and NCMIS initial capability {MyEducation IOC}	1	2027	3	2027
Learning Stack: Navy College Management Information System - JST, USMAP and NCMIS full capability {MyEducation FOC}	2	2028	2	2028
NAVY PERSONNEL AND PAY (NP2)				
NP2: Debts & Collections, Vendor Interfaces, Performance and Career Path MVPs	1	2022	1	2022
NP2: PCS Travel Expenses, Reserve Activities, Separations and Job History Conversion MVPs	1	2022	1	2022
NP2: Finance, Payroll Reporting, Enroute Orders and Miscellaneous Conversion MVPs	1	2022	1	2022
Personnel Capability Drop	1	2022	1	2022
NP2 Capability Area Development Complete 1	3	2022	3	2022
NP2 Capability Area Development Complete 2	4	2022	4	2022
NP2 Capability Area Development Complete 3	1	2023	1	2023
NP2 Product Increment (PI) 1	2	2023	2	2023
NP2 Product Increment (PI) 2	3	2023	3	2023

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2905 / BUPERS IT

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
System Configuration Complete	1	2022	2	2023
NP2 Configured Functional Module	3	2023	3	2023
NP2: Continuous Monitoring - Quarterly Systems Engineering Technical Reviews	3	2022	4	2028
NP2: Integration and Testing	1	2023	4	2023
NP2: Integration and Testing: TDD / GEX I/F Test	1	2022	1	2022
NP2: Integration and Testing: Product Level Testing	1	2023	4	2025
NP2: Integration and Testing: Product Integration Testing	4	2022	4	2025
NP2: System of System Testing	4	2023	4	2025
NP2: User Accept Test	4	2025	4	2025
NP2 Training Materials	3	2023	3	2023
Core Pay Validation 1	1	2022	1	2022
Core Pay Validation 2	2	2022	2	2022
Core Pay Validation 3	2	2022	2	2022
NP2 Mock Pay Validation 1	3	2022	3	2022
Mock Pay Validation 2	3	2022	3	2022
Mock Pay Validation 3	3	2022	3	2022
Mock Pay Validation 4	4	2022	4	2022
Mock Pay Validation 5	4	2022	4	2022
Mock Pay Validation 6	4	2022	4	2022
Mock Pay Validation 7	1	2023	1	2023
NP2: Deploy NES / OPINS	2	2022	2	2022
NP2: MyNavy HR Transformation 55 to 1 System Shutdown	1	2022	4	2028
NP2: Conduct SFIS Assessment	1	2023	4	2023
NP2: Conduct Operational Test Readiness Review	2	2024	2	2024
NP2: Order Writing/Transfers Design/Development	1	2024	3	2024

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2905 / BUPERS IT

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NP2: Order Writing/Transfers Integration and Testing	4	2024	4	2024
NP2: Advancements and Promotions Design/Development	1	2025	3	2025
NP2: Advancements and Promotions Integration and Testing	4	2025	4	2025
NP2: Advancements and Promotions Deployment	4	2026	4	2026
NP2: Manpower Design/Development	4	2027	4	2027
<b>Authoritative Data Environment (ADE)</b>				
ADE 2.0 IOC (API Enterprise)	2	2022	2	2022
ADE 2.0 NTMPS Migration	4	2022	4	2023
ADE 2.0 NPDB Migration	3	2022	4	2024
ADE 2.0 CETARS Migration	3	2022	4	2024
Commanders Risk Mitigation Dashboard Initial Deployment	4	2022	4	2022
Schedule DetailCommanders Risk Mitigation Dashboard Full Deployment	1	2023	1	2023
Fleet Manpower Requirements Dashboard MVP	4	2022	4	2022
Fleet Manpower Requirements Dashboard Full Deployment	3	2023	3	2023
ADE 2.0 Capability Drops NMRS, NTMPS. WEBSTEAM	1	2022	3	2023
Sunset NTMPS	4	2022	4	2023
ADE 2.0 Capability Drops NMPBS, NPDB, SMRD, OAIS II, PERSTEMPO, PRIDEMOD, MY EDUCATION	1	2022	3	2024
Predictive Dashboard	3	2022	4	2025
<b>Enterprise Customer Relationship Management (eCRM)</b>				
ARM Quarterly Updates	1	2022	4	2026
MyNavy HR Transformation (eCRM) 55 to 1 System Shutdown	1	2022	4	2026
Integrate MNCC/eCRM TOPS	1	2022	1	2022
Integrate MNCC/eCRM CAVE-VOLED	4	2024	4	2024
Integrate MNCC/eCRM N-17 H-EO	4	2022	4	2022
Migrate MNCC/eCRM NASIS	1	2022	4	2023

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2905 / BUPERS IT

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Salesforce Mobile Apps	2	2023	2	2023
Salesforce Maps Deployed	3	2023	3	2023
Integrate MNCC/eCRM Physical Readiness Information Management System Capability	2	2022	2	2022
Physical Readiness Information Cont. Enhancements	3	2023	3	2023
Begin Development of NRC Virtual Recruiter Tracker	3	2024	3	2024
Complete NRC Case Management Implementation	3	2023	1	2024
Digital Engagement	2	2024	2	2024
National Advertising Leads Tracking System Integration	2	2023	4	2023
National Advertising Leads Tracking System Deploy	1	2024	1	2024
National Advertising Leads Credentialing, Appren, & Coluntary Education (CAVE)	3	2023	3	2023
NRC Legal Services Integration	1	2024	3	2024
<b>Single Point of Entry (SPOE)</b>				
MNCC FOC	4	2022	4	2022
MNCC Updates	1	2022	4	2025
MNP Quarterly Updates	1	2022	4	2025
Mobile Apps Deployment and Updates	1	2022	1	2025
ICAM Deployment and Updates	1	2022	1	2025
Sunset NMPDS	4	2023	4	2023
Sunset NTMPS	4	2023	4	2023
Sunset NSIPS	4	2027	4	2027
Legacy Website / Portal Consolidation	1	2022	2	2023
ICAM SSO Decision/SA Solution	4	2022	4	2022
ICAM Integrate w/HR	1	2023	1	2023
ICAM SSO Solution Determined	1	2023	1	2023
Achieve MNP/ICAM Single Sign-On Sponsored Access	4	2024	4	2024

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**Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

### R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2905 / BUPERS IT

Events by Sub Project	Quarter	Year	Quarter	Year
ICAM Integrate MNHR	4	2023	4	2023
MNP LMS Deploy	1	2023	1	2023
MNP Quarterly Releases	1	2023	4	2028
MNP Sponsored Access	2	2024	2	2024
MNP Single Sign On	3	2024	3	2024
MNP FOC	4	2024	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2953 / Model Based Product Support (MBPS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2953: Model Based Product Support (MBPS)	0.000	0.000	10.817	20.532	-	20.532	0.334	0.318	0.290	0.296	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

MODEL BASED PRODUCT SUPPORT (MBPS) - Is the maritime component of Navy Product Lifecycle Management (PLM):

As supported by PEO MLB, Logistics Information Technology (LOG-IT) modernization will provide the capability of performing integrated, real-time, data driven operational and shore logistics thru an integrated infrastructure comprised of three basic and interdependent product lines, Navy PLM, Navy Supply Chain Management (SCM) and Navy Maintenance, Repair and Overhaul (MRO) lines of effort which enable warfighter readiness. LOG-IT systems must be able to operate in disconnected environments with modern, cyber-secure and auditable systems that compress the Kill Chain. The MBPS program is major authoritative data source for LOG-IT. The MBPS program modernizes ship / submarine readiness modeling, technical data management, and configuration management IT systems to enable advanced digital twin and readiness analytics capabilities. MBPS provides capability to migrate legacy LOG IT applications into an integrated Navy Product Life-Cycle Management (N-PLM) environment to include both maritime and aviation support. It will be hosted in a Government-approved commercial cloud environment and used on a 24/7 basis by over 200,000 personnel assigned to 286 ships/submarines, all aircraft and over 700 shore-based activities, impacting a yearly \$6.5B investment in product sustainment.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Model Based Product Support (MBPS)	0.000	10.817	20.532	0.000	20.532
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> FY23 RDTEN funding is required to deploy the seventh LD (Limited Deployment) for MBPS to include Integrated Training delivery, unclassified naval nuclear propulsion information (U-NNPI) hosting environment (impact level 5 ATO achieved), provide provisioning capability and sunset of the Interactive Computer Aided Provisioning System (ICAPS). Begin development of the eighth LD (Limited Deployment)for MBPS to release the Navy Common Readiness Modeling capability, this provides the integrated solution for predictive analytics, reporting, and optimization of weapon system readiness and O&S cost throughout the life cycle.					
<b>FY 2024 Base Plans:</b> The N-PLM program support for maritime under MBPS modernizes ship / submarine readiness modeling, technical data management, and configuration management IT systems to enable advanced digital twin and readiness analytics capabilities. This additional configuration is for added capability directed by ASN RDA in support of OPNAV N4 Digital Transformation to migrate 200+ legacy LOG IT applications into an integrated Navy Product Life-Cycle Management (PLM) environment with MBPS being the maritime component of					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2953 / Model Based Product Support (MBPS)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
NPLM. Replacement of additional legacy systems enables reinvestment in additional capabilities. Legacy capabilities are no longer supportable within future environments due to technological and cybersecurity advancements and do not meet requirements for future enhanced digital capability. Classified environment is necessary to support recent NC3 mandate. Transition to a single Naval PLM environment has been directed by ASN RDA and enables reinvestment in additional capability. Investment in N-PLM solution reduces duplicative functionality, infrastructure and associated IT sustainment costs thru rationalization of existing LOG IT applications into single integrated Navy PLM environment. Provides warfighter with improved process efficiencies, enhanced data analytics capability and predictive analytical tools to more effectively model/predict system and platform readiness in real time to rapidly prioritize resources to support changing mission requirements. FY24 funding is required to support engineering assessment of legacy business processes, applications, interfaces and cybersecurity requirements in to award capability development on Other Transaction Authority to sunset Resource replacement of additional N4-directed legacy systems for Outfitting Requisition Control and Accounting System, Program support data Automated Reporting and Tracking System, Real-time Outfitting Management Information System-Material Management Support, Budget Planning System (ORCAS, PARTS, ROMIS-MMS, BPS) applications in FY25.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase (\$9.715M) is required to award an Other Transaction Authority (OTA) that resources the competitive prototyping for a single Product Lifecycle Management (PLM) (maritime, aviation, ground) and resources the replacement of additional N4-directed legacy Logistics Information Technology (LOG IT) systems for Planned Maintenance, Modernization Planning, and Operational Availability reporting. This increase will result in the continued sunset of legacy LOG IT applications in FY25 to Outfitting Requisition Control and Accounting System, Program support data Automated Reporting and Tracking System, Real-time Outfitting Management Information System-Material Management Support, Budget Planning System (ORCAS, PARTS, ROMIS-MMS, BPS). Additionally, this increase is required to deliver a dedicated high side SIPR to be fielded with Model Based Product Support (MBPS) Navy PLM (N-PLM) capability to support Nuclear Command, Control and Communications (NC3) systems installed on Navy ships and shore sites. These capabilities will result in enhanced system and platform readiness through better and more accurate data, and enhanced analytics. This reduces duplicative functionality, infrastructure and associated IT sustainment costs through rationalization of existing LOG IT applications into single integrated Navy PLM environment. Provides warfighter with improved process efficiencies, enhanced data analytics capability and predictive analytical tools to more effectively model/						



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>		<b>Project (Number/Name)</b> 2953 / <i>Model Based Product Support (MBPS)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>				<b>FY 2022</b>	<b>FY 2023</b>
predict system and platform readiness in real time to rapidly prioritize resources to support changing mission requirements. If not funded, a legacy high side capability to support NC3 systems will have to be maintained while the rest of the Navy LOG IT applications are rationalized/replaced by and integrated in MBPS N-PLM environment resulting in increased sustainment cost, cybersecurity risk, loss of productivity/process efficiency and inability to maintain legacy application Authority to Operate.				<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>
				<b>FY 2024 Total</b>	
<b>Accomplishments/Planned Programs Subtotals</b>				0.000	10.817
				20.532	0.000
				20.532	
<b>C. Other Program Funding Summary (\$ in Millions)</b>					
N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b>					
Modernize existing Command Technical Data (CTD), Configuration Management, Readiness and Provisioning / Outfitting logistics information technology systems. The MBPS project will follow a rapid delivery acquisition approach (incremental development and fielding of capabilities) to deliver an integrated and production ready solution.					
To date the MBPS Program has released three (3) contracts to support development:					
1) Other Transaction Authority (OTA) contract for incremental development to include initial "pick and click" type training					
2) Sole source contract awarded to PTC for Software as a Service (SaaS)					
3) Phase III SBIR Task Order 2 to Frontier Technology Inc to deliver foundational training execution					
A FAR based contract will be awarded in the future to support sustainment. Following LD (Limited Deployment) completion, MBPS will be deployed across the Navy enterprise and Full Operational Capability (FOC) established. Following full deployment, MBPS will enter the sustainment period of its lifecycle.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023				
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2953 / Model Based Product Support (MBPS)						
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
System Development and Refinement	C/FFP	United States Army Contracting Command : Orlando, FL	0.000	0.000		4.000	Oct 2022	14.400	Oct 2023	-		14.400	Continuing	Continuing	Continuing	
Subtotal			0.000	0.000		4.000		14.400		-		14.400	Continuing	Continuing	N/A	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Software & Data Integration	C/FFP	Parametric Technology Corporation : Boston, MA	0.000	0.000		5.500	Jan 2023	2.140	Jan 2024	-		2.140	Continuing	Continuing	Continuing	
Subtotal			0.000	0.000		5.500		2.140		-		2.140	Continuing	Continuing	N/A	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation (DT&E)	C/FFP	United States Army Contracting Command : Orlando, FL	0.000	0.000		1.317	Oct 2022	1.792	Oct 2023	-		1.792	Continuing	Continuing	Continuing	
Subtotal			0.000	0.000		1.317		1.792		-		1.792	Continuing	Continuing	N/A	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 2953 / Model Based Product Support (MBPS)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Development and Refinement	C/FFP	Booz allen Hamilton : Tysons Corner, Virginia	0.000	0.000		0.000		2.200	Dec 2023	-		2.200	0.000	2.200	-
Subtotal			0.000	0.000		0.000		2.200		-		2.200	0.000	2.200	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		10.817		20.532		-		20.532	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023																			
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2953 / Model Based Product Support (MBPS)											
Model Based Product Support - N-PLM Integrations LD 7 (Integrated Training, U-NNPI environment, provisioning)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
					LD 7 Requirements and Design																								
						LD 7 SW & Data Integration																							
							LD 7 Demo. & Test																						
								LD 7 Prod. Release																					
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2953 / Model Based Product Support (MBPS)

Model Based Product Support - N-PLM Integrations LD 8 (NCRM Integration		FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
System Development:							LD 8 Requirements and Design																						
System Development:								LD 8 SW & Data Integration																					
Test & Evaluation:									LD 8 Demo. & Test																				
Deliveries:											LD 8 Prod. Release																		

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023															
Appropriation/Budget Activity 1319 / 5														R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2953 / Model Based Product Support (MBPS)							
Model Based Product Support - N-PLM Integrations LD 9 (NCRM Integration)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
													LD 9 Requirements and Design																
														LD 9 SW & Data Integration															
															LD 9 Demo. & Test														
																LD 9 Prod. Release													
2024DON - 0605013N - 2953																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy														Date: March 2023															
Appropriation/Budget Activity 1319 / 5														R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development								Project (Number/Name) 2953 / Model Based Product Support (MBPS)							
Model Based Product Support - N-PLM Integrations LD 10 (NCRM Integration)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
																	LD 10 Requirements and Design												
																		LD 10 SW & Data Integration											
																			LD 10 Demo. & Test										
																				LD 10 Prod. Release									
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023																					
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development										Project (Number/Name) 2953 / Model Based Product Support (MBPS)											
Model Based Product Support - N-PLM Integrations LD 11 (NCRM Integration)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028						
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q			
																					LD 11 Requirements and Design										
																						LD 11 SW & Data Integration									
																							LD 11 Demo. & Test								
																								LD 11 Prod. Release							
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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

2953 / Model Based Product Support (MBPS)

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Model Based Product Support - N-PLM Integrations LD 7 (Integrated Training, U-NNPI environment, provisioning)</b>				
System Development:: LD 7 Requirements and Design	1	2023	2	2023
System Development:: Software and Data Integrations	2	2023	3	2023
Test & Evaluation:: LD 7 Demonstration and Testing	3	2023	4	2023
Deliveries:: LD 7 Production Release	4	2023	4	2023
<b>Model Based Product Support - N-PLM Integrations LD 8 (NCRM Integration)</b>				
System Development:: LD 8 Requirements and Design	3	2023	4	2023
System Development:: Software and Data Integrations	4	2023	1	2024
Test & Evaluation:: LD 8 Demonstration and Testing	1	2024	2	2024
Deliveries:: LD 8 Production Release	3	2024	4	2024
<b>Model Based Product Support - N-PLM Integrations LD 9 (NCRM Integration)</b>				
System Development:: LD 9 Requirements and Design	1	2025	2	2025
System Development:: Software and Data Integrations	2	2025	3	2025
Test & Evaluation:: LD 9 Demonstration and Testing	3	2025	4	2025
Deliveries:: LD 9 Production Release	4	2025	1	2026
<b>Model Based Product Support - N-PLM Integrations LD 10 (NCRM Integration)</b>				
System Development:: LD 10 Requirements and Design	1	2026	2	2026
System Development:: Software and Data Integrations	2	2026	3	2026
Test & Evaluation:: LD 10 Demonstration and Testing	3	2026	4	2026
Deliveries:: LD 10 Production Release	4	2026	4	2026
<b>Model Based Product Support - N-PLM Integrations LD 11 (NCRM Integration)</b>				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 2953 / Model Based Product Support (MBPS)		
	Start		End		
	Events by Sub Project	Quarter	Year	Quarter	Year
	System Development:: LD 11 Requirements and Design	1	2027	2	2027
	System Development:: Software and Data Integrations	2	2027	3	2027
Test & Evaluation:: LD 11 Demonstration and Testing	3	2027	4	2027	
Deliveries:: LD 11 Production Release	4	2027	4	2027	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 3167 / Joint Technical Data Integration (JTDI)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3167: Joint Technical Data Integration (JTDI)	53.845	5.723	6.437	8.077	-	8.077	8.024	7.932	8.069	8.306	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Joint Technical Data Integration (JTDI) Program - Funding provides an enterprise common data transport solution to support the future state for Logistics IT and Readiness: Naval Product Lifecycle Management (N-PLM), Naval Maintenance, Repair, and Overhaul (N-MRO), Naval Supply Chain Management (N-SCM), and Integrated Data Environment (IDE). In addition to transporting authoritative technical data to maintainers in the ashore, afloat, and expeditionary environments, JTDI also automates the movement of CBM+ data generated by smart weapon systems deployed around the globe, consolidates and makes platform sensor data available for automated ingest into the Standard Data Repository, which provides modern, highly integrated analytic capabilities to enable condition-based maintenance processes. JTDI is a digital technical data access, delivery and local Organizational & Intermediate level library management toolset that improves accuracy and timeliness of weapon system repair manuals and other technical data delivery, minimizes the Fleet's library management burden, and reduces maintenance work hours with a Return on Investment of 2.5:1. Funding supports the evaluation, testing and integration to develop a JTDI Government Off-The-Shelf (GOTS) solution for installation on Carrier and Amphibious Assault class ships, the Consolidated Afloat Networks and Enterprise Services Network (CANES), and at other globally deployed Navy/Marine Corps activities. JTDI is aligned with NAVAIR LOG IT digital transformation objectives and Navy Digital Roadmap.

Marine Aviation Logistics Enterprise Information Technology (MAL-EIT) - MAL-EIT funding supports the evaluation, development, testing and integration of software and hardware solutions across all US Marine Corps Aviation activities to be used in the planning and execution of geographically distributed, expeditionary Aviation Logistics (AVLOG) chains in support of deployed USMC Air Combat Element operations. The MAL-EIT Program is one of four programs contained within the Marine Aviation Logistics Support Program (MALSP) modernization program known as MALSP II. Legacy MALSP is nearly 25 years old and grossly inadequate in IT capability to meet the informational, planning, and C2 needs of a dynamic, geographically distributed nodal AVLOG system. MAL-EIT is a Defense Business System Abbreviated Acquisition Program that will develop and deliver the required IT capability necessary to eliminate the IT related gaps existing in the legacy MALSP. MAL-EIT is a family of IT solutions to be developed and delivered in three increments. These increments are depicted below:

Expeditionary Pack Up Kit (EPUK): Provides Expeditionary Supply Operations to include business administration, inventory, and customer service operations.

Next Generation Buffer Management System: Provides buffer management in a time domain, and buffer sizing analysis.

Logistics Planning Tool and Optimizer Tool: Provides capability to develop tailored Remote Expeditionary Support Packages, consumption forecasts, and Nodal Logistics Lay down designs.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 3167 / Joint Technical Data Integration (JTDI)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Joint Technical Data Integration (JTDI)		5.174	5.594	5.875	0.000	5.875
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> Conduct development, modernization, obsolescence management, and cybersecurity mandated activities associated with a major release of fully deployed COTS-intensive JTDI system Version 2.0.8.0. Conduct requirements definition, COTS evaluation, integration, and testing of annual baseline releases. Perform development and testing to continue enhancement of capability to maintain configuration of globally deployed JDMS application; enable enhanced/automated troubleshooting and problem recognition at deployed sites; decompose JTDI system components into containerized micro-services to optimize developmental efforts by reducing program complexity; and enhance distributed analytics capabilities.						
<b>FY 2024 Base Plans:</b> Conduct development, modernization, obsolescence management, and cybersecurity mandated activities associated with a major release of fully deployed COTS-intensive JTDI system Version 2.0.8.5. Conduct COTS requirements definition, evaluation, integration, and testing of annual baseline releases. Perform development and testing to modernize top tier file management to reduce resource intensive tasks; extend cloud capabilities; automate configuration management modules; initial, limited capability to push analytics to the deployed/ distributed edge; continued integration of modules to enhance cyber security and enable tighter configuration control over globally deployed IT assets.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$0.281M) supports the higher costs for software engineering, integration, testing, and cybersecurity activities associated with development/modernization of JTDI system release 2.0.8.5.						
<b>Title:</b> Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)		0.549	0.843	2.202	0.000	2.202
<b>Articles:</b>		-	-	-	-	-
<b>FY 2023 Plans:</b> Continued refinement and updates to the Expeditionary Pack-up Kit (EPUK) and Logistics Planning Tool (LPT). Establishment of the Next Generation Buffer Management System (NGBMS) web application. Synchronization and communication links established between LPT and NGBMS applications.						
<b>FY 2024 Base Plans:</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023							
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 3167 / Joint Technical Data Integration (JTDI)							
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>				<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>			
Continued refinement and updates to the Logistics Planning Tool (LPT). Establishment of the Next Generation Buffer Management System (NGBMS) web application. Synchronization and communication links established between LPT and NGBMS applications.											
<b>FY 2024 OCO Plans:</b> N/A											
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$1.359M) supports the refinement and upgrades to Logistics Planning Tool (LPT) and the establishment of the Next Generation Buffer Management System (NGBMS) web application. Synchronization/communication links established between LPT and NGBMS applications.											
Accomplishments/Planned Programs Subtotals				5.723	6.437	8.077	0.000	8.077			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4268/JTDI: Joint Technical Data Integration (JTDI) Other Aviation Support Equipment	2.355	2.650	2.700	-	2.700	2.762	2.870	2.923	2.998	Continuing	Continuing
<b>Remarks</b> JTDI funds are only a portion of OPN Line Item 4268.											
<b>D. Acquisition Strategy</b>											
Joint Technical Data Integration (JTDI) Program - The management approach includes the Logistics IT Portfolio Management Office residing in NAVAIR as part of Program Executive Office for Aviation Common Systems and Commercial Services. The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded indefinite delivery - indefinite quantity contracts.											
Marine Aviation Logistics Enterprise Information Technology (MAL-EIT) Program - The management approach includes the Logistics IT Portfolio Management Office residing within NAVAIR as part of Program Executive Office for Aviation Common Systems and Commercial Services and Milestone Decision Authority delegated to NAVAIR Sustainment Group. The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded cost plus fixed fee contracts.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development					Project (Number/Name) 3167 / Joint Technical Data Integration (JTDI)				
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development/ Hardware Integration for Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)	C/CPFF	KBR : Patuxent River, MD	8.291	0.000		0.363	Oct 2022	0.000		-		0.000	0.000	8.654	-
Prior year support no longer funded in the FYDP	Various	Various : Various	23.079	0.000		0.000		0.000		-		0.000	0.000	23.079	-
Software Development for JTDI	C/FFP	KBR : Patuxent River, MD	5.121	2.853	May 2022	0.000		3.545	May 2024	-		3.545	Continuing	Continuing	Continuing
Software Development/ Hardware Integration for Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)	C/FFP	NSI : Patuxent River, MD	1.655	0.190	Oct 2021	0.000		1.128	Apr 2024	-		1.128	Continuing	Continuing	Continuing
Software Development for JTDI	C/T&M	GSA/KBR : Patuxent River, MD	0.000	0.000		3.224	May 2023	0.000		-		0.000	0.000	3.224	-
Subtotal			38.146	3.043		3.587		4.673		-		4.673	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	KBR/MAL : Patuxent River, MD	1.765	0.190	Oct 2021	0.252	Oct 2022	0.000		-		0.000	0.000	2.207	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	3.080	0.000		0.000		0.000		-		0.000	0.000	3.080	-
Developmental Test & Evaluation (DT&E)	C/FFP	KBR/JTDI : Patuxent River, MD	3.003	1.789	May 2022	0.000		1.777	May 2024	-		1.777	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/T&M	GSA/KBR/JTDI : Patuxent River, MD	0.000	0.000		1.824	May 2023	0.000		-		0.000	0.000	1.824	-
Developmental Test & Evaluation (DT&E)	C/FFP	NSI/MAL : Patuxent River, MD	0.000	0.000		0.000		0.693	Apr 2024	-		0.693	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 3167 / Joint Technical Data Integration (JTDI)					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			7.848	1.979		2.076		2.470		-		2.470	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support MAL-EIT	WR	NAWCAD : Patuxent River, MD	0.750	0.021	Oct 2021	0.022	Oct 2022	0.028	Oct 2023	-		0.028	Continuing	Continuing	Continuing
Program Management Support MAL-EIT	C/CPFF	KBR : Patuxent River, MD	1.647	0.148	Oct 2021	0.206	Oct 2022	0.180	Jul 2024	-		0.180	Continuing	Continuing	Continuing
Prior year Mgmt Svcs Cost no longer funded in the FYDP	Various	Various : Various	4.614	0.000		0.000		0.000		-		0.000	0.000	4.614	-
Systems Engineering Support - JTDI	C/FFP	KBR : Patuxent River, MD	0.840	0.532	May 2022	0.000		0.553	May 2024	-		0.553	Continuing	Continuing	Continuing
Systems Engineering Support - JTDI	C/T&M	GSA/KBR : Patuxent River, MD	0.000	0.000		0.546	May 2023	0.000		-		0.000	0.000	0.546	-
Program Management Support MAL-EIT	C/FFP	NSI : Patuxent River, MD	0.000	0.000		0.000		0.173	Apr 2024	-		0.173	Continuing	Continuing	Continuing
Subtotal			7.851	0.701		0.774		0.934		-		0.934	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			53.845	5.723		6.437		8.077		-		8.077	Continuing	Continuing	N/A
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

**R-1 Program Element (Number/Name)**

PE 0605013N / Information Technology Development

**Project (Number/Name)**

3167 / Joint Technical Data Integration (JTDI)

	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028			
JTDI	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<div>+</div> <b>Acquisition Milestones</b> <i>Contract Award</i> <i>Release</i>	2.0.8.0				2.0.8.5				2.0.9.0				2.0.9.5				2.1.0.0				2.1.0.5				2.1.1.0			
				2.0.8.5				2.0.9.0				2.0.9.5				2.1.0.0				2.1.0.5				2.1.1.0				2.1.1.5
<b>Development</b> <i>Software Code &amp; Integration</i>				2.0.8.0				2.0.8.5				2.0.9.0				2.0.9.5				2.1.0.0				2.1.0.5				2.1.1.0
<b>Test &amp; Evaluation</b> <i>DT&amp;E</i>				2.0.8.0				2.0.8.5				2.0.9.0				2.0.9.5				2.1.0.0				2.1.0.5				2.1.1.0
<b>Deliveries</b> <i>ECP Change Package</i>				▼ 2.0.8.0				▼ 2.0.8.5				▼ 2.0.9.0				▼ 2.0.9.5				▼ 2.1.0.0				▼ 2.1.0.5				▼ 2.1.1.0



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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

Project (Number/Name)

3167 / Joint Technical Data Integration (JTDI)

	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028			
MAL-EIT	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Acquisition Milestones Contract Award	3.2 ●				3.3 ●				3.4 ●				3.5 ●				3.6 ●				3.7 ●				3.8 ●			
Development Software Development	3.2				3.3				3.4				3.5				3.6				3.7							
Test & Evaluation DT&E/OT&E Limited Fielding		3.2							3.3							3.4				3.5					3.6			
				3.2							3.3						3.4				3.5						3.6	
Deliveries Fielding/Deployment Full Operating Capability					3.2								3.3				3.4				3.5					3.6		
								3.2								3.3				3.4					3.5			3.6

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

3167 / Joint Technical Data Integration (JTDI)

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>JTDI</b>				
Release 2.0.8.5	2	2022	4	2022
Release 2.0.9.0	2	2023	4	2023
Release 2.0.9.5	2	2024	4	2024
Release 2.1.0.0	2	2025	4	2025
Release 2.1.0.5	2	2026	4	2026
Release 2.1.1.0	2	2027	4	2027
Release 2.1.1.5	2	2028	4	2028
Contract Award, Release 2.0.8.0	1	2022	1	2022
Contract Award, Release 2.0.8.5	1	2023	1	2023
Contract Award, Release 2.0.9.0	1	2024	1	2024
Contract Award, Release 2.0.9.5	1	2025	1	2025
Contract Award, Release 2.1.0.0	1	2026	1	2026
Contract Award, Release 2.1.0.5	1	2027	1	2027
Contract Award, Release 2.1.1.0	1	2028	1	2028
Development: Software Code & Integration: Release 2.0.8.0	1	2022	3	2022
Development: Software Code & Integration: Release 2.0.8.5	1	2023	3	2023
Development: Software Code & Integration: Release 2.0.9.0	1	2024	3	2024
Development: Software Code & Integration: Release 2.0.9.5	1	2025	3	2025
Development: Software Code & Integration: Release 2.1.0.0	1	2026	3	2026
Development: Software Code & Integration: Release 2.1.0.5	1	2027	3	2027
Development: Software Code & Integration: Release 2.1.1.0	1	2028	3	2028

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

3167 / Joint Technical Data Integration (JTDI)

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
DT&E: Developmental Test & Evaluation: Release 2.0.8.0	3	2022	4	2022
DT&E: Developmental Test & Evaluation: Release 2.0.8.5	3	2023	4	2023
DT&E: Developmental Test & Evaluation: Release 2.0.9.0	3	2024	4	2024
DT&E: Developmental Test & Evaluation: Release 2.0.9.5	3	2025	4	2025
DT&E: Developmental Test & Evaluation: Release 2.1.0.0	3	2026	4	2026
DT&E: Developmental Test & Evaluation: Release 2.1.0.5	3	2027	4	2027
DT&E: Developmental Test & Evaluation: Release 2.1.1.0	1	2028	4	2028
DT&E: Engineering Change Package: Release 2.0.8.0	4	2022	4	2022
DT&E: Engineering Change Package: Release 2.0.8.5	4	2023	4	2023
DT&E: Engineering Change Package: Release 2.0.9.0	4	2024	4	2024
DT&E: Engineering Change Package: Release 2.0.9.5	4	2025	4	2025
DT&E: Engineering Change Package: Release 2.1.0.0	4	2026	4	2026
DT&E: Engineering Change Package: Release 2.1.0.5	4	2027	4	2027
DT&E: Engineering Change Package: Release 2.1.1.0	4	2028	4	2028
<b>MAL-EIT</b>				
Acquisition Milestone: Contract Award: Contract Award (10)	1	2022	1	2022
Acquisition Milestone: Contract Award: Contract Award (11)	1	2023	1	2023
Acquisition Milestone: Contract Award: Contract Award (12)	1	2024	1	2024
Acquisition Milestone: Contract Award: Contract Award (13)	1	2025	1	2025
Acquisition Milestone: Contract Award: Contract Award (14)	1	2026	1	2026
Acquisition Milestone: Contract Award: Contract Award (15)	1	2027	1	2027
Acquisition Milestone: Contract Award: Contract Award (16)	1	2028	1	2028
Acquisition Milestone: Software Development: Software Development (6)	3	2023	4	2024
Acquisition Milestone: Software Development: Software Development (7)	3	2025	4	2025
Acquisition Milestone: Software Development: Software Development (8)	1	2026	2	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 3167 / Joint Technical Data Integration (JTDI)	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestone: Software Development: Software Development (9)	1	2027	4	2027
Acquisition Milestone: Software Development: Software Development (10)	3	2028	4	2028
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/OT&E (6)	3	2022	4	2022
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/OT&E (7)	3	2024	4	2024
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/OT&E (8)	3	2026	3	2026
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/OT&E (9)	3	2027	3	2027
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/OT&E (10)	3	2028	3	2028
Test & Evaluation: Limited Fielding: Limited Fielding (5)	4	2022	1	2023
Test & Evaluation: Limited Fielding: Limited Fielding (6)	4	2024	1	2025
Test & Evaluation: Limited Fielding: Limited Fielding (7)	3	2026	3	2026
Test & Evaluation: Limited Fielding: Limited Fielding (8)	3	2027	3	2027
Test & Evaluation: Limited Fielding: Limited Fielding (9)	3	2028	3	2028
Deliveries: Fielding/Deployment: Fielding/Deployment (4)	2	2023	3	2023
Deliveries: Fielding/Deployment: Fielding/Deployment (5)	2	2025	3	2025
Deliveries: Fielding/Deployment: Fielding/Deployment (6)	4	2026	4	2026
Deliveries: Fielding/Deployment: Fielding/Deployment (7)	4	2027	4	2027
Deliveries: Fielding/Deployment: Fielding/Deployment (8)	4	2028	4	2028
Deliveries: Full Operating Capability: Full Operating Capability (5)	4	2023	4	2023
Deliveries: Full Operating Capability: Full Operating Capability (6)	4	2025	4	2025
Deliveries: Full Operating Capability: Full Operating Capability (7)	4	2026	4	2026
Deliveries: Full Operating Capability: Full Operating Capability (8)	4	2027	4	2027
Deliveries: Full Operating Capability: Full Operating Capability (9)	4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 3185 / Joint Airlift Information System (JALIS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3185: Joint Airlift Information System (JALIS)	3.316	0.351	0.474	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.141
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

JALIS is an operational scheduling and aircraft management system that facilitates real-time data analysis. JALIS is a critical element in the management of DoD air logistics assets. JALIS allows:

- (1) DoD Service Personnel to submit airlift requirements for DoD Personnel and cargo
- (2) Air Logistics Flying Units to communicate their aircraft availability in a real-time graphic display
- (3) Designated Scheduling Organizations to compare airlift requirements with available aircraft
- (4) Designated Scheduling Organizations to create mission assignments

JALIS informs applicable users of mission details and modifications by using a combination of system displays and email updates. JALIS is geographically distributed and has a user base in excess of 4,000 members. JALIS facilitates the movement of thousands of DoD Personnel and tons of cargo annually in support of the following:

- (1) Navy Unique Fleet Essential Airlift
- (2) Army's Operational Support Airlift Agency (OSAA)
- (3) United States Transportation Command (USTRANSCOM)
- (4) United States Marine Corps (USMC)

The Joint Chiefs of Staff mandates JALIS as the official DoD Airlift scheduling system for Operational Support Airlift (OSA). JALIS meets the requirement for multi-service coordinated Air Logistics scheduling as directed by Chairman, Joint Chiefs of Staff. The Navy is designated as lead agency for sponsoring and funding the JALIS program.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Joint Air Logistic Information System (JALIS)	0.351	0.474	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
1. Complete new user interface (UI)					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>		<b>Project (Number/Name)</b> 3185 / <i>Joint Airlift Information System (JALIS)</i>	

<b><u>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</u></b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
2. Merge five JALIS databases into one; modify JALIS accordingly (upgrade 2.34). New capability will need to include: a. Transferring aircraft between scheduling organizations b. Ability to schedule connecting flights between scheduling orgs 3. Development, testing, and deployment readiness review for new mapping capability compatible with the new UI (upgrade 2.34)  <b><i>FY 2024 Base Plans:</i></b> N/A  <b><i>FY 2024 OCO Plans:</i></b> N/A  <b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> FY24 decrease (\$0.474M) is due to program's transition to full sustainment.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.351	0.474	0.000	0.000	0.000

<b><u>C. Other Program Funding Summary (\$ in Millions)</u></b> N/A
<b><u>Remarks</u></b>
<b><u>D. Acquisition Strategy</u></b> As a general rule, IT development programs use an agile software development methodology therefore milestones, tasks and phases are often conducted in parallel vice sequentially.  Contract activities will focus on developing the following capabilities:  (1) Improved functionality for flight scheduling (2) Improved coordination between JALIS scheduling organizations (3) Integration of JALIS and JALIS Dashboard functions

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023				
Appropriation/Budget Activity						R-1 Program Element (Number/Name)					Project (Number/Name)					
1319 / 5						PE 0605013N / Information Technology Development					3185 / Joint Airlift Information System (JALIS)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Development, Analysis, and QA support		C/CPFF	NAVWAR : New Orleans, LA	3.316	0.351	Feb 2022	0.474	Feb 2023	0.000		-		0.000	0.000	4.141	Continuing
Subtotal			3.316	0.351		0.474		0.000		-		0.000	0.000	4.141	N/A	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			3.316	0.351		0.474		0.000		-		0.000	0.000	4.141	N/A	
Remarks																

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023									
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)									
1319 / 5					PE 0605013N / Information Technology Development					3185 / Joint Airlift Information System (JALIS)									

Proj 3185	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
JALIS																												
		2.32 TRR ▲																										
		2.32 PRR ▲																										
		2.33 CCB ▲																										
		2.33 Development																										
			2.33 Test Readiness Review ▲				2.33 PRR ▲																					
							2.34 CCB ▲					2.34 Development																
												2.34 TRR ▲																
												2.34 PRR ▲																

2024PB - 0605013N - 3185



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 3185 / <i>Joint Airlift Information System (JALIS)</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3185</b>				
JALIS: JALIS - 2.32 Test Readiness Review	2	2022	2	2022
JALIS: JALIS - 2.32 Production Readiness Review	2	2022	2	2022
JALIS: JALIS - 2.33 Configuration Control Board	2	2022	2	2022
JALIS: JALIS - 2.33 Development	2	2022	4	2022
JALIS: JALIS - 2.33 Test Readiness Review	4	2022	4	2022
JALIS: JALIS - 2.33 Production Readiness Review	1	2023	1	2023
JALIS: JALIS - 2.34 Configuration Control Board	1	2023	1	2023
JALIS: JALIS - 2.34 Development	2	2023	4	2023
JALIS: JALIS - 2.34 Test Readiness Review	4	2023	4	2023
JALIS: JALIS - 2.34 Production Readiness Review	4	2023	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9406 / Maintenance Data Warehouse			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9406: Maintenance Data Warehouse	136.208	30.518	44.122	45.328	-	45.328	42.765	43.219	43.834	45.008	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

Maintenance Data Warehouse funds the Naval Aviation Enterprise (NAE) components, in coordination with Navy LOG-IT, of digital transformation which is a critical component of improving readiness; giving Navy users access to authoritative truth data and automating inefficient manual processes. It will be executed in a fully agile manner providing continuous fleet readiness improvements across the FYDP. The initial configuration will be supported with an agile Minimal Viable Product (MVP) as the foundation for continuous capability introduction. The Aviation Logistics Environment (ALE) will provide the seamless environment to support the integration of the other capabilities developed in Maintenance Data Warehouse.

Aviation Logistics Environment (ALE) provides the Naval Aviation Enterprise (NAE) components, in coordination with Navy LOG-IT, of digital transformation which is a critical component of improving readiness; giving Navy users access to authoritative truth data and automating inefficient manual processes. It will be executed in a fully agile manner providing continuous fleet readiness improvements across the FYDP. The initial configuration will be supported with an agile Minimal Viable Product (MVP) as the foundation for continuous capability introduction. The Aviation Logistics Environment (ALE) will provide the seamless environment to support the integration of the other capabilities developed in Maintenance Data Warehouse. Aviation Logistics Environment (ALE) provides a global logistics enterprise solution, delivering capabilities via a net-centric, shared data environment that supports shore-based, afloat, and expeditionary operations. ALE consists of three components; Ground Station, Aviation PLM, and Enterprise Service Bus (ESB). The Maintenance Engineering Ground Station for Aviation (MEGA) is the Naval Aviation Type/Model/Series (T/M/S)-agnostic ground station. MEGA is currently under development using Government off-the-Shelf (GOTS) software and PLM/ESB is configuring Commercial off-the-Shelf (COTS). The Aviation Product Lifecycle Management (Aviation PLM) capability will provide the digital thread of aviation logistics data for allowable and as-configured Repair Bill of Materials (R BOM) sustainment, technical bulletins, technical directives and engineering change proposals, and reliability centered maintenance and maintenance planning. The Enterprise Service Bus (ESB) capability will provide the digital backbone for data connections to and from authoritative data sources. ALE consolidates aging, near-end-of-life systems and applications and aligns Information Assurance (IA) and cybersecurity requirements.

Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) program is the next generation data warehouse containing over 30 years of aircraft maintenance, flight, components, and usage data. Through the use of web-based, commercial off the shelf software for data load, analysis, query, and reporting tools, the user has the capabilities to effectively obtain readiness data in a near real-time environment, as well as providing historical data for long range planning, trend and records analysis, records reconstruction, and compliance with technical directives. DECKPLATE supports the mission of the warfighter who requires a single source of near real-time aviation data in which to base critical readiness decisions. DECKPLATE collects data from authoritative sources, such as the fleet maintenance systems, into a data warehouse. To provide the warfighter with a common view of Logistics IT data, the time consuming tasks of collecting, extracting, transforming, and loading source data will enable an federated data view that will reduce and ultimately eliminate duplicative and manual processes, while providing visibility and access to trusted data for decision support. This also accomplishes a reduction in legacy systems mandated by Office of the Chief of Naval Operations. DECKPLATE manages total inventory for two major categories of assets, Aircraft (General Equipment) and Engine/Propulsion Systems/

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 9406 / Maintenance Data Warehouse				
Modules (EPSMs) (Operating Materials & Supply). DECKPLATE is comprised of the transactional Aircraft Inventory and Readiness Reporting (DECK-AIRRS) and the Engine Transaction Reporting (DECK-ETR) subsystems which provide the complete lifecycle for aircraft and Engine/ Propulsion System/Modules (EPSMs). DECKPLATE has been identified as a level 1 financial feeder system due to the value of the aircraft and EPSM's managed in the system, and continues to respond to audit compliance and Cyber Security mandates. DECKPLATE is a core feeder system to numerous NAVAIR efforts.						
Condition Based Maintenance Plus (CBM+) solution is an initiative which provides Naval Aviation Enterprise with common enabling capabilities which deliver timely data-driven, decisional information to optimize aircraft availability and materiel readiness by incorporating health and usage leading indicators into the failure mode mitigation process, enabling the Warfighter to more efficiently meet mission requirements through automated analysis and decision making processes. The CBM+ initiative increases readiness through streamlined maintenance processes which provide the sustainment base with timely, actionable logistics/engineering data and integrated analytics not previously available, enabling engineers and acquisition professionals to support system improvements based on CBM+ technologies, acquired data, and business process integration of analytic results. CBM+ provides the enabling infrastructure and storage solutions within an Enterprise common environment needed to store and analyze weapon system sensor data to extend the life of current and new acquisition aircraft, realizing savings from reductions in field (organizational and intermediate) maintenance actions, reduced functional check flight hours, mishap mitigation, and reduced parts usage.						
Vector supports the development of a common logistics analytical tool suite which provides a single view of data and insights focused on aircraft readiness, maintenance, supply, cost, and man-hours. Vector provides naval aviation with a common view of approved key performance metrics and the capability to perform multi-system analysis of Ready for Tasking (RFT)/Ready Basic Aircraft (RBA) Gap drivers, 'Top-Down' aircraft systems analysis down to the component level. Vector identifies system performance trends early to mitigate future readiness and cost impacts to the fleet. This is critical for fleet understanding of readiness degraders and issue resolution.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE)		4.424	4.754	4.823	0.000	4.823
Articles:		-	-	-	-	-
FY 2023 Plans: Continue development of additional financial management requirements for the DECKPLATE financial feeder subsystems, Engine Management and Aircraft Inventory Readiness and Reporting System (AIRRS), required to comply with Financial Management and Comptroller (FM&C) audits; Continue development and enhancements as a result of Naval Aviation Maintenance Program (NAMP) policy changes, and emerging fleet and cyber security requirements. Continue alignment with Digital Transformation Plan (DTP) modernization vectors and application rationalization; implement data extract and exchange procedures with the Navy Maintenance Repair and Overhaul (N-MRO)/Agile Warfighter Analytics Readiness Environment (AWARE), and DON ADVANA Jupiter Integrated Data Environments. Implement NMRO / IDE data ingest and interface processes to maintain NAMP compliance during the roll-out of NMRO in support of DECKPLATE transactional systems AIRRS,						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 9406 / Maintenance Data Warehouse				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Engine Management and Technical Directives Reporting System (TDRS); Integration and capability enablement will continue with other key NAVAIR Defense Business Systems and data analytics initiatives, including Joint Technical Data Integration (JTDI), NAVAIR Standard Data Repository, Common FRACAS Tool (CFT), Configuration Management System (CMS), Aviation Logistics Environment (ALE) Product Life Cycle (PLM) Management, NMRO in support of Navy Digital Transformation efforts.</p> <p><b>FY 2024 Base Plans:</b> Continue development supporting financial management requirements for the DECKPLATE financial feeder subsystems, Engine Management and Aircraft Inventory Readiness and Reporting System (AIRRS), required to comply with Financial Management and Comptroller (FM&amp;C) audits; Continue development and enhancements as a result of Naval Aviation Maintenance Program (NAMP) policy changes, and emerging fleet and cyber security requirements. Continue alignment with Digital Transformation Plan (DTP), Logistics IT modernization Lines of Effort and application rationalization; implement data extract and exchange procedures with the Naval Maintenance Repair and Overhaul (N-MRO), Naval Product Lifecycle Management (N-PLM), and Naval Supply Chain Management (N-SCM) as an enabling component of the Logistics IT Information Domain Integrated Data Environment, and fully align and integrate with DON Jupiter and DOD Advana Environments. Implement NMRO / IDE data ingest and interface processes to enable the federation of Logistics IT data, while maintaining NAMP compliance throughout the roll-out of NMRO in support of DECKPLATE transactional systems AIRRS, Engine Management and Technical Directives Reporting System (TDRS); Cloud integration and capability enablement will continue with DECKPLATE and other key Logistics IT Lines of Effort and NAVAIR data analytics initiatives, including Joint Technical Data Integration (JTDI), NAVAIR Standard Data Repository, Common FRACAS Tool (CFT), Aviation Logistics Environment (ALE), Product Life Cycle (PLM) Management, NMRO in support of Navy Digital Transformation efforts.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 increase (\$0.069M) supports DECKPLATE software development cost escalation.</p>							
<p><b>Title:</b> Aviation Logistics Environment (ALE)</p> <p><b>Articles:</b></p> <p><b>FY 2023 Plans:</b> The Aviaton Logistics Environment (ALE) program will have limited deployments: (1) System Migration that enables the retirement of legacy logistics IT systems/applications and incorporates the key capabilities for</p>			23.793 -	37.117 -	36.217 -	0.000 -	36.217 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023					
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 9406 / Maintenance Data Warehouse				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>management of Engineering Product Data, end item configuration, deficiency reporting, and technical manuals. Designated Core Functionality Migration/Integration (FMI). (2) Secured Enterprise Solution Licensing to expand user base for Aviation Product Lifecycle Management (AvPLM). (3) Integration with Other Navy Modernization efforts to include Navy MRO &amp; Supply Chain Management at Depot level. Integrated HW and SW baselines for modernization product support.</p> <p><b>FY 2024 Base Plans:</b> To continue the Aviation Logistics Environment (ALE) program with limited deployments; (1) System Migration that enables the retirement of legacy logistics IT systems/applications and incorporates the key capabilities for management of Engineering Product Data, end item configuration, deficiency reporting, and technical manuals. Designated Core Functionality Migration/Integration (FMI). (2) Secured Enterprise Solution Licensing to expand user base for Aviation Product Lifecycle Management (AvPLM). (3) Integration with Other Navy Modernization efforts to include Navy MRO &amp; Supply Chain Management at Depot level. Integrated HW and SW baselines for modernization product support.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 decrease (\$0.900M) is due to de-scoping contract support for Aviation Logistics Environment (ALE).</p>								
<p><b>Title:</b> Condition Based Maintenance Plus (CBM+)</p> <p><b>Articles:</b></p> <p><b>FY 2023 Plans:</b> N/A</p> <p><b>FY 2024 Base Plans:</b> Begin CBM+ Standard Data Repository integration with DoD Cloud Native Services enabling a hybrid-cloud architecture that supports Logistics IT Information Domain Integrated Data Environment (IDE) requirements including continued enhancements to Enhanced Reliability Centered Maintenance (eRCM), CBM+ Actionable Analytics, and Navy Cost Readiness Model (NCRM) cloud implementations. This enabled architecture will support accelerated Logistics IT data federation and enterprise analytics, while enabling a critical component of the DON reference architecture's cross-information domain IDE.</p> <p><b>FY 2024 OCO Plans:</b></p>				0.141 -	0.000 -	2.003 -	0.000 -	2.003 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023							
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 9406 / Maintenance Data Warehouse							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total			
N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase (\$2.003M) supports the development costs related to enablement of the CBM+ Integrated Data Environment hybrid-cloud architecture in support of Logistics IT eRCM, Actionable Analytics, and NCRM hosting capabilities.											
Title: Vector				2.160	2.251	2.285	0.000	2.285			
Articles:				-	-	-	-	-			
FY 2023 Plans: Implement Reliability and Maintainability analytic capabilities for Navy Joint Strike Fighter and Unmanned Air Vehicle Analytics. Continue migration to DoD Cloud Native Services and Integration with common data environments. Implement integration to Naval Aviation Maintenance System/Naval Operational Business Logistics Environment/Product Lifecycle Management/Enterprise Service Bus. Respond to emerging Fleet and Naval Aviation Enterprise customer requirements; continue Integration and Consolidation of Commercial Off-the-Shelf Business Intelligence Integration.											
FY 2024 Base Plans: Continue migration to DoD Cloud Native Services, micro-services Continuous Integration / Continuous Deployment (CI/CD) development, and integration with the Logistics IT Integrated Data Environment (IDE). Implement connections with the Logistics IT Enterprise Service Bus (ESB), consolidate custom coded Vector dashboards into enterprise Commercial Off-the-Shelf Business Intelligence solutions.											
FY 2024 OCO Plans: N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increase (\$0.034M) supports Vector software development cost escalation.											
Accomplishments/Planned Programs Subtotals				30.518	44.122	45.328	0.000	45.328			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4268/DECKPLATE: Other Aviation Support Equipment	2.196	2.342	2.385	-	2.385	2.425	2.491	2.541	2.604	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9406 / Maintenance Data Warehouse			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4268/CBM: Other Aviation Support Equipment	0.285	0.301	0.306	-	0.306	0.312	0.320	0.327	0.334	Continuing	Continuing
Remarks											
DECKPLATE and CBM funds are only a portion of OPN Line Item 4268.											
D. Acquisition Strategy											
The management approach includes the Logistics IT Portfolio Management Office residing in NAVAIR as part of Program Executive Office for Aviation Common Systems and Commercial Services.											
Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) - Development services will be performed under a competitively awarded contract. The task order contains a matrix of tasks and required levels of performance. Follow on contracts will utilize the same competitive system. The services provided under the contract support acquisition will not encompass tasks inherently Governmental in nature. The Statement of Work includes a matrix that establishes the minimum acceptable performance standards.											
Condition Based Maintenance Plus (CBM+) - Development will be provided using competitively awarded contracts coordinated via NAVAIR's Aviation Logistics Environment (ALE) Program Management and supporting Contract Business Office, and will contain a matrix of tasks and required levels of performance. Follow on Contracts will utilize the same competitive system. The Services provided under the contract support acquisition will not encompass tasks inherently Governmental in nature, and Statements of Work will include a matrix that establishes the minimum acceptable performance standards.											
Aviation Logistics Environment (ALE)- Development services will be awarded using a competitively awarded contract that will contain a matrix of tasks and required levels of performance. Follow on contracts will also follow the same competitive system. The Services provided under the contract support acquisitions will not encompass tasks inherently Governmental in nature and the Statements of Work will include a matrix that establishes the minimum acceptable performance standards.											
Vector Software - Development services will be performed under a competitively awarded Cyber Security (CS) Contract. Follow on Contracts will utilize the same competitive system. The Services provided under the contract support acquisitions will not encompass tasks inherently governmental in nature. The Statements of Work will include a matrix that establishes the minimum acceptable performance standards.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9406 / Maintenance Data Warehouse					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Prod Def no longer funded in the FYDP	Various	Various : Various	19.461	0.000		0.000		0.000		-		0.000	0.000	19.461	-
Development for Aviation Logistics Environment (ALE)	Various	Various : Various	43.801	15.157	Feb 2022	22.653	Feb 2023	25.280	Feb 2024	-		25.280	Continuing	Continuing	Continuing
Development for Decision Knowledge Programming for Logistics Analysis and Technical Evalutaion (DECKPLATE)	C/CPFF	Spalding : Lexington Park, MD	12.975	2.958	Dec 2021	0.000		0.000		-		0.000	0.000	15.933	-
Development for Condition Based Maintenance Plus (CBM+)	C/CPFF	KBR : Patuxent River, MD	21.404	0.000		0.000		1.248	Dec 2023	-		1.248	Continuing	Continuing	Continuing
Development for Vector	C/CPFF	KBR : Patuxent River, MD	1.713	1.039	Dec 2021	1.256	Dec 2022	0.000		-		0.000	0.000	4.008	-
Development for Vector	C/CPFF	Spalding : Lexington Park, MD	0.000	0.439	Dec 2021	0.000		1.725	Dec 2023	-		1.725	Continuing	Continuing	Continuing
Development for Decision Knowledge Programming for Logistics Analysis and Technical Evalutaion (DECKPLATE)	C/CPFF	KBR : Patuxent River, MD	0.476	0.275	Dec 2021	0.247	Dec 2022	0.283	Dec 2023	-		0.283	Continuing	Continuing	Continuing
Development for Aviation Logistics Environment (ALE)	C/CPFF	KBR : Patuxent River, MD	4.477	2.090	Jan 2022	4.255	Jan 2023	0.000		-		0.000	0.000	10.822	-
Development for Vector	C/FFP	Cyber Analytics : Patuxent River, MD	0.146	0.000	Feb 2022	0.235	Feb 2023	0.000		-		0.000	0.000	0.381	-
Development for Aviation Logistics Environment (ALE) Ground Station	C/CPFF	Redstone : Huntsville, AL	2.697	1.760	Jun 2022	2.550	Jun 2023	2.951	Jun 2024	-		2.951	Continuing	Continuing	Continuing
Development for Decision Knowledge Programming for Logistics Analysis	C/CPFF	TBD : TBD	0.000	0.000		2.823	Dec 2022	3.156	Mar 2024	-		3.156	Continuing	Continuing	Continuing



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9406 / Maintenance Data Warehouse					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
and Technical Evalutaion (DECKPLATE)															
Development for Vector	C/CPFF	TBD : TBD	0.000	0.000		0.150	Dec 2022	0.000		-		0.000	0.000	0.150	-
Subtotal			107.150	23.718		34.169		34.643		-		34.643	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for DECKPLATE	WR	NAWCAD : Patuxent River, MD	9.641	1.191	Oct 2021	1.684	Oct 2022	1.384	Oct 2023	-		1.384	Continuing	Continuing	Continuing
Prior year Prod Def no longer funded in the FYDP	Various	Various : Various	1.031	0.000		0.000		0.000		-		0.000	0.000	1.031	-
Program Management Support for CBM+	WR	NAWCAD : Patuxent River, MD	4.100	0.141	Oct 2021	0.000		0.757	Oct 2023	-		0.757	Continuing	Continuing	Continuing
Program Management Support for Aviation Logistics Environment (ALE)	WR	NAWCAD : Patuxent River, MD	7.601	0.854	Oct 2021	1.585	Oct 2022	1.707	Oct 2023	-		1.707	Continuing	Continuing	Continuing
Program Management Support for Vector	WR	NAWCAD : Patuxent River, MD	0.456	0.557	Oct 2021	0.485	Oct 2022	0.558	Oct 2023	-		0.558	Continuing	Continuing	Continuing
Program Management Support for Vector	C/CPFF	KBR : Patuxent River, MD	0.215	0.125	Dec 2021	0.125	Dec 2022	0.000		-		0.000	0.000	0.465	-
Program Management Support for Aviation Logistics Environment (ALE)	WR	NAWCWD : China Lake, CA	0.000	0.000		0.112	Oct 2022	0.000		-		0.000	0.000	0.112	-
Program Management Support - TRAVEL Aviation Logistics Environment (ALE)	WR	NAVAIR HQ : Patuxent River, MD	0.000	0.040	Oct 2021	0.000		0.000		-		0.000	0.000	0.040	-
Program Management Support for Aviation	C/CPFF	KBR : Patuxent River, MD	2.166	1.999	Feb 2022	2.039	Feb 2023	2.185	Oct 2023	-		2.185	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development						Project (Number/Name) 9406 / Maintenance Data Warehouse			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Logistics Environment (ALE)															
Program Management Support for Aviation Logistics Environment (ALE)	C/CPFF	Booz Allen Hamilton : Patuxent River, MD	1.670	1.593	Feb 2022	1.625	Feb 2023	0.000		-		0.000	0.000	4.888	-
Program Management Support for Aviation Logistics Environment (ALE)	WR	Fleet Readiness Center Mid Atlantic : Patuxent River, MD	0.975	0.300	Oct 2021	1.231	Oct 2022	1.559	Oct 2023	-		1.559	Continuing	Continuing	Continuing
Program Management Support for DECKPLATE	WR	Fleet Readiness Center Mid Atlantic : Patuxent River, MD	0.242	0.000		0.000		0.000		-		0.000	0.000	0.242	-
Program Management Support for Aviation Logistics Environment (ALE)	WR	NAVWAR : San Diego, CA	0.961	0.000		1.067	Oct 2022	0.928	Oct 2023	-		0.928	Continuing	Continuing	Continuing
Program Management Support for Aviation Logistics Environment (ALE)	Various	Various : Various	0.000	0.000		0.000		1.607	Oct 2023	-		1.607	0.000	1.607	-
Subtotal			29.058	6.800		9.953		10.685		-		10.685	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			136.208	30.518		44.122		45.328		-		45.328	Continuing	Continuing	N/A
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

**R-1 Program Element (Number/Name)**

PE 0605013N / Information Technology Development

**Project (Number/Name)**

9406 / Maintenance Data Warehouse

	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
DECKPLATE																												
Acquisition Milestones	SW Dev 6				SW Dev 7				SW Dev 8				SW Dev 9				SW Dev 10				SW Dev 11				SW Dev 12			
Contract Award	●				●				●				●				●				●				●			
Development																												
Software Development	SW Dev 6				SW Dev 7				SW Dev 8				SW Dev 9				SW Dev 10				SW Dev 11				SW Dev 12			
Test & Evaluation																												
Test & Evaluation	▼ IV&V 6				▼ IV&V 7				▼ IV&V 8				▼ IV&V 9				▼ IV&V 10				▼ IV&V 11				▼ IV&V 11			
Customer Acceptance Testing																												
Deliveries																												
Production Release	Prod Release 4.4.X ▼				Prod Release 4.5.X ▼				Prod Release 4.6.X ▼				Prod Release 4.7.X ▼				Prod Release 4.8.X ▼				Prod Release 4.9.X ▼				Prod Release 5.0.X ▼			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy				Date: March 2023																
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9406 / Maintenance Data Warehouse												
	FY2022				FY2023				FY2024				FY2025				FY2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CBM+  Software Development   I V&V Testing  Software Capability Delivery																				

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity


1319 / 5

## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

9406 / Maintenance Data Warehouse

	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
																												
<b>Vector</b>																												
<b>Development</b>																												
Software Development	SW Dev 4				SW Dev 5				SW Dev 6				SW Dev 7				SW Dev 8				SW Dev 9				SW Dev 10			
<b>Test &amp; Evaluation</b>																												
Test & Evaluation	IV&V Test 4 ▼				IV&V Test 5 ▼				IV&V Test 6 ▼				IV&V Test 7 ▼				IV&V Test 8 ▼				IV&V Test 9 ▼				IV&V Test 10 ▼			
<b>Deliveries</b>																												
Deliveries/Field Implementation	Delivery 4 ▼				Delivery 5 ▼				Delivery 6 ▼				Delivery 7 ▼				Delivery 8 ▼				Delivery 9 ▼				Delivery 10 ▼			

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

9406 / Maintenance Data Warehouse

	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALE																												
Software Development																												
	PLM/ESB/MEGA LD 5	PLM/ESB/MEGA LD 6	PLM/ESB/MEGA ALD 7	PLM/ESB/MEGA ALD 8	PLM/ESB/MEGA LD 9	PLM/ESB/MEGA LD 10	PLM/ESB/MEGA LD 11	PLM/ESB/MEGA LD 12	PLM/ESB/MEGA LD 13	PLM/ESB/MEGA LD 14	PLM/ESB/MEGA LD 15	PLM/ESB/MEGA LD 16	PLM/ESB/MEGA LD 17	PLM/ESB/MEGA LD 18														
Test & Evaluation																												
Test & Evaluation	LD 5	LD 6	LD 7	LD 8	LD 9	LD 10	LD 11	LD 12	LD 13	LD 14	LD 15	LD 16	LD 17	LD 18														
Deliveries/Field Implementation	LD 5	LD 6	LD 7	LD 8	LD 9	LD 10	LD 11	LD 12	LD 13	LD 14	LD 15	LD 16	LD 17	LD 18														
T/M/S Onboarding	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼														
LD-Limited Deployment																												

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

9406 / Maintenance Data Warehouse

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>DECKPLATE IT EXXCOMM Portfolio Consolidation</b>				
Systems Development: Software Development: Contract Award 6	1	2022	1	2022
Systems Development: Software Development: Requirements and Design 6	1	2022	3	2022
Systems Development: Software Development: Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 6	1	2022	3	2022
Systems Development: Software Development: Contract Award 7	1	2023	1	2023
Systems Development: Software Development: Requirements and Design 7	1	2023	2	2023
Systems Development: Software Development: Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 7	1	2023	3	2023
Systems Development: Software Development: Contract Award 8	1	2024	1	2024
Systems Development: Software Development: Requirements and Design 8	1	2024	2	2024
Systems Development: Software Development: Schedule Detail Software Development and Sesign (IT Labor/HW/Hosting Licensing) 8	1	2024	3	2024
Systems Development: Software Development: Contract Award 9	1	2025	1	2025
Systems Development: Software Development: Requirements and Design 9	1	2025	3	2025
Systems Development: Software Development: Schedule Detail Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 9	1	2025	3	2025
Systems Development: Software Development: Contract Award 10	1	2026	1	2026
Systems Development: Software Development: Requirements and Design 10	1	2026	3	2026
Systems Development: Software Development: Schedule Detail Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 10	1	2026	3	2026
Systems Development: Software Development: Contract Award 11	1	2027	1	2027
Systems Development: Software Development: Requirements and Design 11	1	2027	3	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 9406 / Maintenance Data Warehouse	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Systems Development: Software Development: Schedule Detail Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 11	1	2027	3	2027
Systems Development: Software Development: Contract Award 12	1	2028	1	2028
Systems Development: Software Development: Schedule Detail Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 12	1	2028	3	2028
Systems Development: Software Development: Requirements and Design 12	1	2028	3	2028
Test & Evaluation: DECKPLATE IV&V Testing 6	2	2022	2	2022
Test & Evaluation: DECKPLATE Customer Acceptance Testing 6	2	2022	3	2022
Test & Evaluation: DECKPLATE IV&V Testing 7	2	2023	2	2023
Test & Evaluation: DECKPLATE Customer Acceptance Testing 7	2	2023	3	2023
Test & Evaluation: DECKPLATE IV&V Testing 8	2	2024	2	2024
Test & Evaluation: DECKPLATE Customer Acceptance Testing 8	2	2024	3	2024
Test & Evaluation: DECKPLATE IV&V Testing 9	2	2025	2	2025
Test & Evaluation: DECKPLATE Customer Acceptance Testing 9	2	2025	3	2025
Test & Evaluation: DECKPLATE IV&V Testing 10	2	2026	2	2026
Test & Evaluation: DECKPLATE Customer Acceptance Testing 10	2	2026	3	2026
Test & Evaluation: DECKPLATE IV&V Testing 11	2	2027	2	2027
Test & Evaluation: DECKPLATE Customer Acceptance Testing 11	3	2027	4	2027
Test & Evaluation: DECKPLATE IV&V Testing 12	2	2028	2	2028
Test & Evaluation: DECKPLATE Customer Acceptance Testing 12	3	2028	4	2028
Deliveries: DECKPLATE Production Release Delivery 4.4.X	4	2022	4	2022
Deliveries: DECKPLATE Production Release Delivery 4.5.X	4	2023	4	2023
Deliveries: DECKPLATE Production Release Delivery 4.6.X	4	2024	4	2024
Deliveries: DECKPLATE Production Release Delivery 4.7.X	4	2025	4	2025
Deliveries: DECKPLATE Production Release Delivery 4.8.X	4	2026	4	2026
Deliveries: DECKPLATE Production Release Delivery 4.9.X	4	2027	4	2027



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 9406 / Maintenance Data Warehouse	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Deliveries: DECKPLATE Production Release Delivery 5.0.X		4	2028	4	2028
Condition Based Maintenance Plus (CBM+)					
Systems Development: Software Development: CBM+ Requirements Development 8		1	2022	3	2022
Systems Development: Software Development: Contract Award-CBM+ Component Tracking Integration 8		1	2022	1	2022
Systems Development: Software Development: CBM+ Component Tracking Integration 8		1	2022	1	2022
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition Production Capability 8		1	2022	3	2022
Systems Development: Software Development: CBM+ Requirements Development 9		1	2024	4	2024
Systems Development: Test and Evaluation: CBM+ IV&V Testing		4	2024	4	2024
Systems Development: Deliveries: CBM+ Software Capability Delivery		4	2024	4	2024
Aviation Logistics Environment (ALE)					
Software Development: PLM Solution/ESB/MEGA Limited Deployment 5		1	2022	2	2022
Software Development: PLM Solution/ESB/MEGA Limited Deployment 6		3	2022	4	2022
Software Development: PLM Solution/ESB/MEGA Limited Deployment 7		1	2023	2	2023
Software Development: PLM Solution/ESB/MEGA Limited Deployment 8		3	2023	4	2023
Software Development: PLM Solution/ESB/MEGA Limited Deployment 9		1	2024	2	2024
Software Development: PLM Solution/ESB/MEGA Limited Deployment 10		3	2024	4	2024
Software Development: PLM Solution/ESB/MEGA Limited Deployment 11		1	2025	2	2025
Software Development: PLM Solution/ESB/MEGA Limited Deployment 12		3	2025	4	2025
Software Development: PLM Solution/ESB/MEGA Limited Deployment 13		1	2026	2	2026
Software Development: PLM Solution/ESB/MEGA Limited Deployment 14		3	2026	4	2026
Software Development: PLM Solution/ESB/MEGA Limited Deployment 15		1	2027	2	2027
Software Development: PLM Solution/ESB/MEGA Limited Deployment 16		3	2027	4	2027
Software Development: PLM Solution/ESB/MEGA Limited Deployment 17		1	2028	2	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development		Project (Number/Name) 9406 / Maintenance Data Warehouse	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Software Development: PLM Solution/ESB/MEGA Limited Deployment 18		3	2028	4	2028
Test and Evaluation: LD 5 Test and Evaluation		2	2022	2	2022
Test and Evaluation: LD 6 Test and Evaluation		4	2022	4	2022
Test and Evaluation: LD 7 Test and Evaluation		2	2023	2	2023
Test and Evaluation: LD 8 Test and Evaluation		4	2023	4	2023
Test and Evaluation: LD 9 Test and Evaluation		2	2024	2	2024
Test and Evaluation: LD 10 Test and Evaluation		4	2024	4	2024
Test and Evaluation: LD 11 Test and Evaluation		2	2025	2	2025
Test and Evaluation: LD 12 Test and Evaluation		4	2025	4	2025
Test and Evaluation: LD 13 Test and Evaluation		2	2026	2	2026
Test and Evaluation: LD 14 Test and Evaluation		4	2026	4	2026
Test and Evaluation: LD 15 Test and Evaluation		2	2027	2	2027
Test and Evaluation: LD 16 Test and Evaluation		4	2027	4	2027
Test and Evaluation: LD 17 Test and Evaluation		2	2028	2	2028
Test and Evaluation: LD 18 Test and Evaluation		4	2028	4	2028
Implementation: Implementation: T/M/S Onboarding LD 5		2	2022	2	2022
Implementation: Implementation: T/M/S Onboarding LD 6		4	2022	4	2022
Implementation: Implementation: T/M/S Onboarding LD 7		2	2023	2	2023
Implementation: Implementation: T/M/S Onboarding LD 8		4	2023	4	2023
Implementation: Implementation: T/M/S Onboarding LD 9		2	2024	2	2024
Implementation: Implementation: T/M/S Onboarding LD 10		4	2024	4	2024
Implementation: Implementation: T/M/S Onboarding LD 11		2	2025	2	2025
Implementation: Implementation: T/M/S Onboarding LD 12		4	2025	4	2025
Implementation: Implementation: T/M/S Onboarding LD 13		2	2026	2	2026
Implementation: Implementation: T/M/S Onboarding LD 14		4	2026	4	2026

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

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## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

9406 / Maintenance Data Warehouse

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Implementation: Implementation: T/M/S Onboarding LD 15	2	2027	2	2027
Implementation: Implementation: T/M/S Onboarding LD 16	4	2027	4	2027
Implementation: Implementation: T/M/S Onboarding LD 17	2	2028	2	2028
Implementation: Implementation: T/M/S Onboarding LD 18	4	2028	4	2028
<b>Vector</b>				
System Development: Software Development 4	1	2022	3	2022
System Development: Software Development 5	1	2023	3	2023
System Development: Software Development 6	1	2024	3	2024
System Development: Software Development 7	1	2025	3	2025
System Development: Software Development 8	1	2026	3	2026
System Development: Software Development 9	1	2027	3	2027
System Development: Software Development 10	1	2028	3	2028
Test and Evaluation: I V&V Testing 4	4	2022	4	2022
Test and Evaluation: I V&V Testing 5	4	2023	4	2023
Test and Evaluation: I V&V Testing 6	4	2024	4	2024
Test and Evaluation: I V&V Testing 7	4	2025	4	2025
Test and Evaluation: I V&V Testing 8	4	2026	4	2026
Test and Evaluation: I V&V Testing 9	4	2027	4	2027
Test and Evaluation: I V&V Testing 10	4	2028	4	2028
Deliveries: Software Capability Delivery 4 (ASD Interface, Daily Status, Support Equipment Analytics Initial Deployment)	4	2022	4	2022
Deliveries: Software Capability Delivery 5 (JSF, Unmanned Aircraft Analytics Initial Deployment)	4	2023	4	2023
Deliveries: Software Capability Delivery 6 (Joint Navy / Air Force Data Analytics, Commercial Off-the-Shelf Business Intelligence Expanded Capabilities)	4	2024	4	2024
Deliveries: Software Capability Delivery 7 Software Analytic Capabilites	4	2025	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023		
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 9406 / Maintenance Data Warehouse		
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Deliveries: Software Capability Delivery 8 Software Analytic Capabilites	4	2026	4	2026
Deliveries: Software Capability Delivery 9 (Software Analytic Capabilities)	4	2027	4	2027
Deliveries: Software Capability Delivery 10 (Software Analytic Capabilities)	4	2028	4	2028
Dynamic Scheduling				
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron H-1	1	2022	1	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	41.015	30.891	27.750	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	99.656
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

C599 - There is a misspelling in the Accomplishment name. Solutions vice Soutions.

**A. Mission Description and Budget Item Justification**

**CONDITION BASED MAINTENANCE PLUS (CBM+):**

The CBM+ solution is an initiative which provides Naval Aviation Enterprise with common enabling capabilities which deliver timely data-driven decisional information to optimize aircraft availability and materiel readiness by incorporating health and usage leading indicators into the failure mode mitigation process, enabling the Warfighter to more efficiently meet mission requirements through automated analysis and decision making processes. The CBM+ Initiative increases readiness through streamlined maintenance processes which provide actionable logistics/engineering data and integrated analytics not previously available, enabling engineers and acquisition professionals to support system improvements based on CBM+ acquired data and analytic results. CBM+ provides the enabling infrastructure and storage solutions within an Enterprise common environment needed to store and analyze weapon system sensor data to extend the life of current and new acquisition aircraft, realizing savings from reductions in field (organizational and intermediate) maintenance actions, reduced functional check flight hours, mishap mitigation, and reduced parts usage.

C777-Aviation Product Lifecycle Management (AvPLM) - Capability provides digital process integration with complete, secure and authoritative data, coordinated as part of approved Navy LOG-IT. AvPLM integrates the product life cycle to provide universal access to authoritative data and workflow automation, enabling configuration management of data, implementation of closed loop quality, and consolidation of engineering products and data. Connecting these processes using standardized digital tools and data accelerates the product development cycle and lowers costs for support and new capability integration. The Digital Thread capability includes development and demonstration of cyber security architectures for sustainment information systems, and development of a digital data product architecture and repository.

C778-Actionable Analytics for reliable maintenance provides the required Logistics Information Technology, data enablement, and Logistics/Engineering/Analytics domain expertise to realize predictive Condition Based Maintenance Plus (CBM+) use cases and business process within an Enterprise common CBM analytics environment to optimize aircraft availability and materiel readiness by incorporating health and usage leading indicators into the failure mode mitigation process, enabling the Warfighter to more efficiently meet mission requirements. The CBM+ analytics environment automates required maintenance, aircraft Health Monitoring System (HMS) sensor, and supporting data collection, storage, integration, and analysis capabilities across the Naval Aviation Enterprise, leveraging the integration of large scale on-premises, in cloud, and at edge Log IT solutions for proactive CBM+ data-driven decision support.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2022</b>	<b>FY 2023</b>
<b>Congressional Add:</b> Aviation innovative cyber solutions  <b>FY 2022 Accomplishments:</b> Funding supports the red team analysis, defensive cyber operations, and defensive cyber engineering efforts that serve naval aviation platform owners. Through the execution of this project, naval aviation cyber readiness will be ultimately improved and better assured. Risks to mission, readiness and safety will be considered across the portfolio and testing gaps critical to identifying those risks will be closed. C774 covers augmentation and maturation of laboratory capabilities, environments and customized toolsets across multiple NAVAIR sites and facilities to conduct cyber security Research, Development, Test and Evaluation (RDT&E) for NAVAIR programs; development of aviation weapon systems customized tools, methodologies, and procedures identified from Cyber Risk Assessments, Cyber Table Tops, test and evaluation capability gaps and emergent threats; increased program and Fleet support capability for penetration testing, hands on adversarial assessments, and engineering investigations; enhanced intelligence collaboration supporting defensive and offensive cyber warfare.  <b>FY 2023 Plans:</b> N/A		8.688	0.000
<b>Congressional Add:</b> Cyber solutions in classified environments  <b>FY 2022 Accomplishments:</b> Funding supports the continued prototyping of innovative enhancements to existing commercial off-the-shelf (COTS) cross-domain capabilities that will improve the cyber resiliency of Naval Aviation, US Navy, and DoD weapon systems. The NAWCAD Cyber Warfare Department (CWD) is working to ensure that warfighting systems and their directly corresponding support systems can maintain operational readiness and are survivable and mission capable in the face of modern cyber warfare threats. This funding will help to address NAWCAD-identified shortcomings related to multi-level security, real-time bi-directional communications from sensors/payloads and data sources to command and control (C2) exploitations across various security domains. In the end, this project will advance novel concepts and emerging technologies to better ensure Navy and DOD systems can maintain operational readiness and survive threats to the systems, platforms, and directly corresponding support systems in cyber-contested warfighting environments.  <b>FY 2023 Plans:</b> N/A		5.792	0.000
<b>Congressional Add:</b> Warfare mission analysis in cyber contested environment  <b>FY 2022 Accomplishments:</b> Funding provided for the incorporation of cyber capabilities into key DON Modeling and Simulation (M&S) capabilities, including but not limited to the Joint Simulation Environment (JSE). This resourcing ultimately helped to ensure the NAE warfighter is effective at fighting through a cyber-attack on their platforms, missions, or supporting infrastructure. In order to effectively do so, mission analysis products and training environments provided an accurate depiction of the contested battlespace, including cyber threat		4.827	5.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 9999 / Congressional Adds
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		
representation and realistic cyber-effects generation. This funding enabled the transformation of warfare mission analysis and M&S capabilities such that they might more accurately and completely represent a cyber-contested warfighting environment.		
<b>FY 2023 Plans:</b> Funding will enable further development of flexible cross domain technologies supporting DON warfighting platforms as well as Modeling and Simulation (M&S) capabilities. Supported environments will include but are not limited to the Joint Simulation Environment (JSE) and the Naval Aviation Red Team (AIR-RT) Cyber Mission Operations Center (CMOC). This funding will also enable the procurement and installation of Cyber Red Team and CPRC infrastructure to meet the intent of Navy leadership in the standup of those key capabilities.		
<b>Congressional Add:</b> Product lifecycle management for naval aviation	1.931	0.000
<b>FY 2022 Accomplishments:</b> Funding supports the extension of Naval Aviation Product Life Cycle Management (AvPLM) performance envelope for PLM which will allow us to expand the data model and implement additional capability such as LPD (Logistics Product Data), Model Based Systems Engineering (MBSE) efforts, Cost Readiness Impact Model (CRIM) and Discrepancy Reporting.		
<b>FY 2023 Plans:</b> N/A		
<b>Congressional Add:</b> Actionable analytics for reliable maintenance	3.861	0.000
<b>FY 2022 Accomplishments:</b> Funding supports CBM Actionable Analytics to integrate NAVAIR's Integrated Data Environment Standard Data Repository with foundational cloud-native object storage, automated sensor data curation, and advanced analytics capabilities which support CBM predictive maintenance use cases and supporting business process, cost, and readiness improvement objectives.		
<b>FY 2023 Plans:</b> N/A		
<b>Congressional Add:</b> Advanced shipyard technologies	5.792	0.000
<b>FY 2022 Accomplishments:</b> Funding supports the development of a prototype Cyber Supply Chain Risk Management (C-SCRM) system to illuminate risk within the supply chain down to the individual component level. This will be accomplished through the development of system of system models utilizing techniques such as Model Based Systems Engineering (MBSE) instead of relying on classic document based approach. Analysis will leverage machine learning algorithms and artificial intelligence. Dashboards will be developed for those weapons systems that are aligned as well as a global dashboard for the Cyber Planning and Response Center. Some systems will require the creation of Software or Hardware Bill of Materials, in this case a standard data item description will be developed.		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2022</b>	<b>FY 2023</b>
An enterprise C-SCRM solution will allow for sharing of C-SCRM data across platforms, resulting in reductions in cost for each program office and schedule to meet the acquisition timeline. It will also reduce risk across the enterprise by illuminating and preventing vulnerabilities from propagating by sharing vulnerabilities to common critical systems and vendors before they find a way into the Fleet. <b>FY 2023 Plans:</b> N/A			
<b>Congressional Add:</b> Digital twin development <b>FY 2022 Accomplishments:</b> N/A <b>FY 2023 Plans:</b> Funding will support the development of cyber digital twins for naval aviation warfighting platforms. This funding will also support the development, procurement, and installation of the infrastructure necessary to enable the cyber vulnerability research that the digital twins are being created to support. Finally, cyber vulnerability research will be conducted leveraging these digital twin technologies, providing vulnerabilities and susceptibilities to Program Managers that can ultimately improve naval aviation warfighting readiness, platform survivability, and safety.		0.000	7.000
<b>Congressional Add:</b> Broadband network for Navy owned research vessels <b>FY 2022 Accomplishments:</b> N/A <b>FY 2023 Plans:</b> Outdated wireless broadband connectivity on board Navy-owned research vessels inhibits cyber security and limits research capabilities. For research vessels in the South Pacific, research security and cybersecurity are especially important. Funding is needed to update cyberinfrastructure and secure improved broadband connectivity on board America's Research Fleet. In addition to improving research vessel cybersecurity, these updates will revolutionize sea-going research and STEM education opportunities via improved telepresence, teaching at sea, timely sharing of data collections, and ship to shore collaborations.		0.000	8.000
<b>Congressional Add:</b> Classified data exchange environment for submarines <b>FY 2022 Accomplishments:</b> N/A <b>FY 2023 Plans:</b> - Develop a flexible environment for configuration management of data at varying levels of detail necessary for Program Offices to execute the DoD's Digital Transformation Strategy -Built as a government owned, government-controlled capability to eliminate associated license costs -Provide secure data exchange means between government and industry partners		0.000	2.750



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605013N / <i>Information Technology Development</i>	<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
-Structure the data for direct use in advanced 3D modeling, and other technologies supporting the Digital Transformation Strategy		
<b>Congressional Add:</b> Cyber supply chain risk management	0.000	5.000
<b>FY 2022 Accomplishments:</b> N/A		
<b>FY 2023 Plans:</b> Funding will support the development of a prototype Cyber Supply Chain Risk Management (C-SCRM) system to illuminate risk within the supply chain down to the individual component level. This will be accomplished through the development of system of system models utilizing techniques such as Model Based Systems Engineering (MBSE) instead of relying on classic document based approach. Analysis will leverage machine learning algorithms and artificial intelligence. Dashboards will be developed for those weapons systems that are aligned as well as a global dashboard for the Cyber Planning and Response Center. Some systems will require the creation of Software or Hardware Bill of Materials, in this case a standard data item description will be developed.		
This effort utilizes current logistics IT systems and their associated data lakes within an enterprise C-SCRM solution that will allow for sharing of C-SCRM data across platforms, resulting in reductions in cost for each program office and schedule to meet the acquisition timeline. It will also reduce risk across the enterprise by illuminating and preventing cyber vulnerabilities from propagating by sharing vulnerabilities to common critical systems and vendors before they find a way into the Fleet.		
<b>Congressional Adds Subtotals</b>	30.891	27.750

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
 CONDITION BASED MAINTENANCE PLUS:  
 Development services will be provided using a competitively awarded contract coordinated via NAVAIR's Aviation Logistics Environment (ALE) Program Management and supporting Contract Business Office, and will contain a matrix of tasks and required levels of performance. Follow on Contracts will utilize the same competitive system. The Services provided under the contract support acquisition will not encompass tasks inherently Governmental in nature, and Statements of Work will include a matrix that establishes the minimum acceptable performance standards.

MODEL BASED PRODUCT SUPPORT (MBPS):

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development	Project (Number/Name) 9999 / Congressional Adds
<p>NAVSEA 03R will modernize existing Command Technical Data (CTD), Configuration Management, Readiness and Provisioning / Outfitting logistics information technology systems. The MBPS project will follow a rapid delivery acquisition approach (incremental development and fielding of capabilities) to deliver an integrated and production ready solution.</p> <p>To date the MBPS Program has released three (3) contracts to support development:</p> <ol style="list-style-type: none"><li>1) Other Transaction Authority (OTA) contract for incremental development to include initial "pick and click" type training</li><li>2) Sole source contract awarded to PTC for Software as a Service (SaaS)</li><li>3) Phase III SBIR Task Order 2 to Frontier Technology Inc to deliver foundational training execution</li></ol> <p>A FAR based contract will be awarded in the future to support sustainment. Following Limited deployment (LD) completion, MBPS will be deployed across the Navy enterprise and Full Operational Capability (FOC) established. Following full deployment, MBPS will enter the sustainment period of its lifecycle.</p> <p>Aviation Product Lifecycle Management (AvPLM) Development services will be awarded using an existing contract that contains a matrix of tasks and required levels of performance.</p> <p>Actionable Analytics for reliable maintenance Development services will be awarded using an existing contract that contains a matrix of tasks and required levels of performance.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Refreshment (PLM)	Various	Various : Various	4.150	0.000		0.000		0.000		-		0.000	0.000	4.150	-
Cyber Innovations	Various	Various : Various	2.896	0.000		0.000		0.000		-		0.000	0.000	2.896	-
Cyber Solutions	Various	Various : Various	1.246	0.000		0.000		0.000		-		0.000	0.000	1.246	-
Aviation Innovative Cyber Solutions	Various	Various : Various	0.000	1.800	May 2022	0.000		0.000		-		0.000	0.000	1.800	-
Actionable Analytics Development	C/CPFF	GSA Aliant : Patuxent River, MD	0.000	3.361	May 2022	0.000		0.000		-		0.000	0.000	3.361	-
AvPLM Development	C/CPFF	GSA Aliant : Patuxent River, MD	0.000	1.931	May 2022	0.000		0.000		-		0.000	0.000	1.931	-
Advanced shipyard technologies	Various	Various : Various	0.000	4.592	Jun 2022	0.000		0.000		-		0.000	0.000	4.592	-
Cyber Supply Chain Risk Management	Various	Various : Various	0.000	0.000		1.500	May 2023	0.000		-		0.000	0.000	1.500	-
Information Technology Development C895	C/FFP	Beast Code : Fort Walton Beach, FL	0.000	0.000		2.750	Sep 2023	0.000		-		0.000	0.000	2.750	-
Broadband Network	Various	Various : Various	0.000	0.000		8.000	Sep 2023	0.000		-		0.000	0.000	8.000	-
Subtotal			8.292	11.684		12.250		0.000		-		0.000	0.000	32.226	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HW/SW (CBM+)	C/FFP	Washington HQ Services : Washington, DC	9.761	0.000		0.000		0.000		-		0.000	0.000	9.761	9.761
Software Development for (CBM+)	C/CPFF	Wyle : Patuxent River, MD	1.700	0.000		0.000		0.000		-		0.000	0.000	1.700	1.700
Systems Engineering (PLM)	WR	NSWC : Philadelphia, PA	0.980	0.000		0.000		0.000		-		0.000	0.000	0.980	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9999 / Congressional Adds					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering (PLM)	WR	NSWC : Crane, ID	1.664	0.000		0.000		0.000		-		0.000	0.000	1.664	-
Systems Engineering (PLM)	WR	NSWC : Port Hueneme, CA	3.944	0.000		0.000		0.000		-		0.000	0.000	3.944	-
Technical Support (PLM)	Various	Various : Various	2.865	0.000		0.000		0.000		-		0.000	0.000	2.865	-
Systems Engineering (PLM)	WR	NSWC : Carderock, MD	1.180	0.000		0.000		0.000		-		0.000	0.000	1.180	-
Systems Engineering (PLM)	WR	NSWC : Dahlgren, VA	0.730	0.000		0.000		0.000		-		0.000	0.000	0.730	-
Systems Engineering (PLM)	WR	NAVSEALOGCEN : Mechanicsburg, PA	4.368	0.000		0.000		0.000		-		0.000	0.000	4.368	-
Subtotal			27.192	0.000		0.000		0.000		-		0.000	0.000	27.192	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for (CBM+)	WR	NAWCAD : Patuxent River, MD	0.020	0.000		0.000		0.000		-		0.000	0.000	0.020	-
Cyber Solutions Mgmt Support	WR	NAWCAD : Patuxent River, MD	4.736	0.000		0.000		0.000		-		0.000	0.000	4.736	-
Cyber Solutions Mgmt Support	WR	NAWCWD : China Lake, CA	0.450	0.000		0.000		0.000		-		0.000	0.000	0.450	-
Cyber Solutions Mgmt Support	WR	NAWCWD : Point Mugu, CA	0.325	0.000		0.000		0.000		-		0.000	0.000	0.325	-
Aviation Innovative Cyber Solutions Mgmt Spt	WR	NAWCAD : Patuxent River, MD	0.000	6.888	Apr 2022	0.000		0.000		-		0.000	0.000	6.888	-
Cyber Solutions Classified Environ Mgmt Spt	WR	NAWCAD : Patuxent River, MD	0.000	5.792	Apr 2022	0.000		0.000		-		0.000	0.000	5.792	-
Warfare Mission Analysis Mgmt Spt	WR	NAWCAD : Patuxent River, MD	0.000	4.827	Apr 2022	5.000	Feb 2023	0.000		-		0.000	0.000	9.827	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605013N / Information Technology Development				Project (Number/Name) 9999 / Congressional Adds					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced shipyard technologies	WR	NAWCAD : Patuxent River, MD	0.000	1.200	Apr 2022	0.000		0.000		-		0.000	0.000	1.200	-
Actionable Analytics Mgmt Support	WR	NAWCAD : Patuxent River, MD	0.000	0.500	Apr 2022	0.000		0.000		-		0.000	0.000	0.500	-
Digital Twin Development	WR	NAWCAD : Patuxent River, MD	0.000	0.000		7.000	Feb 2023	0.000		-		0.000	0.000	7.000	-
Cyber Supply Chain Risk Management	WR	NAWCAD : Patuxent River, MD	0.000	0.000		3.500	Mar 2023	0.000		-		0.000	0.000	3.500	-
Subtotal			5.531	19.207		15.500		0.000		-		0.000	0.000	40.238	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			41.015	30.891		27.750		0.000		-		0.000	0.000	99.656	N/A
Remarks															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy</b>				<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0605013N / Information Technology Development			
				<b>Project (Number/Name)</b> 9999 / Congressional Adds			

	FY2021				FY2022				FY2023				FY2024				FY2025				FY2026				FY2027			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>ALE</b>																												
<b>Software Development</b>																												
Contract Award																												
Development Services for AVPLM Capability																												
<b>Test &amp; Evaluation</b>																												
Test & Evaluation																												
<b>Implementation</b>																												
Deployment Services for AvPLM capability																												

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

**R-1 Program Element (Number/Name)**

PE 0605013N / *Information Technology Development*

**Project (Number/Name)**

9999 / *Congressional Adds*

	FY2021				FY2022				FY2023				FY2024				FY2025				FY2026				FY2027			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Actionable Analytics (CBM)</b>																												
<b>Software Development</b>																												
<i>Contract Award</i>																												
<i>Development Services for Actionable Analytics (CBM)</i>																												
<b>Test &amp; Evaluation</b>																												
<i>Test &amp; Evaluation</i>																												
<b>Implementation</b>																												
<i>Deployment Services for Actionable Analytics (CBM)</i>																												

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

Date: March 2023

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R-1 Program Element (Number/Name)
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PE 0605013N / Information Technology Development

Project (Number/Name)	Start Date	End Date	Duration (Days)	Actual Cost	Budgeted Cost	Variance	Performance Index	Cost Variance	Cost Performance Index
101	2023-01-01	2023-01-15	15	10000	10000	0	1.0	0	1.0
102	2023-01-16	2023-01-31	15	15000	15000	0	1.0	0	1.0
103	2023-02-01	2023-02-15	15	12000	12000	0	1.0	0	1.0
104	2023-02-16	2023-02-28	13	18000	18000	0	1.0	0	1.0
105	2023-03-01	2023-03-15	15	11000	11000	0	1.0	0	1.0
106	2023-03-16	2023-03-31	15	14000	14000	0	1.0	0	1.0
107	2023-04-01	2023-04-15	15	13000	13000	0	1.0	0	1.0
108	2023-04-16	2023-04-30	15	16000	16000	0	1.0	0	1.0
109	2023-05-01	2023-05-15	15	10500	10500	0	1.0	0	1.0
110	2023-05-16	2023-05-31	15	12500	12500	0	1.0	0	1.0
111	2023-06-01	2023-06-15	15	11500	11500	0	1.0	0	1.0
112	2023-06-16	2023-06-30	15	14500	14500	0	1.0	0	1.0
113	2023-07-01	2023-07-15	15	10000	10000	0	1.0	0	1.0
114	2023-07-16	2023-07-31	15	15000	15000	0	1.0	0	1.0
115	2023-08-01	2023-08-15	15	12000	12000	0	1.0	0	1.0
116	2023-08-16	2023-08-31	15	18000	18000	0	1.0	0	1.0
117	2023-09-01	2023-09-15	15	11000	11000	0	1.0	0	1.0
118	2023-09-16	2023-09-30	15	14000	14000	0	1.0	0	1.0
119	2023-10-01	2023-10-15	15	10500	10500	0	1.0	0	1.0
120	2023-10-16	2023-10-31	15	12500	12500	0	1.0	0	1.0
121	2023-11-01	2023-11-15	15	11500	11500	0	1.0	0	1.0
122	2023-11-16	2023-11-30	15	14500	14500	0	1.0	0	1.0
123	2023-12-01	2023-12-15	15	10000	10000	0	1.0	0	1.0
124	2023-12-16	2023-12-31	15	15000	15000	0	1.0	0	1.0
125	2024-01-01	2024-01-15	15	12000	12000	0	1.0	0	1.0
126	2024-01-16	2024-01-31	15	18000	18000	0	1.0	0	1.0
127	2024-02-01	2024-02-15	15	11000	11000	0	1.0	0	1.0
128	2024-02-16	2024-02-28	13	14000	14000	0	1.0	0	1.0
129	2024-03-01	2024-03-15	15	13000	13000	0	1.0	0	1.0
130	2024-03-16	2024-03-31	15	16000	16000	0	1.0	0	1.0
131	2024-04-01	2024-04-15	15	10500	10500	0	1.0	0	1.0
132	2024-04-16	2024-04-30	15	12500	12500	0	1.0	0	1.0
133	2024-05-01	2024-05-15	15	11500	11500	0	1.0	0	1.0
134	2024-05-16	2024-05-31	15	14500	14500	0	1.0	0	1.0
135	2024-06-01	2024-06-15	15	10000	10000	0	1.0	0	1.0
136	2024-06-16	2024-06-30	15	15000	15000	0	1.0	0	1.0
137	2024-07-01								

9999 / Congressional Adds

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

## Project (Number/Name)

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## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Condition Based Maintenance Plus (CBM+)</b>				
Cyber Innovations in Classified Environments: Engineering, Integration and Experimentation	2	2022	3	2022
Cyber Innovations in Classified Environments: Pilot Demonstrations	3	2022	4	2022
Cyber Solutions for Aviation Systems and Facilities: Cyber Planning and Response Center (CPRC), Forensics, Incident Response	1	2022	4	2022
Cyber Solutions for Aviation Systems and Facilities: Cyber Naval Aviation Red Team	1	2022	4	2022
<b>Model Based Product Support - N-PLM Integrations LD 5</b>				
System Development:: LD 5 Requirements and Design	3	2022	4	2022
System Development:: Software and Data Integrations	4	2022	1	2023
Test & Evaluation:: LD 5 Demonstration and Testing	1	2023	2	2023
Deliveries:: LD 5 Production Release	2	2023	3	2023
<b>Naval Aviation Product Life Cycle Management (AvPLM)</b>				
Systems Development: Contract Award	3	2022	3	2022
Systems Development: Development Services for AvPLM capability	4	2022	4	2022
Test and Evaluation: Testing services for capability in support of Aviation PLM (AvPLM)	1	2023	2	2023
Implementation: Deployment services for AvPLM capability	3	2023	3	2023
<b>Aviation Innovative Cyber Solutions</b>				
Systems Development: Contract Award	2	2022	3	2022
Test and Evaluation: Cyber Risk Assessments	2	2022	4	2023
<b>Cyber Solutions in Classified Environments</b>				
Test and Evaluation: Commercial off-the-shelf (COTS) innovative enhancements	2	2022	4	2023

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0605013N / Information Technology Development

Project (Number/Name)

9999 / Congressional Adds

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Warfare Mission Analysis in Cyber Contested Environments</b>				
Test and Evaluation: DON Modeling and Simulation (M&S) capabilities	2	2022	4	2023
<b>Advanced shipyard technologies</b>				
Systems Development: Contract Award	2	2022	4	2022
Test and Evaluation: Advanced shipyard technologies	2	2022	4	2023
<b>Actionable Analytics for Reliable Maintenance</b>				
Systems Development: Contract Award	3	2022	3	2022
Systems Development: Development Services for Actionable Analytics (CBM)	4	2022	4	2022
Test and Evaluation: Testing services for Actionable Analytics (CBM)	1	2023	2	2023
Implementation: Deployment services for Actionable Analytics (CBM)	3	2023	3	2023
<b>Classified Data Exchange Environment for Submarine</b>				
Systems Development: Contract Award	2	2023	2	2023
Systems Development: Program Management	2	2023	3	2024
Systems Development: Research Labor	2	2023	3	2024
Systems Development: Develop Production Tool Labor	1	2022	3	2024

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0605024N / <i>Anti-Tamper Technology Support</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	23.033	8.393	7.271	8.340	-	8.340	11.569	10.564	9.918	10.121	Continuing	Continuing
2801: <i>Anti-Tamper</i>	4.180	1.392	1.582	1.626	-	1.626	1.635	1.670	1.704	1.740	Continuing	Continuing
3414: <i>Anti-Tamper Technology Support</i>	18.853	7.001	5.689	6.714	-	6.714	9.934	8.894	8.214	8.381	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Develops new and novel Anti-Tamper technologies for all Department of Navy weapon and combat systems. The technologies to be developed will be new countermeasures to prevent reverse engineering of critical U.S. military systems. The technologies include secure processing, sensors, architecture components, and enabling technologies.

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	8.426	7.271	10.375	-	10.375
Current President's Budget	8.393	7.271	8.340	-	8.340
Total Adjustments	-0.033	0.000	-2.035	-	-2.035
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.033	0.000			
• Program Adjustments	0.000	0.000	-2.114	-	-2.114
• Rate/Misc Adjustments	0.000	0.000	0.079	-	0.079

**Change Summary Explanation**

FY24 funding decrease due to contract award delays associated with changing to a Multiple Award Contract - Indefinite Delivery / Indefinite Quantity (MAC IDIQ) vehicle due to authorization changes in competitive procedures for Broad Agency Announcements (BAAs).

Schedule 3414: N/A

Schedule 2801: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605024N / Anti-Tamper Technology Support				Project (Number/Name) 2801 / Anti-Tamper			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2801: Anti-Tamper	4.180	1.392	1.582	1.626	-	1.626	1.635	1.670	1.704	1.740	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Anti-Tamper Program - Perform as the Navy Technical Process Owner for the Anti-Tamper (AT) systems engineering activity that is intended to prevent and/or delay the exploitation of critical technologies in U.S. Systems. Manage the research, design, development, implementation, and testing of AT measures. Coordinate with Department of Defense AT Executive Agent and implement Department of Navy AT policy in conjunction with the Deputy Assistant Secretary Navy. Manage Security and Information Security requirements commensurate with the requirements of ALL Navy Programs throughout their lifecycles.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Anti Tamper Support  <b>Articles:</b>  <b>FY 2023 Plans:</b> Continue championing new technology with a focused and disciplined approach of development, assessment, evaluation, and transition to meet Navy program AT requirements. Maintain role in Anti-Tamper policy development for implementation and execution by the SYSCOMs incorporating Navy program AT requirements. Provide secure facilities, networks, computers, video/telephone conference and support personnel for collateral and classified operational environments to enable Anti-Tamper implementation and execution by SYSCOM's programs, incorporating AT requirements.  <b>FY 2024 Base Plans:</b> Continue championing new technology with a focused and disciplined approach of development, assessment, evaluation, and transition to meet Navy program AT requirements. Maintain role in Anti-Tamper policy development for implementation and execution by the SYSCOMs incorporating Navy program AT requirements. Provide secure facilities, networks, computers, video/telephone conference and support personnel for collateral and classified operational environments to enable Anti-Tamper implementation and execution by SYSCOM's programs, incorporating AT requirements.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>								1.392	1.582	1.626	0.000	1.626
								-	-	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605024N / <i>Anti-Tamper Technology Support</i>		<b>Project (Number/Name)</b> 2801 / <i>Anti-Tamper</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Increase will be used to meet Anti-Tamper support demands and SYSCOM AT policy implementation.					
<b>Accomplishments/Planned Programs Subtotals</b>	1.392	1.582	1.626	0.000	1.626
<b>C. Other Program Funding Summary (\$ in Millions)</b>					
N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b>					
The program will fund project to provide secure facilities, networks, computers, video/telephone conference and support personnel for collateral and Special Program operational environments.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605024N / Anti-Tamper Technology Support						Project (Number/Name) 2801 / Anti-Tamper					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Product Development	WR	NAWCWD : China Lake, CA	3.305	1.092	Nov 2021	1.240	Nov 2022	1.291	Nov 2023	-		1.291	Continuing	Continuing	Continuing		
Subtotal			3.305	1.092		1.240		1.291		-		1.291	Continuing	Continuing	N/A		
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Management Support	WR	NAWCWD : China Lake, CA	0.875	0.300	Oct 2021	0.342	Oct 2022	0.335	Nov 2023	-		0.335	Continuing	Continuing	Continuing		
Subtotal			0.875	0.300		0.342		0.335		-		0.335	Continuing	Continuing	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			4.180	1.392		1.582		1.626		-		1.626	Continuing	Continuing	N/A		
Remarks																	

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PE 0605024N: *Anti-Tamper Technology Support*  
Navy

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Project (Number/Name)	Start Date	End Date	Duration (Days)	Team Lead	Status	Progress (%)	Budget (USD)	Actual Cost (USD)	Variance (USD)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-10	55	John Doe	Completed	100	120000	118000	2000	Low	Exceeded budget by 2000.
102/Beta	2023-02-01	2023-04-15	74	Jane Smith	In Progress	75	150000	155000	-5000	Medium	Minor cost overrun.
103/Gamma	2023-03-01	2023-05-20	79	Mike Johnson	On Hold	20	180000	180000	0	High	Waiting for client approval.
104/Delta	2023-04-01	2023-06-10	70	Sarah Lee	Planned	0	90000	90000	0	Low	Not yet started.
105/Epsilon	2023-05-01	2023-07-15	75	David Kim	On Hold	10	110000	110000	0	Medium	Resource allocation pending.
106/Zeta	2023-06-01	2023-08-10	71	Emily White	Planned	0	80000	80000	0	Low	Not yet started.
107/Eta	2023-07-01	2023-09-15	76	Chris Brown	On Hold	5	130000	130000	0	Medium	Waiting for funding.
108/Theta	2023-08-01	2023-10-10	70	Alex Green	Planned	0	70000	70000	0	Low	Not yet started.
109/Iota	2023-09-01	2023-11-15	75	Mia Black	On Hold	0	100000	100000	0	Medium	Waiting for client approval.
110/Kappa	2023-10-01	2023-12-10	70	Noah Grey	Planned	0	60000	60000	0	Low	Not yet started.

PE 0605024N / Anti-Tamper Technology Support

2801 / Anti-Tamper

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605024N / <i>Anti-Tamper Technology Support</i>	<b>Project (Number/Name)</b> 2801 / <i>Anti-Tamper</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2801</b>				
Product Development: Anti Tamper Technology Development Plan	1	2022	4	2028
Intelligence Analysis: Anti Tamper Technology Intelligence Analysis	1	2022	4	2028
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2022	1	2022	1	2022
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2022	3	2022	3	2022
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2023	1	2023	1	2023
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2023	3	2023	3	2023
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2024	1	2024	1	2024
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2024	3	2024	3	2024
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2025	1	2025	1	2025
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2025	3	2025	3	2025
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2026	1	2026	1	2026
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2026	3	2026	3	2026
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2027	1	2027	1	2027
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2027	3	2027	3	2027
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2028	1	2028	1	2028
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2028	3	2028	3	2028



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605024N / Anti-Tamper Technology Support				Project (Number/Name) 3414 / Anti-Tamper Technology Support			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3414: Anti-Tamper Technology Support	18.853	7.001	5.689	6.714	-	6.714	9.934	8.894	8.214	8.381	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project develops new and novel Anti-Tamper technologies for all Department of Navy weapon and combat systems. The technologies to be developed will be new countermeasures to prevent reverse engineering of critical U.S. military systems. The technologies include secure processing, sensors, architecture components, and enabling technologies. Low technology readiness level projects will be tested for maturation and implemented to protect US technologies. Government laboratory expertise will mature in Anti Tamper technologies and techniques. Integration of various techniques will enhance the strength of the protection scheme which limits the opportunities to exploit our technological advantage on the battlefield.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Anti Tamper Technology Development	7.001	5.689	6.714	0.000	6.714
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> This project develops new and novel Anti-Tamper technologies for all Department of Navy weapon and combat systems. The technologies to be developed will be new countermeasures to prevent reverse engineering of critical U.S. military systems. The technologies include secure processing, sensors, secure architecture components, and enabling technologies.					
<b>FY 2023 Plans:</b> Continue development of new and novel technologies that will become reverse engineering countermeasures for Department of the Navy (DoN) weapon and combat systems. The project will include awarding technology development contracts and securing engineering support from DoN engineering facilities. Test and perform technical evaluations of low technical readiness level projects for implementation to protect US technologies. Extensively evaluate the technology prototypes and demonstration units in the labs, which will provide increased technical information and feedback to the technology developers.					
<b>FY 2024 Base Plans:</b> Continue development of new and novel technologies that will become reverse engineering countermeasures for Department of the Navy (DoN) weapon and combat systems. The project will include awarding technology development contracts and securing engineering support from DoN engineering facilities. Test and perform technical evaluations of low technical readiness level projects for implementation to protect US technologies.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605024N / <i>Anti-Tamper Technology Support</i>		<b>Project (Number/Name)</b> 3414 / <i>Anti-Tamper Technology Support</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>Extensively evaluate the technology prototypes and demonstration units in the labs, which will provide increased technical information and feedback to the technology developers. The technology development tasks of QuickSilver (QSD) and Advanced Manufacturing for Technology Protection (AMTP) will consume the additional FY24 funding. QSD is working on transitioning technologies which is above-and-beyond the technical work currently scoped and AMTP has gained so much community interest that the AMTP Consortium is needing to expand the OTA technology demos. These technology development tails are crucial to keeping the technologies headed towards transition.</p> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase between FY23 and FY24 will be used to fully fund technology development tasks, narrow the technology investment gap and provide the necessary security postures. Extensively evaluate the technology prototypes and provide increased technical information and feedback to the technology developers.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		7.001	5.689	6.714	0.000	6.714
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
This is a non-ACAT program. The strategy will be to issue technology development contracts and use Department of Navy (DoN) labs for technology development, along with using DoN engineering organizations for engineering support.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605024N / Anti-Tamper Technology Support						Project (Number/Name) 3414 / Anti-Tamper Technology Support			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev	WR	NAWCWD : China Lake, CA	13.221	4.900	Oct 2021	4.004	Oct 2022	4.816	Oct 2023	-		4.816	Continuing	Continuing	Continuing
Subtotal			13.221	4.900		4.004		4.816		-		4.816	Continuing	Continuing	N/A
Remarks Increase from FY 2023 to FY 2024 will be used to extensively evaluate the technology prototypes and provide increased technical information and feedback to the technology developers.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake, CA	5.632	2.101	Oct 2021	1.685	Oct 2022	1.898	Oct 2023	-		1.898	Continuing	Continuing	Continuing
Subtotal			5.632	2.101		1.685		1.898		-		1.898	Continuing	Continuing	N/A
Remarks Increase from FY 2023 to FY 2024 will be used to extensively evaluate the technology prototypes and provide increased technical information and feedback to the technology developers.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			18.853	7.001		5.689		6.714		-		6.714	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023													
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605024N / Anti-Tamper Technology Support										Project (Number/Name) 3414 / Anti-Tamper Technology Support									
Proj 3414		FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Anti Tamper Support																													
Contract Awards		▲				▲				▲				▲				▲				▲				▲			
Technology Development																													
		Anti Tamper Technology Development																											
Lab Support																													
		Anti Tamper Technology Lab Support																											
Gap Analysis		▲				▲				▲				▲				▲				▲				▲			
2024PB - 0605024N - 3414																													

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0605024N / Anti-Tamper Technology Support

Project (Number/Name)

3414 / Anti-Tamper Technology Support

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3414</b>				
Contract Awards: Anti Tamper Technology Contract Award 2022	2	2022	2	2022
Contract Awards: Anti Tamper Technology Contract Award 2023	2	2023	2	2023
Contract Awards: Anti Tamper Technology Contract Award 2024	2	2024	2	2024
Contract Awards: Anti Tamper Technology Contract Award 2025	2	2025	2	2025
Contract Awards: Anti Tamper Technology Contract Award 2026	2	2026	2	2026
Contract Awards: Anti Tamper Technology Contract Award 2027	2	2027	2	2027
Contract Awards: Anti Tamper Technology Contract Award 2028	2	2028	2	2028
Technology Development: Anti Tamper Technology Development	2	2022	4	2028
Lab Support: Anti Tamper Technology Lab Support	1	2022	1	2028
Gap Analysis: Anti Tamper Technology Gap Analysis 2022	1	2022	1	2022
Gap Analysis: Anti Tamper Technology Gap Analysis 2023	1	2023	1	2023
Gap Analysis: Anti Tamper Technology Gap Analysis 2024	1	2024	1	2024
Gap Analysis: Anti Tamper Technology Gap Analysis 2025	1	2025	1	2025
Gap Analysis: Anti Tamper Technology Gap Analysis 2026	1	2026	1	2026
Gap Analysis: Anti Tamper Technology Gap Analysis 2027	1	2027	1	2027
Gap Analysis: Anti Tamper Technology Gap Analysis 2028	1	2028	1	2028

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0605180N / TACAMO MODERNIZATION							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	0.000	48.644	502.493	213.743	-	213.743	797.539	752.677	350.379	459.828	Continuing	Continuing
3259: TACAMO Recap	0.000	48.644	502.493	213.743	-	213.743	797.539	752.677	350.379	459.828	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The E-6 Take Charge and Move Out (TACAMO) Recapitalization Program (E-XX) provides for air vehicle replacement and mission systems modernization to augment and eventually replace the aging E-6B aircraft for the TACAMO mission. The TACAMO mission provides an airborne capability for survivable, endurable and reliable airborne command, control and communications between the United States (U.S.) National Command Authority (NCA) and the U.S. strategic forces. This mission is critical in the deterrence and management of a nuclear conflict. A dedicated communications platform, TACAMO aircraft feature the ability to communicate on virtually every radio frequency band from very low frequency (VLF) up through advanced extremely high frequency (AEHF) using a variety of modulations, encryptions and networks, minimizing the likelihood an emergency message being jammed by an enemy. Continued effort is needed to perform modeling and simulation, requirements refinement, contract development, technical evaluations and non-recurring engineering. Funding is for requirements development, modernization of mission systems, reducing integration risk on aircraft, increasing reliability and maintainability, cyber resilience, procurement of test assets, secure program facilities and Engineering & Manufacturing Development (EMD) contract development for Milestone B (MSB) program initiation decision.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	50.592	554.193	753.077	-	753.077
Current President's Budget	48.644	502.493	213.743	-	213.743
Total Adjustments	-1.948	-51.700	-539.334	-	-539.334
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-51.700			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.948	0.000			
• Program Adjustments	0.000	0.000	-542.496	-	-542.496
• Rate/Misc Adjustments	0.000	0.000	3.162	-	3.162

**Change Summary Explanation**

FY 2024 has been reduced by \$539.3M since the previous President's budget submission for the following adjustments:

Reduction of \$400.8M due to EMD contract award moving to FY25 after technical discovery necessitated longer proposal period, reduction of \$141.7M to support P-691 MILCON effort and increase of \$3.2M for other miscellaneous/rate adjustments.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATION	
Schedule: The R4 schedule has been updated to reflect the current program schedule.		



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATION				Project (Number/Name) 3259 / TACAMO Recap			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3259: TACAMO Recap	0.000	48.644	502.493	213.743	-	213.743	797.539	752.677	350.379	459.828	Continuing	Continuing
Quantity of RDT&E Articles		-	3	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The E-6 Take Charge and Move Out (TACAMO) Recapitalization Program (E-XX) provides for air vehicle replacement and mission systems modernization to augment and eventually replace the aging E-6B aircraft for the TACAMO mission. The TACAMO mission provides an airborne capability for survivable, endurable and reliable airborne command, control and communications between the United States (U.S.) National Command Authority (NCA) and the U.S. strategic forces. This mission is critical in the deterrence and management of a nuclear conflict. A dedicated communications platform, TACAMO aircraft feature the ability to communicate on virtually every radio frequency band from very low frequency (VLF) up through advanced extremely high frequency (AEHF) using a variety of modulations, encryptions and networks, minimizing the likelihood an emergency message being jammed by an enemy. Continued effort is needed to perform modeling and simulation, requirements refinement, contract development, technical evaluations and non-recurring engineering. Funding is for requirements development, modernization of mission systems, reducing integration risk on aircraft, increasing reliability and maintainability, cyber resilience, procurement of test assets, secure program facilities and Engineering & Manufacturing Development (EMD) contract development for Milestone B (MSB) program initiation decision.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Product Development	21.083	450.077	160.174	0.000	160.174
<b>Articles:</b>	-	3	-	-	-
<b>FY 2023 Plans:</b> Fully fund three airframe test assets (quantity moved from FY 2022 to FY 2023 in FY 2023 request). One aircraft is for Air Vehicle testing and two aircraft are for mission systems testing, allowing simultaneous mission system, flight and ground test, and correction of deficiencies. Test airframe procurement will include all E-XX peculiar parts. FY 2023 will continue funding for VLF development, airframe modification, and engineering contracts and will begin funding government furnished equipment (GFE) for mission system integration.					
<b>FY 2024 Base Plans:</b> FY 2024 will continue funding for VLF development, airframe modification, engineering contracts, and EMD contract development.					
Airframe HW Development is for additional initial spares for test assets procured in FY2023.					
Air Vehicle Integration comprises non-recurring engineering (NRE) to continue the development and testing necessary for design changes and modifications to the C-130J-30 baseline configuration and the test aircraft.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATI ON		Project (Number/Name) 3259 / TACAMO Recap		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
This includes power generation systems, cooling, flight deck avionics, Electric Magnetic Pulse (EMP) hardening, cyber hardening, and structural modifications to support integration of E-XX mission system equipment.						
Very Low Frequency (VLF) Hardware Development includes modernization of legacy E-6B High Power Transmit System power amplifier and trailing wire antenna assemble hardware for increased performance, reliability and maintainability, reduced weight and volume, and lower life cycle costs.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY2023 to FY 2024 Airframe Hardware Development decrease due to all three C-130J-30 test assets being fully funded in FY 2023.						
Title: Program Management and Support		27.561	52.416	53.569	0.000	53.569
Articles:		-	-	-	-	-
FY 2023 Plans: Funding provided to support the increased need for technical expertise and support for development efforts of VLF system modernization, airframe modification design, mission systems integration, program management, engineering and logistics tasks for E-XX technical and programmatic reviews to prepare for Milestone B in fourth quarter of FY 2023 and parallel competitive EMD contract development and subsequent award in first quarter of FY 2024.						
FY 2024 Base Plans: Funding provided to support the need for technical expertise and support for development efforts of mission systems, VLF system modernization, airframe modification design, mission systems integration, program management, engineering, test, training, and logistics tasks for E-XX technical and programmatic reviews in preparation for Preliminary Design Review (PDR) and Critical Design Review (CDR).						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 increase due to inflation factors.						
Accomplishments/Planned Programs Subtotals		48.644	502.493	213.743	0.000	213.743

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATI ON	Project (Number/Name) 3259 / TACAMO Recap
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A		
<b>Remarks</b>		
<b>D. Acquisition Strategy</b> Research, Development, Test & Evaluation, Navy (RDT&E N) Project Unit 3259 funds E-XX Program requirements for analyses, requirements development, test asset procurement (C-130J-30 aircraft), Airframe/VLF NRE contracts, and EMD contract. The mission concept of operations, system capability requirements, and material solution will continue design maturation per the acquisition strategy and the continued program life cycle cost estimates in support of program milestone decision reviews. Execution of NRE contracts for Airframe and VLF continue. EMD Mission Systems Integration awards in first quarter FY 2025 with Preliminary Design Review (PDR) and Critical Design Review (CDR) soon after award.		

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605180N / TACAMO MODERNIZATION

## Project (Number/Name)

3259 / TACAMO Recap

## Product Development (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HW Development - Airframe	C/FPIF	Lockheed Martin : Marietta, GA	0.000	0.000		343.287	Mar 2023	12.215	Jan 2024	-		12.215	Continuing	Continuing	Continuing
Primary HW Development - Air Vehicle Integration	C/CPFF	Lockheed Martin : Marietta, GA	0.000	11.796	Mar 2022	59.206	Mar 2023	76.732	Nov 2023	-		76.732	Continuing	Continuing	Continuing
Primary HW Development - VLF	C/CPFF	Collins Aerospace : Richardson, TX	0.000	9.287	Feb 2022	47.584	Nov 2022	71.227	Nov 2023	-		71.227	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	21.083		450.077		160.174		-		160.174	Continuing	Continuing	N/A

## Remarks

FY 2024 Airframe Hardware Development includes additional spares needed to support the test aircraft.

FY 2024 Air Vehicle Hardware Development comprises non-recurring engineering (NRE) to continue development and testing necessary for design changes and modifications to the C-130J-30 baseline configuration and the test aircraft. This includes power generation systems, cooling, flight deck avionics, EMP hardening, cyber hardening, and structural modifications to support integration of E-XX mission system equipment.

FY 2024 Very Low Frequency (VLF) Hardware Development increases modernization of legacy E-6B High Power Transmit System power amplifier and trailing wire antenna assemblies hardware for increased performance, reliability and maintainability, reduced weight and volume, and lower life cycle costs.

## Support (\$ in Millions)

				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCAD : Patuxent River	0.000	2.489	Nov 2021	11.145	Nov 2022	11.390	Nov 2023	-		11.390	Continuing	Continuing	Continuing
Development Support	Various	Various : Various	0.000	4.814	Nov 2021	8.648	Nov 2022	8.838	Nov 2023	-		8.838	Continuing	Continuing	Continuing
Integrated Logistics Support	WR	NAWCAD : Patuxent River	0.000	2.096	Nov 2021	4.411	Nov 2022	4.508	Nov 2023	-		4.508	Continuing	Continuing	Continuing
Integrated Logistics Support CSS	Various	Various : Various	0.000	0.520	Nov 2021	2.372	Nov 2022	2.424	Nov 2023	-		2.424	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	0.000	9.657	Nov 2021	12.942	Nov 2022	13.227	Nov 2023	-		13.227	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWCTSD : Orlando, Florida	0.000	0.815	Nov 2021	0.801	Nov 2022	0.819	Nov 2023	-		0.819	Continuing	Continuing	Continuing

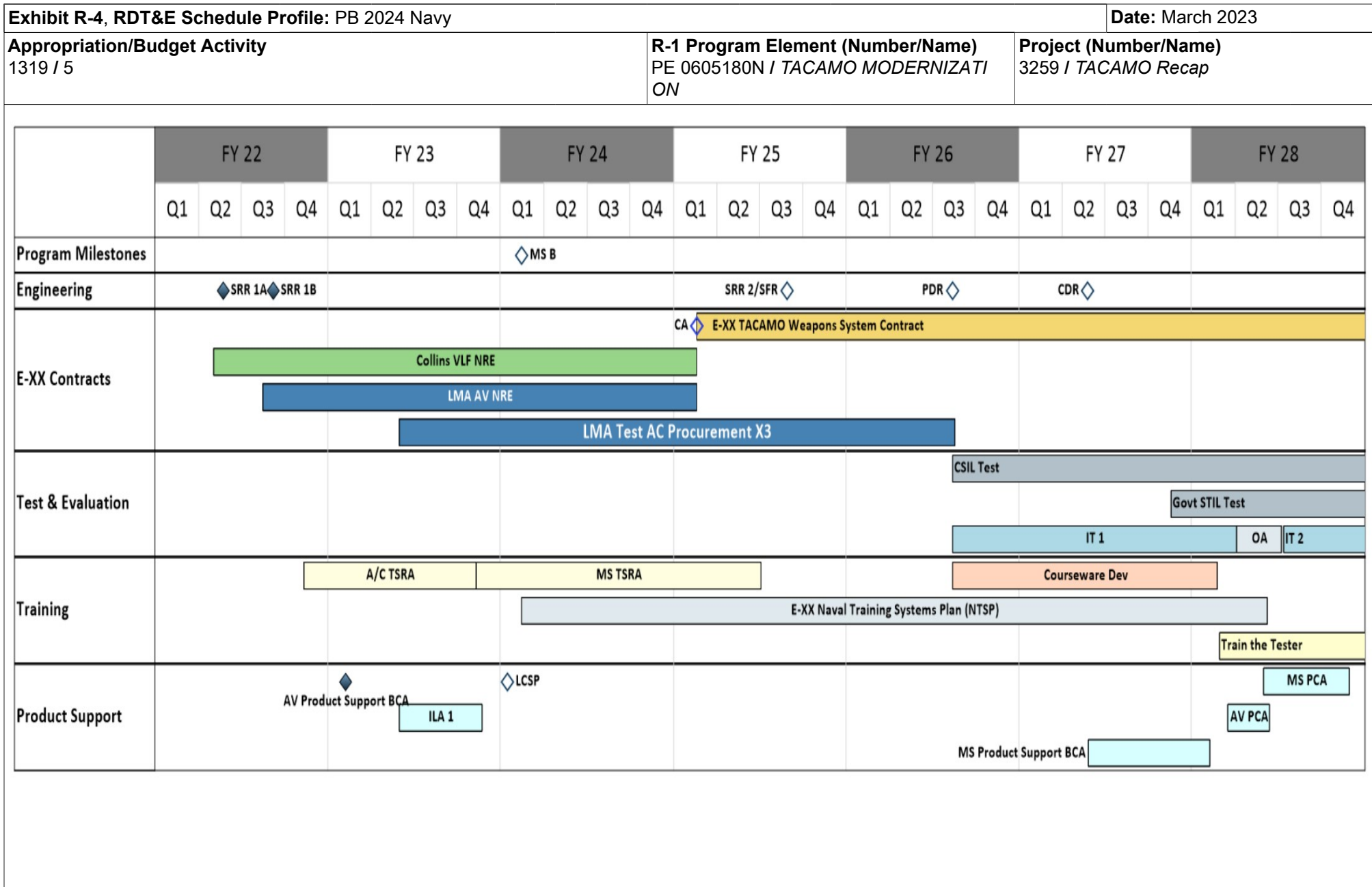
## UNCLASSIFIED

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0605180N / TACAMO MODERNIZATI ON						<b>Project (Number/Name)</b> 3259 / TACAMO Recap			
<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Contractor Engineering Support	Various	Various : Various	0.000	0.389	Nov 2021	1.139	Nov 2022	1.164	Nov 2023	-		1.164	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	20.780		41.458		42.370		-		42.370	Continuing	Continuing	N/A
<b>Remarks</b> Support is necessary for MSB efforts that must be completed in FY2024 to support major EMD contract award scheduled for first quarter FY2025.															
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD.	0.000	1.445	Nov 2021	2.086	Nov 2022	2.132	Nov 2023	-		2.132	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	COMOPTEVFOR : Norfolk, VA	0.000	0.117	Nov 2021	0.314	Nov 2022	0.321	Nov 2023	-		0.321	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake, CA	0.000	0.260	Nov 2021	0.265	Nov 2023	0.271	Nov 2023	-		0.271	0.000	0.796	-
<b>Subtotal</b>			0.000	1.822		2.665		2.724		-		2.724	Continuing	Continuing	N/A
<b>Remarks</b> Test and Evaluation (T&E) support growth is necessary for MSB efforts that must be completed in FY2024 to support major EMD contract award scheduled for first quarter FY2025.															
<b>Management Services (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	0.000	0.835	Nov 2021	2.500	Nov 2022	2.555	Nov 2023	-		2.555	Continuing	Continuing	Continuing
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	2.088	Nov 2021	3.538	Nov 2022	3.616	Nov 2023	-		3.616	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATI ON				Project (Number/Name) 3259 / TACAMO Recap					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Davis Defense Group : Patuxent River, MD	0.000	1.994	Nov 2021	2.062	Nov 2022	2.107	Nov 2023	-		2.107	Continuing	Continuing	Continuing
Travel	Various	Various : Various	0.000	0.042	Oct 2021	0.193	Oct 2022	0.197	Oct 2023	-		0.197	Continuing	Continuing	Continuing
Subtotal			0.000	4.959		8.293		8.475		-		8.475	Continuing	Continuing	N/A
Remarks															
Program Management support is necessary for MSB efforts that must be completed in FY2024 to support major EMD contract award scheduled for first quarter FY 2025.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	48.644		502.493		213.743		-		213.743	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605180N / TACAMO MODERNIZATION

## Project (Number/Name)

3259 / TACAMO Recap

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3259</b>				
Acquisition Milestones & Program Management: Milestone B	1	2024	1	2024
Engineering: System Requirements Review-1A	2	2022	2	2022
Engineering: System Requirements Review-1B	3	2022	3	2022
Engineering: System Requirements Review 2/System Function Review	3	2025	3	2025
Engineering: Preliminary Design Review (PDR) (date: Controlled Unclassified Information)	3	2026	3	2026
Engineering: Critical Design Review (CDR) (date: Controlled Unclassified Information)	2	2027	2	2027
Contracts: Very Low Frequency Non-Recurring Engineering	2	2022	1	2025
Contracts: Air Vehicle Non-Recurring Engineering	3	2022	1	2025
Contracts: Airframe test assets, including C-130J (x3)	2	2023	3	2026
Contracts: TACAMO Weapons System Contract	1	2025	4	2028
Test & Evaluation: CSIL Test	3	2026	4	2028
Test & Evaluation: Government STIL Test	4	2027	4	2028
Test & Evaluation: IT 1	3	2026	1	2028
Test & Evaluation: OA	2	2028	2	2028
Test & Evaluation: IT 2	3	2028	4	2028
Training: A/C TSRA	4	2022	4	2023
Training: MS TSRA	4	2023	2	2025
Training: Naval Training Systems Plan (NTSP)	4	2024	4	2028
Training: Courseware Development	3	2026	1	2028
Training: Train the Tester	1	2028	4	2028



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605180N / TACAMO MODERNIZATI ON		Project (Number/Name) 3259 / TACAMO Recap	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Product Support: Air Vehicle Product Support Baseline Configuration Audit (BCA)		1	2023	1	2023
Product Support: Integrated Logistics Assessment-1		2	2023	4	2023
Product Support: LCSP		1	2024	1	2024
Product Support: Mission System Product Support BCA		2	2027	1	2028
Product Support: Air Vehicle Physical Configuration Audit (PCA)		1	2028	2	2028
Product Support: Mission System PCA		2	2028	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605212M / CH-53K							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,265.690	212.181	220.240	222.288	-	222.288	39.682	26.930	61.961	64.763	Continuing	Continuing
3059: CH-53K Development	1,265.690	212.181	220.240	179.773	-	179.773	23.379	0.000	0.000	0.000	0.000	1,901.263
3069: CH-53K Improvement	0.000	0.000	0.000	42.515	-	42.515	16.303	26.930	61.961	64.763	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 390												
Note Project 3069 is a New Start in FY 2024.												
A. Mission Description and Budget Item Justification The CH-53K is a next generation fly by wire heavy-lift helicopter that provides significant improvements in range, payload, performance, cargo handling, turn-around times, reliability, maintainability, interoperability and survivability. It is the only marinized heavy-lift helicopter in the world and the Department of Defense's only heavy-lift helicopter. The CH-53K mission is to support the Marine Air-Ground Task Force (MAGTF) Commander by providing assault support transport of heavy equipment, combat troops, and supplies, day or night under all weather conditions during expeditionary, joint, or combined operations.  - Provides a greater payload at greater ranges than any current or emerging rotorcraft to support the rapid transition of Joint and Coalition forces from contact to blunt layer activities in a contested environment. - Addresses current connector shortfalls making it a critical enabler in the execution of distributed operations; a key component of the Marine Corps' Expeditionary Advanced Base Operations concept which supports the President's National Security Strategy, the Tri-Service Maritime Strategy and the Navy's Distributed Maritime Operational concept. - Capable of integrating into the current battlefield and taking advantage of future technologies, such as manned/unmanned teaming and MAGTF digital interoperability. - The modern fly by wire system provides greater safety, survivability, and reliability compared to other joint rotorcraft. - When compared to the legacy aircraft, improves reliability and decreases operations and support costs by reducing maintenance man hours per flight hour while maximizing work effectiveness and efficiency.  Total aircraft quantities for the CH-53K program are 205 helicopters. This currently includes one Ground Test Vehicle (GTV), four Engineering Development Models (EDMs) for System Development and Demonstration (SDD), and four System Demonstration Test Articles (SDTAs) purchased with Research, Development, Test & Evaluation (RDT&E) funds. The remaining 196 aircraft are funded with Aircraft Procurement, Navy (APN).  The CH-53K SDD program received a successful Milestone C decision on 4 April 2017. Initial Operational Test & Evaluation (IOT&E) completed April 2022, Initial Operating Capability (IOC) achieved in May 2022, Full Rate Production (FRP) approved in December 2022.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605212M / CH-53K				
Remaining Project Unit (PU) 3059 funding is required to complete SDD and test activities.						
PU 3069 begins in FY2024 and funds establishment of the Heavy Lift program's organic test and evaluation efforts and follow-on software development. This effort will support correction of deficiencies for fleet aircraft and developmental test to facilitate Preplanned Product Improvement (P3I) requirements and Reliability & Maintainability initiatives.						
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to a full-rate production decision.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		256.903	220.240	144.310	-	144.310
Current President's Budget		212.181	220.240	222.288	-	222.288
Total Adjustments		-44.722	0.000	77.978	-	77.978
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-36.351	0.000			
• SBIR/STTR Transfer		-8.371	0.000			
• Program Adjustments		0.000	0.000	65.452	-	65.452
• Rate/Misc Adjustments		0.000	0.000	12.526	-	12.526
Change Summary Explanation						
Funding changes:						
FY24 overall increase of \$77.978M:						
\$22.937M added to align funding to the end of SDD and the current OTB requirements.						
\$12.526M added for inflation and miscellaneous/rate adjustments.						
\$42.515M added for commencement of PU 3069.						
FY2022:						
Reduced for SBIR \$8.371M.						
Schedule changes:						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0605212M / CH-53K	
Validation of Envelope Expansion added Q1 FY22 through Q1 FY24. SDD Closeout added Q1 FY24 through Q3 FY25.		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605212M / CH-53K				Project (Number/Name) 3059 / CH-53K Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3059: CH-53K Development	1,265.690	212.181	220.240	179.773	-	179.773	23.379	0.000	0.000	0.000	0.000	1,901.263
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 390												
A. Mission Description and Budget Item Justification												
The CH-53 is the only marinized heavy-lift helicopter in the world and is the Marine Corps only heavy-lift helicopter. The CH-53 mission is to conduct expeditionary heavy-lift assault transport of armored vehicles, equipment and personnel to support distributed operations deep inland from a sea-based center of operations. The CH-53E "Super Stallion" was introduced into operations in 1980 as an upgrade version of the CH-53D. The CH-53E has developed performance degradation, fatigue life, interoperability, maintenance supportability, and other operational concerns. An improved CH-53 is needed to support Marine Air-Ground Task Force heavy-lift requirements in the 21st century joint environment. The CH-53K "King Stallion" will provide improvements in range and payload, performance, cargo handling, turn-around times, reliability and maintainability, interoperability, and survivability. The CH-53K program is required to provide full system capability, including shipboard compatibilities, at Initial Operational Capability (IOC).												
Total aircraft quantities for the CH-53K program are 205 helicopters. This currently includes one Ground Test Vehicle (GTV) and four Engineering Development Models (EDMs) for System Development and Demonstration (SDD) purchased with Research, Development, Test & Evaluation (RDT&E) funds. Of the remaining 200 aircraft, four are System Demonstration Test Articles and 196 are funded with APN.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Air Vehicle Development  Articles:  FY 2023 Plans: Continue to develop software and correct deficiencies discovered during IOT&E in support of the final deployable configuration.  FY 2024 Base Plans: Begin close-out activities associated with software development and remaining correction of deficiencies discovered during IOT&E in support of the final deployable configuration.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement:								161.240	169.751	138.420	0.000	138.420
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605212M / CH-53K		Project (Number/Name) 3059 / CH-53K Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Decrease is a result of fewer corrections required as the program moves closer to the final deployable configuration.						
<b>Title:</b> Integrated Logistics Support and Test & Evaluation (T&E) <div><b>Articles:</b></div>		41.533 -	41.670 -	34.074 -	0.000 -	34.074 -
<b>FY 2023 Plans:</b> Continue to refine and validate Product Support Packages and Supportability Test Plans to support the final deployable configuration.						
<b>FY 2024 Base Plans:</b> Finalize Product Support Packages and Supportability Test Plans to support the final deployable configuration.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease is due to a reduction in test activities as the program moves towards completion and begins close-out activities.						
<b>Title:</b> Systems Engineering & Project Management <div><b>Articles:</b></div>		9.408 -	8.819 -	7.279 -	0.000 -	7.279 -
<b>FY 2023 Plans:</b> Continue to perform in-house, field activity and contractor execution of test program Integrated Product Teams. Continue to plan for, and execute, Correction of Deficiencies identified during component qualification and flight test. Efforts include engineering, program management and test program travel.						
<b>FY 2024 Base Plans:</b> Continue to perform in-house, field activity and contractor execution of development and test program Integrated Product Teams in support of close-out activities. Finalize plans for, and execute, remaining Correction of Deficiencies identified during component qualification and flight test. Efforts include engineering, program management, and test program travel.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605212M / CH-53K	<b>Project (Number/Name)</b> 3059 / CH-53K Development	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Decrease is due to reduced contractor and government engineering and program management support.					
<b>Accomplishments/Planned Programs Subtotals</b>	212.181	220.240	179.773	0.000	179.773

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN / 0158 / 0158C: <i>CH-53K (Heavy Lift)</i>	1,669.297	2,218.302	2,154.617	-	2,154.617	2,740.876	2,824.133	2,718.603	2,772.997	5,784.177	27,757.139
• APN / 0605: CH-53K <i>- Initial Spares</i>	163.577	19.666	58.432	-	58.432	27.761	59.633	43.898	48.430	94.480	515.877
• APN / 0528: H-53 Series	64.273	28.577	31.188	-	31.188	38.103	41.333	159.956	169.676	Continuing	Continuing
• RDTE/0605212M/3069: <i>CH-53K Improvement</i>	0.000	0.000	42.515	-	42.515	16.303	26.930	61.961	64.763	Continuing	Continuing

**Remarks**

APN/0158/0158C: CH-53K Advanced and Regular Procurement (APN-1)  
 APN/0605: CH-53K Spares (APN-6)  
 APN/0528: CH-53K OSIP #s 007-19 Correction of Deficiencies  
 RDTE/3069: CH-53K Improvement

**D. Acquisition Strategy**

On 30 March 2017, the DAB reviewed the CH-53K program for a MS C decision allowing entry into Production and the ADM was signed by USD AT&L on 4 April 2017 resulting in an ACAT 1C designation.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605212M / CH-53K	<b>Project (Number/Name)</b> 3059 / CH-53K Development
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development: SDD / SDTA Air Vehicle	SS/CPIF	Sikorsky : Stratford, CT	922.307	125.196	Feb 2022	146.707	Dec 2022	126.990	Dec 2023	-		126.990	11.222	1,332.422	1,332.422
GFE: Engines	SS/CPFF	GE : Lynn, MA	17.881	0.000		0.000		0.000		-		0.000	0.000	17.881	17.881
Primary Hardware Development-Other Sikorsky	TBD	Sikorsky : Stratford, CT	126.186	30.451	Jan 2022	17.581	Mar 2023	9.379	Jan 2024	-		9.379	0.000	183.597	183.597
Primary Hardware Development	Various	Various : Various	36.449	5.593	Apr 2022	5.463	Apr 2023	2.051	Apr 2024	-		2.051	0.000	49.556	49.556
<b>Subtotal</b>			1,102.823	161.240		169.751		138.420		-		138.420	11.222	1,583.456	N/A

**Remarks**

FY24 funding is in direct support of close-out activities associated with software development and remaining correction of deficiencies discovered during IOT&E in support of the final deployable configuration.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	NAWCAD : Lakehurst, NJ	5.971	2.124	Mar 2022	2.189	Dec 2022	2.147	Dec 2023	-		2.147	0.000	12.431	-
Integrated Logistics Support	WR	NAWCAD : Lakehurst, NJ	2.679	0.169	Mar 2022	0.175	Mar 2023	0.140	Dec 2023	-		0.140	0.000	3.163	-
Integrated Logistics Support	WR	Various : Various	6.134	0.555	Mar 2022	0.560	Mar 2023	0.448	Dec 2023	-		0.448	0.265	7.962	-
Integrated Logistics Support	C/CPFF	NSI : Lexington Park, MD	4.250	0.588	Apr 2022	0.594	Apr 2023	0.475	Apr 2024	-		0.475	0.282	6.189	6.189
Government Engineering Support	WR	NAWCTSD : Orlando, FL	1.151	0.200	Mar 2022	0.206	Mar 2023	0.165	Dec 2023	-		0.165	0.000	1.722	-
<b>Subtotal</b>			20.185	3.636		3.724		3.375		-		3.375	0.547	31.467	N/A

## UNCLASSIFIED

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605212M / CH-53K	<b>Project (Number/Name)</b> 3059 / CH-53K Development
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	Various : Various	3.200	2.193	Dec 2021	2.719	Jan 2023	2.575	Dec 2023	-		2.575	0.146	10.833	-
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	82.062	32.737	Dec 2021	32.946	Jan 2023	26.299	Dec 2023	-		26.299	8.767	182.811	-
Operational Test & Evaluation (OT&E)	WR	COMOPTEVFOR : Norfolk, VA	10.184	2.307	Dec 2021	2.281	Feb 2023	1.825	Dec 2023	-		1.825	0.998	17.595	-
Live Fire Test & Evaluation (LFT&E)	WR	NAWCWD : China Lake, CA	11.978	0.660	Dec 2021	0.000		0.000		-		0.000	0.520	13.158	-
<b>Subtotal</b>			107.424	37.897		37.946		30.699		-		30.699	10.431	224.397	N/A

**Remarks**

FY24 T&E funding supports the prime contractor (SDD/SDTA) schedule for flight test/hours and the final deployable configuration.

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Various	5.496	1.382	Dec 2021	0.537	Mar 2023	0.294	Dec 2023	-		0.294	0.048	7.757	7.757
Government Engineering Support	WR	NAWCAD : Pax River, MD	22.299	6.736	Dec 2021	7.015	Jan 2023	5.971	Dec 2023	-		5.971	0.977	42.998	-
Program Management Support	C/CPFF	Zenetex : Herndon, VA	2.503	0.000		0.000		0.000		-		0.000	0.000	2.503	2.503
Program Management Support	Various	Various : Various	3.690	1.122	Dec 2021	1.095	Mar 2023	0.876	Dec 2023	-		0.876	0.144	6.927	6.927
Travel	Various	NAVAIR : Pax River, MD	1.270	0.168	Nov 2021	0.172	Nov 2022	0.138	Nov 2023	-		0.138	0.010	1.758	-
<b>Subtotal</b>			35.258	9.408		8.819		7.279		-		7.279	1.179	61.943	N/A

**Remarks**

FY24 support is required for in-house and contractor activities to include engineering, program management, and test program travel and support for the Integrated Product teams for close-out activities associated with the planning and execution of remaining Correction of Deficiencies identified during component qualification and flight test in support of the final deployable configuration.

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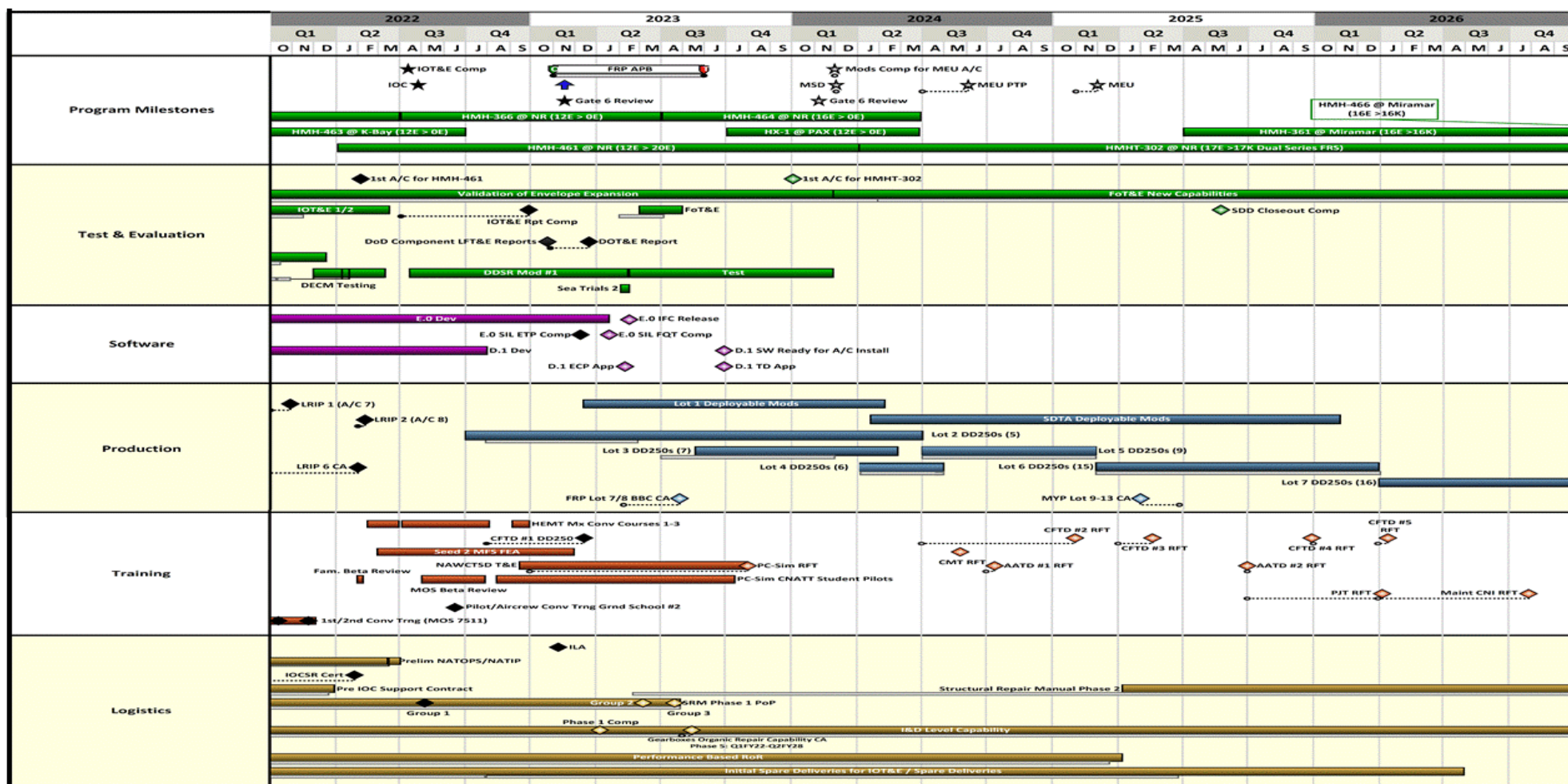
Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605212M / CH-53K					Project (Number/Name) 3059 / CH-53K Development				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		1,265.690	212.181		220.240		179.773		-		179.773	23.379	1,901.263	N/A

**Remarks**  
Requirements are stable; the program continues to execute the revised Joint Program Plan (JPP) established Feb 2019 and approved by the MDA. Current RDT&E funding is aligned with this plan.

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5R-1 Program Element (Number/Name)  
PE 0605212M / CH-53KProject (Number/Name)  
3059 / CH-53K Development

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605212M / CH-53K	<b>Project (Number/Name)</b> 3059 / CH-53K Development	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>CH-53K Development</b>				
Acquisition Milestones: Milestones: Initial Operational Capability	3	2022	3	2022
Acquisition Milestones: Milestones: Full Rate Production	1	2023	3	2023
Test & Evaluation: Operational Test & Evaluation: IOT&E	1	2022	2	2022
Test & Evaluation: Operational Test & Evaluation: Validation of Envelope Expansion	1	2022	1	2024
Test & Evaluation: Operational Test & Evaluation: SDD Closeout	2	2024	3	2025
Production Milestones: LRIP / FRP Awards: LRIP 6	2	2022	2	2022
Production Milestones: LRIP / FRP Awards: FRP Lots 7/8 BBC	3	2023	3	2023
Production Milestones: LRIP / FRP Awards: MYP Lots 9-13	2	2025	2	2025
Production Milestones: Deliveries: Lot 2	3	2022	3	2024
Production Milestones: Deliveries: Lot 3	3	2023	2	2024
Production Milestones: Deliveries: Lot 4	2	2024	3	2024
Production Milestones: Deliveries: Lot 5	3	2024	1	2025
Production Milestones: Deliveries: Lot 6	1	2025	1	2026
Production Milestones: Deliveries: Lot 7	2	2026	4	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023																				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605212M / CH-53K				Project (Number/Name) 3069 / CH-53K Improvement																					
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost																		
3069: CH-53K Improvement	0.000	0.000	0.000	42.515	-	42.515	16.303	26.930	61.961	64.763	Continuing	Continuing																		
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-																				
Project MDAP/MAIS Code: 390																														
<div>Note</div> <div>Project 3069 is a New Start in FY2024.</div> <div>A. Mission Description and Budget Item Justification</div> <div>CH-53K Improvement is required for the establishment of the Heavy Lift program's organic test and evaluation efforts, software development, and follow-on improvements. Improvements address pre-planned product improvement requirements written into the Capabilities Product Document approved by Joint Requirements Oversight Committee in February 2020. The CH-53K Improvement projects provide near and long term improvements to the fleet, focusing on documented deficiencies related to mission systems, maintainability and reliability, and obsolescence issues.</div> <div>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</div> <table><thead><tr><th></th><th>FY 2022</th><th>FY 2023</th><th>FY 2024 Base</th><th>FY 2024 OCO</th><th>FY 2024 Total</th></tr></thead><tbody><tr><td><div>Title: Organic Test &amp; Evaluation</div><div>Articles:</div><div>FY 2023 Plans: N/A</div><div>FY 2024 Base Plans: Plan includes efforts necessary for the stand up of organic government lead Test and Evaluation work to support follow-on capability expansion and new requirement developments.</div><div>FY 2024 OCO Plans: N/A</div><div>FY 2023 to FY 2024 Increase/Decrease Statement: Increase results from transition of CH-53K program from development to capability improvement.</div></td><td>0.000 -</td><td>0.000 -</td><td>6.156 -</td><td>0.000 -</td><td>6.156 -</td></tr><tr><td><div>Title: Follow-on Improvements &amp; Project Management</div><div>Articles:</div><div>FY 2023 Plans: N/A</div><div>FY 2024 Base Plans:</div></td><td>0.000 -</td><td>0.000 -</td><td>36.359 -</td><td>0.000 -</td><td>36.359 -</td></tr></tbody></table>														FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	<div>Title: Organic Test &amp; Evaluation</div> <div>Articles:</div> <div>FY 2023 Plans: N/A</div> <div>FY 2024 Base Plans: Plan includes efforts necessary for the stand up of organic government lead Test and Evaluation work to support follow-on capability expansion and new requirement developments.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Increase results from transition of CH-53K program from development to capability improvement.</div>	0.000 -	0.000 -	6.156 -	0.000 -	6.156 -	<div>Title: Follow-on Improvements &amp; Project Management</div> <div>Articles:</div> <div>FY 2023 Plans: N/A</div> <div>FY 2024 Base Plans:</div>	0.000 -	0.000 -	36.359 -	0.000 -	36.359 -
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total																									
<div>Title: Organic Test &amp; Evaluation</div> <div>Articles:</div> <div>FY 2023 Plans: N/A</div> <div>FY 2024 Base Plans: Plan includes efforts necessary for the stand up of organic government lead Test and Evaluation work to support follow-on capability expansion and new requirement developments.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Increase results from transition of CH-53K program from development to capability improvement.</div>	0.000 -	0.000 -	6.156 -	0.000 -	6.156 -																									
<div>Title: Follow-on Improvements &amp; Project Management</div> <div>Articles:</div> <div>FY 2023 Plans: N/A</div> <div>FY 2024 Base Plans:</div>	0.000 -	0.000 -	36.359 -	0.000 -	36.359 -																									

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605212M / CH-53K	<b>Project (Number/Name)</b> 3069 / CH-53K Improvement	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Plan includes efforts to develop, test and certify new capabilities, to include software development, and mitigation of risk due to obsolescence of components to support fleet and production aircraft requirements. Specific activities planned in support of the Improvements program include: establishment of an organic maintenance team at HX-21 for the continued testing on Engineering Development Model (EDM) aircraft; development/installation of a network based instrumentation system on EDM aircraft to replace obsolete contractor developed system; recalibration of instrumented aircraft components; purchase of aircraft spares, Logistical Support Equipment, Peculiar Support Equipment, and Common Support Equipment; adaptation of technical publications to address unique parts and requirements for EDM aircraft with CH-53K designation; continued development of an organic Flight Simulator capability at Patuxent River, MD; test planning activities; and retrofits of EDM aircraft for flight test.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase results from transition of CH-53K program from development to capability improvement.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	42.515	0.000	42.515

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APN/0158/0158C: CH-53K (Heavy Lift)	1,669.297	2,218.302	2,154.617	-	2,154.617	2,740.876	2,824.133	2,718.603	2,772.997	5,784.177	27,757.139
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• APN/0528: H-53 Series	64.273	28.577	31.188	-	31.188	38.103	41.333	159.956	169.676	Continuing	Continuing
• RDTE/0605212M/3059: CH-53K Development	212.181	220.240	179.773	-	179.773	23.379	0.000	0.000	0.000	0.000	1,901.263

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy							Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605212M / CH-53K			Project (Number/Name) 3069 / CH-53K Improvement		

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
<b>Remarks</b>											
APN/0158/0158C: CH-53K Advanced and Regular Procurement (APN-1)											
APN/0605: CH-53K Spares (APN-6)											
APN/0528: CH-53K OSIP #s 007-19 Correction of Deficiencies											
RDTE/3059: CH-53K Development											

D. Acquisition Strategy

On 30 March 2017, the DAB reviewed the CH-53K program for a MS C decision allowing entry into Production and the ADM was signed by USD AT&L on 4 April 2017 resulting in an ACAT 1C designation.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605212M / CH-53K				Project (Number/Name) 3069 / CH-53K Improvement					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Various : Various	0.000	0.000		0.000		2.063	Mar 2024	-		2.063	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		2.063		-		2.063	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	Various	Various : Various	0.000	0.000		0.000		3.086	Mar 2024	-		3.086	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWCAD : Pax River MD	0.000	0.000		0.000		3.070	Mar 2024	-		3.070	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		6.156		-		6.156	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River MD	0.000	0.000		0.000		17.064	Mar 2024	-		17.064	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	Various	Various : Various	0.000	0.000		0.000		12.971	Mar 2024	-		12.971	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	Various	COMOPTEVFOR : Norfolk VA	0.000	0.000		0.000		3.136	Mar 2024	-		3.136	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake CA	0.000	0.000		0.000		0.511	Mar 2024	-		0.511	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		33.682		-		33.682	Continuing	Continuing	N/A

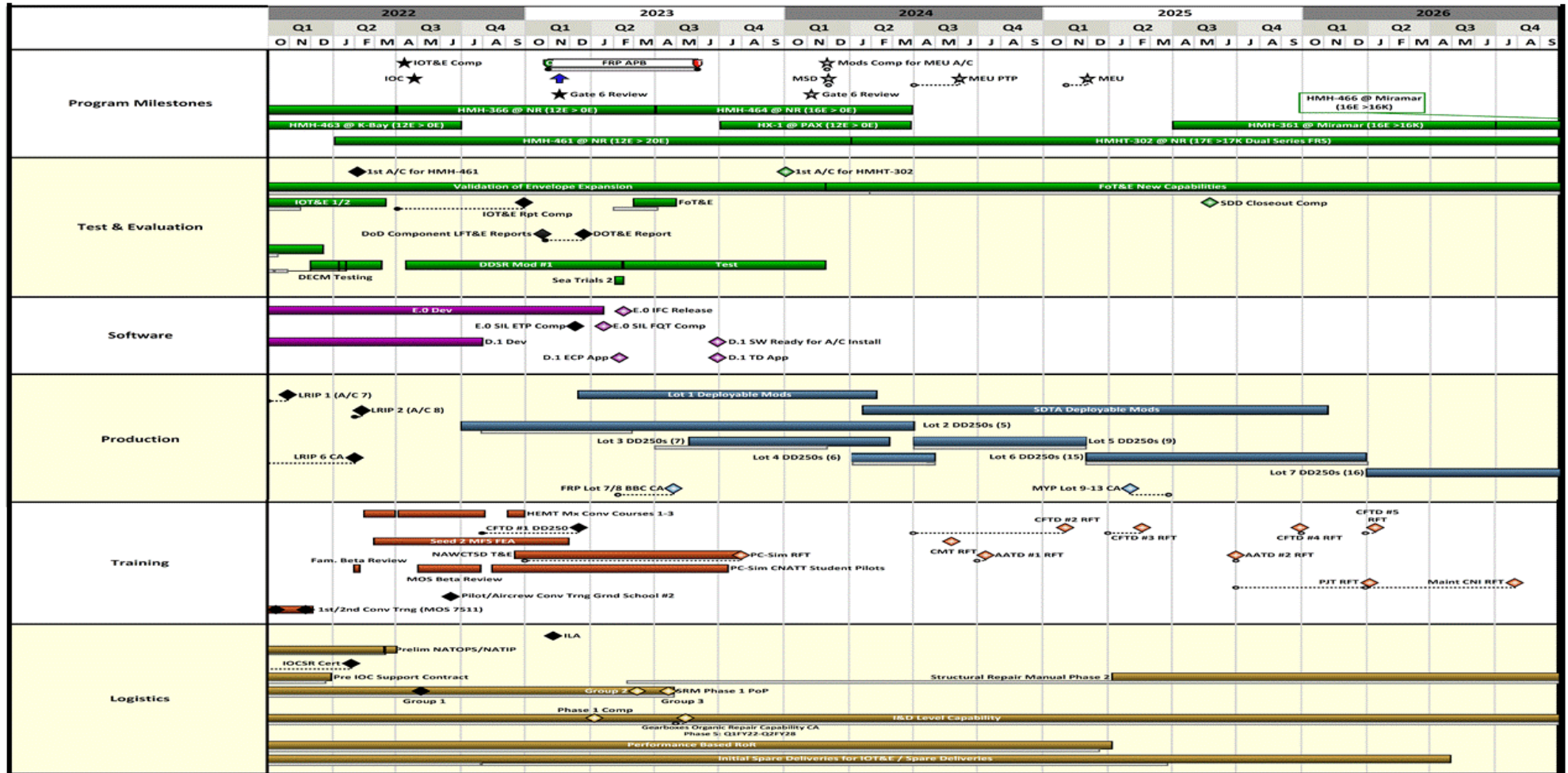
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605212M / CH-53K				Project (Number/Name) 3069 / CH-53K Improvement					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	0.000	0.000		0.000		0.604	Nov 2023	-		0.604	Continuing	Continuing	Continuing
Travel	Various	NAVAIR : Pax River MD	0.000	0.000		0.000		0.010	Nov 2023	-		0.010	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.614		-		0.614	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		0.000		42.515		-		42.515	Continuing	Continuing	N/A
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5R-1 Program Element (Number/Name)  
PE 0605212M / CH-53KProject (Number/Name)  
3069 / CH-53K Improvement

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605212M / CH-53K	Project (Number/Name) 3069 / CH-53K Improvement

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CH-53K Improvement				
Improvements/New Capabilities/Follow-on Test & Evaluation	1	2024	4	2028

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605215N / Mission Planning							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	228.674	86.255	76.107	86.448	-	86.448	104.991	90.371	84.150	49.267	Continuing	Continuing
2213: Mission Planning	185.776	75.371	58.873	74.401	-	74.401	92.837	78.018	71.631	36.403	Continuing	Continuing
2311: Stores Planning and Weaponneering Module	42.898	10.884	12.234	12.047	-	12.047	12.154	12.353	12.519	12.864	Continuing	Continuing
9999: Congressional Adds	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000

**A. Mission Description and Budget Item Justification**

The Mission Planning PE is used to develop automated mission planning systems to support Naval Aviation.

The Joint Mission Planning System (JMPS) (Proj 2213) is the designated automated mission planning system for Naval Aviation, supporting over 40 Type/Model/Series (T/M/S) of U.S. Navy and Marine Corps aircraft, expeditionary forces as well as Joint and Coalition forces. The Joint Mission Planning System - Maritime (JMPS-M) enables weapon system employment by providing the information, automated tools, and decision aids needed to rapidly plan aircraft, weapon, or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal, execute missions, and conduct post-mission analysis. The Joint Mission Planning System - Expeditionary (JMPS-E) is a scalable, tailorable, and collaborative web-based mission planning and execution monitoring tool for Amphibious Squadron staffs embarked with each Amphibious Ready Group and Expeditionary Strike Group. Electronic Kneeboard (EKB) is a mobile computing device configured with various software applications and features to support aircrew during pre-flight planning, in-flight re-planning and mission execution, and post-mission debriefing and analysis. Preflight mission planning, data loading, rehearsals, mission execution and post mission analyses are conducted at all appropriate security classification levels.

The Standardized Tester of Reprogrammable Munitions (STORM) system (Proj 2213) replaces the legacy Common Munitions Built-in-Test (BIT)/Reprogramming Equipment (CMBRE) and provides USN/USMC forces the critical capability to perform built-in test and programming/reprogramming of various advanced weapons. The STORM system supports advanced operational capabilities, addresses legacy CMBRE system obsolescence, enhances cybersecurity posture to improve readiness, and improves sortie generation rate.

The Next Generation Naval Mission Planning System (NGNMPS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative multi-domain mission planning, execution and analysis. The NGNMPS will replace Naval Aviation's legacy JMPS no later than FY 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. The NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. The NGNMPS capability provides advanced multiple aircraft planning capabilities focused on emerging, high-threat mission areas. Current mission planning capabilities support individual aircraft and weapon initialization requirements. The emerging, near-peer threat environment demands a much more capable system that enables a team of aircraft to cooperate effectively across multiple mission areas, domains, and security levels. The NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity. Additionally NGNMPS will provide information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans. This functionality includes advanced pre-mission rehearsal/

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				
analysis, loading mission data into aircraft and weapons, dynamic replanning/retargeting against evolving threats in contested environments, and advanced post-mission debrief/ analysis. The NGNMPS will incorporate cross-domain solution capabilities. These mission planning, mission execution, and mission analysis functions meet the National Defense Strategy and Interim National Security Strategic Guidance key objectives. The NGNMPS will conduct preflight mission planning, data loading, rehearsals, mission execution and post mission analyses at all appropriate security classification levels.						
The Stores Planning and Weaponneering Module, also referred to as Weaponneering and Stores Planning (WASP) (Proj 2311), is an integrated software product that allows aircrew to determine the best combinations of weapons and delivery conditions to achieve the desired level of target damage. The WASP program performs detailed weapons employment planning for F/A-18 and E/A-18G aircraft. The WASP program provides inherent safety checks which eliminate weapon delivery solutions that violate aircraft T/M/S specific safety-of-flight envelopes. FY 2022 and out include funding for the research and development to integrate WASP with 3-D mission rehearsal, provide dynamic Safe Escape Automation Layer (SEAL) calculations on Electronic Kneeboard (EKB), develop WASP for other Navy and Marine Corps platforms, and support WASP development and integration with Next Generation Mission Planning Systems (NGNMPS).						
The total cost of the STORM Middle Tier Acquisition effort is \$43.3 million, including RDT&E and procurement of prototype units. The STORM 804 program is fully funded through FY24.						
The total cost of the NGNMPS Middle Tier Acquisition effort is \$195.37 million, including RDT&E and procurement of prototype units. The NGNMPS program is fully funded across the Future Years Defense Program. NGNMPS will transition from an MTA program being executed under 804 authority at the end of FY24.						
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT & DEMONSTRATION (SDD) because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production decision.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		88.128	71.107	43.155	-	43.155
Current President's Budget		86.255	76.107	86.448	-	86.448
Total Adjustments		-1.873	5.000	43.293	-	43.293
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	5.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-1.873	0.000			
• Program Adjustments		0.000	0.000	42.917	-	42.917
• Rate/Misc Adjustments		0.000	0.000	0.376	-	0.376

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0605215N / <i>Mission Planning</i>	
<b><u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u></b>		<b>FY 2022</b>	<b>FY 2023</b>
<b>Project:</b> 9999: <i>Congressional Adds</i> Congressional Add: <i>Multi domain anti-submarine solutions</i>			
Congressional Add Subtotals for Project: 9999		0.000	5.000
Congressional Add Totals for all Projects		0.000	5.000
<b><u>Change Summary Explanation</u></b> <b>FUNDING:</b>  Funding increase in FY24 is due to transition of NGNMPS from prototyping activities to program of record and additional STORM MAP Software Development efforts.  <b>TECHNICAL:</b> 2213: - Adjusted R2A & R3 to adequately show the splits between the NGNMPS, JMPS-M & STORM programs. 9999: - Added R2A & R3 for Anti-Submarine Warfare efforts in FY23.  <b>SCHEDULE:</b> 2213: - Broke out "STORM Advanced Capabilities" into "STORM MAP SW Development" and "STORM Program of Record". - Renamed "NGNMPS Advanced Capabilities" to "NGNMPS Program of Record". - Extended NGNMPS Integration & Test, NGNMPS Program of Record, and STORM Program of Record to 4Q FY28. - Moved KP3 - Field STORM Prototype from 4Q FY23 to 3Q FY24. - Extended STORM 804 Development from 4Q FY23 to 3Q FY24. - Shifted STORM system testing from 3Q FY22-2Q FY23 to 2Q FY23-3Q FY24. 2311: - Separated WASP NGNMPS efforts and WASP v5.2 efforts. - Changed WASP System Dev: "WASP NGNMPS" to "WASP v5.2 System Dev". - Changed WASP Test & Eval: "WASP NGNMPS" to "WASP v5.2 Test & Eval". - Changed WASP Production - IOC: "WASP NGNMPS" to "WASP v5.2 IOC". - Added "WASP NGNMPS System Dev." 4Q FY24 - 4Q FY28.			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	PE 0605215N / Mission Planning	
<div>- Added "WASP NGNMPS Test &amp; Evaluation" 4Q FY24 - 4Q FY28. 9999: -Added "ASW Requirements Analysis" 2Q FY23 - 1Q FY24.</div>		



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2213 / Mission Planning			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2213: Mission Planning	185.776	75.371	58.873	74.401	-	74.401	92.837	78.018	71.631	36.403	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Joint Mission Planning System (JMPS) (Proj 2213) is the designated automated mission planning system for Naval Aviation, supporting over 40 Type/Model/Series (T/M/S) of U.S. Navy and Marine Corps aircraft, expeditionary forces as well as Joint and Coalition forces. The Joint Mission Planning System - Maritime (JMPS-M) enables weapon system employment by providing the information, automated tools, and decision aids needed to rapidly plan aircraft, weapon, or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal, execute missions, and conduct post-mission analysis. The Joint Mission Planning System - Expeditionary (JMPS-E) is a scalable, tailorable, and collaborative web-based mission planning and execution monitoring tool for Amphibious Squadron staffs embarked with each Amphibious Ready Group and Expeditionary Strike Group. Electronic Kneeboard (EKB) is a mobile computing device configured with various software applications and features to support aircrew during pre-flight planning, in-flight re-planning and mission execution, and post-mission debriefing and analysis. Preflight mission planning, data loading, rehearsals, mission execution and post mission analyses are conducted at all appropriate security classification levels.

The Next Generation Naval Mission Planning System (NGNMPS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative multi-domain mission planning, execution and analysis. The NGNMPS will replace Naval Aviation's legacy JMPS no later than FY 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. The NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. The NGNMPS capability provides advanced multiple aircraft planning capabilities focused on emerging, high-threat mission areas. Current mission planning capabilities support individual aircraft and weapon initialization requirements. The emerging, near-peer threat environment demands a much more capable system that enables a team of aircraft to cooperate effectively across multiple mission areas, domains, and security levels. The NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity. Additionally NGNMPS will provide information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans. This functionality includes advanced pre-mission rehearsal/analysis, loading mission data into aircraft and weapons, dynamic replanning/retargeting against evolving threats in contested environments, and advanced post-mission debrief/analysis. The NGNMPS will incorporate cross-domain solution capabilities. These mission planning, mission execution, and mission analysis functions meet the National Defense Strategy and Interim National Security Strategic Guidance key objectives. The NGNMPS will conduct preflight mission planning, data loading, rehearsals, mission execution and post mission analyses at all appropriate security classification levels.

The Standardized Tester of Reprogrammable Munitions (STORM) system (Proj 2213) replaces the legacy Common Munitions Built-in-Test (BIT)/Reprogramming Equipment (CMBRE) and provides USN/USMC forces the critical capability to perform built-in test and programming/reprogramming of various advanced weapons. The STORM system supports advanced operational capabilities, addresses legacy CMBRE system obsolescence, enhances cybersecurity posture to improve readiness, and improves sortie generation rate.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605215N / Mission Planning		Project (Number/Name) 2213 / Mission Planning		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Mission Planning Program Mgmt, Integration, and Test		12.725	9.992	1.330	0.000	1.330
<b>Articles:</b>		-	-	-	-	-
<b>Description:</b> Perform Mission Planning Program Management, and Integration and Test efforts supporting the Navy's system development, developmental testing/operational testing, integration, system-of-system testing, and managing Naval Mission Planning efforts. Life-cycle management efforts consist of development of program execution plans, development/integration of components provided by various developers into mission planning environments and testing of the integrated environment.						
<b>FY 2023 Plans:</b> Continue mission planning integration and testing, project management and system engineering for over 40 T/M/ S that are supported by legacy JMPS and by the Next Generation Naval Mission Planning System with a focus on transition to NGNMPS. Complete initial fleet requirement assessment in support of Next Generation Naval Mission Planning. Conduct studies, analyses, integration, and tests to move Naval Mission Planning Systems into a single ecosystem supporting fleet needs. Conduct additional studies, analyses, integrations, and tests to meet emergent fleet security and aircraft interface/data exchange requirements.						
<b>FY 2024 Base Plans:</b> Continue mission planning integration and testing, project management and system engineering for over 40 T/ M/S that are supported by legacy JMPS. Transition from the Next Generation Naval Mission Planning System Section 804 mid-tier acquisition / Rapid Prototype to an established program of record. Continue conducting studies, analyses, integration, and tests to move Naval Mission Planning Systems into a single ecosystem supporting fleet needs. Conduct additional studies, analyses, integrations, and tests to meet emergent fleet security and aircraft interface/ data exchange requirements.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to scaling back of integration activities associated with the scheduled JMPS-M sundown in FY27.						
<b>Title:</b> Mission Planning Framework (FW) and Common Components (CC) Development		8.829	6.988	0.000	0.000	0.000
<b>Articles:</b>		-	-	-	-	-
<b>Description:</b> This task continues development and integration of modernized mission planning software frameworks and architecture which provide the required core mission planning capabilities supporting all naval						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605215N / Mission Planning		Project (Number/Name) 2213 / Mission Planning		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
aircraft. Framework and architecture development tasks include: system engineering processes, management interface controls, software architectural analysis, requirements management and a centralized website for Mission Planning developers. Updating Common Component software into a modernized software environment and architecture will continue and also augment core mission planning capabilities supporting multiple T/M/S.  <b>FY 2023 Plans:</b> Continue development, integration and testing of modernized framework capabilities and architecture. Introduce capability involving new business services, utilities and data types. Continue development activities which include implementing a modular, scalable service-oriented architecture to reduce development and sustainment costs while also supporting cyber security hardening and resilience for compliance with cyber mandates. Continue development and integration of common components to meet platform(s) requirements for new and enhanced mission planning capability required in a modernized and service-oriented architecture environment. Integration activities will continue as platforms deliver modernized unique planning capabilities for integration, testing and fielding.  <b>FY 2024 Base Plans:</b> N/A  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to scaling back of development activities associated with the scheduled JMPS-M sundown in FY27.						
<b>Title:</b> Next Generation Naval Mission Planning System (NGNMPS) Development  <b>Articles:</b>  <b>Description:</b> The Next Generation Naval Mission Planning System (NGNMPS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative multi-domain mission planning, execution and analysis. NGNMPS will replace Naval Aviation's legacy JMPS no later than FY 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS capability provides advanced multiple aircraft planning capabilities focused on emerging, high-threat mission areas. Current mission planning capabilities support individual aircraft and weapon initialization requirements. The emerging, near-peer threat environment demands a much more capable		37.295 -	31.143 -	67.029 -	0.000 -	67.029 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
system that enables a team of aircraft to cooperate effectively across multiple mission areas, domains, and security levels. NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans; perform advanced pre-mission rehearsal/analysis; provide functionality to load mission data into aircraft and weapons; enable dynamic replanning/retargeting against evolving threats in contested environments; perform integrated and advanced post-mission debrief/analysis; support cross-domain capabilities; and support portability of mission planning, mission execution, and mission analysis functions to meet National Defense Strategy and Interim National Security Strategic Guidance key objectives. The NGNMPS will be integrating rapid prototyped capability developed under multiple S&T efforts (e.g., Future Naval Capability, Rapid Innovation Fund, Small Business Innovative Research) as those projects mature sufficiently to meet critical advanced warfighting needs.						
NGNMPS will complete Middle Tier Acquisition approach, per Section 804 of the Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA), as amended in FY 2017 NDAA (codified at 10 U.S.C. sub sec 2302 note) to prototype and deliver NGNMPS capabilities to Naval Aviation across multiple platforms. The NGNMPS program of record starts in FY 2024.						
FY 2023 Plans: Continue development, integration and testing of the NGNMPS modernized framework capabilities and architecture. Continue development, integration, and test of mission planning capabilities enabling complex mission planning for the warfighter. Continue and expand a consolidated user interface for ease of use, reduced time to plan, as well as reduced training requirements. Continue to implement data automation to improve time to plan, reduce errors, and allow aircrew to focus on critical decision making in the mission planning process. Continue to implement a modular, scalable service-oriented architecture to reduce development and sustainment costs while supporting cyber security hardening and resilience for compliance with cyber mandates. Continue to develop and integrate micro-services to meet platform(s) requirements for new and enhanced mission planning capability required in a modernized and service-oriented architecture environment. Demonstrate developmental software in operationally representative environments to ensure shipboard interoperability and collect aircrew feedback. Continue implementation of DevSecOps software production pipeline and processes to achieve continuous integration & continuous deployment. Prepare program documentation to transition NGNMPS into an established program of record. Selection of the most appropriate acquisition pathway and entry point will be documented in the NGNMPS program of record acquisition strategy.						
FY 2024 Base Plans:						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605215N / <i>Mission Planning</i>	<b>Project (Number/Name)</b> 2213 / <i>Mission Planning</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>In FY24, the NGNMPS will begin executing a Program of Record (PoR) which builds upon a completing 804 effort and is tightly aligned with joint mission planning investments and initiatives. The NGNMPS PoR anticipates using the Software Acquisition Pathway (governed by DoDI 5000.87) and plans to enter the execution phase in FY24. The FY24 budget and activities include advanced pre-mission rehearsal/analysis, loading mission data into aircraft and weapons, dynamic replanning/retargeting against evolving threats in contested environments, and advanced post-mission debrief/ analysis. Build upon and expand capabilities delivered under the Section 804 Mid-Tier Acquisition scheduled to complete concurrent with the beginning of this POR.</p> <p>Specific FY24 tasking includes:</p> <ul style="list-style-type: none"> <li>-Continue development, integration, test, and delivery of mission planning capabilities enabling complex mission planning for the warfighter. This continued development includes establishing the PoR systems engineering design, development of software incorporating additional mission areas such as Anti-Submarine Warfare or Amphibious Assault. Development activities would expand to include all appropriate security levels.</li> <li>-Continue development and expansion of a consolidated user interface and user experience for ease of use, reduced time to plan, as well as reduced training requirements.</li> <li>-Continue to implement data automation to improve time to plan, reduce errors, and allow aircrew to focus on critical decision making in the mission planning process.</li> <li>-Conduct non-recurring engineering design activities to implement NGNMPS functionality on mobile computing devices.</li> <li>-Continue to implement a modular, scalable service-oriented architecture to reduce development and sustainment costs while supporting cyber security hardening and resilience for compliance with cyber mandates.</li> <li>-Continue to develop and integrate micro-services to meet platform(s) requirements for new and enhanced mission planning capability required in a modernized and service-oriented architecture environment.</li> <li>-Develop and deliver software and hardware products supporting operations in both land-based and shipboard environments. This work includes the non-recurring engineering design required to support NGNMPS deployments aboard various classes of ships including CVN, LHA/LHD, and DDG class ships. Additionally the</li> </ul>						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
effort includes the engineering-design / network-design necessary for deployments in stand-alone, networked, and cloud-based environments.						
-Continue implementation of software DevSecOps and processes to achieve continuous integration & continuous deployment. The effort includes on-boarding development teams from other platforms (e.g., F/A-18, EA-18, E-2, V-22).						
-Establish test and evaluation laboratories and facilities necessary for the end-to-end test of NGNMPS functionality.						
-Fund test personnel and test squadron project officers necessary for end-to-end testing.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY23 to FY24 due to implementation of design, development, integration, test, and delivery of NGNMPS Program of Record. This funding integrates additional aircraft, mission areas, and weapons sets beyond the 804 rapid prototype.						
Title: Standardized Tester of Reprogrammable Munitions (STORM) (previously titled: Next Generation Common Munitions BIT Reprogramming Equipment (CMBRE))		16.522	10.750	6.042	0.000	6.042
		-	-	-	-	-
Articles:						
Description: The technology inherent to the legacy CMBRE is obsolete and cannot be sustained beyond 2025. In addition to sustainability issues and cyber security concerns, the Fleet also requires a more transportable, lighter weight and rugged test set that has the ability to service existing and future weapons with increased data transfer capability in austere operating environments. Formerly named "CMBRE Next Generation" the Standardized Tester of Reprogrammable Munitions (STORM) efforts enhance mission readiness and security, and generate improved flexibility, depth, and capacity for existing and emerging aviation weapon capabilities during the conduct of ship, shore, and ship-to-shore operations in both conventional and Distributed Aviation Operations environments. STORM will satisfy current and future fleet weapon support requirements, CONOPS, and cyber security mandates while affordably addressing legacy CMBRE system obsolescence.						

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>								<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>STORM is being pursued through a Middle Tier Acquisition approach, per Section 804 of the Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA), as amended in FY 2017 NDAA (codified at 10 U.S.C. sub sec 2302 note) to prototype and deliver STORM capability to USN/USMC forces.</p> <p><b><i>FY 2023 Plans:</i></b>            Continue development of STORM system. Complete prototype Munitions Application Program (MAP) software development. Complete assembly of STORM prototype hardware components. Conduct hardware/software system integration. Complete hardware/software system integration. Continue system-level test and evaluation. Prepare program documentation to transition STORM into an established program of record. Selection of the most appropriate acquisition pathway and entry point will be documented the STORM program of record acquisition strategy.</p> <p><b><i>FY 2024 Base Plans:</i></b>            Complete the Section 804 / Mid-Tier Acquisition and transition to program of record. Complete Munitions Application Program software development for weapons addressed under the Section 804 Mid-Tier Acquisition. Complete development, integration, and test of the STORM prototype. Initiate engineering activities to address discovery from the prototyping phase to support transition to program of record.</p> <p><b><i>FY 2024 OCO Plans:</i></b>            N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b>            Decrease from FY 2023 to FY 2024 is due to completion of STORM 804 activities.</p>												
<b>Accomplishments/Planned Programs Subtotals</b>								75.371	58.873	74.401	0.000	74.401
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
• OPN/2876: Mission Planning	16.777	25.092	39.180	-	39.180	45.241	55.139	48.182	51.165	Continuing	Continuing	
<b>Remarks</b>												
<b>D. Acquisition Strategy</b>												
<p>The initial Joint Mission Planning System (JMPS) development effort was a phased evolutionary approach. JMPS is a post Milestone III program and Initial Operational Capability (IOC) occurred in December 2005. Cost Plus Award Fee (CPAF) and Cost Plus Incentive Fee (CPIF) contracts were awarded during initial development. During the down-select process, one contractor was selected to develop the JMPS architecture framework and Version 1.0 basic flight planning components. Additional</p>												

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605215N / <i>Mission Planning</i>	<b>Project (Number/Name)</b> 2213 / <i>Mission Planning</i>
<p>phases focused on strike planning requirements (i.e., support Precision Guided Missions and other tactical data intensive missions) in order to migrate platforms from legacy mission planning systems to JMPS. The USAF and USN continued the joint development of JMPS Frameworks via the USAF Mission Planning Enterprise Contract, which is used for JMPS Framework software development. The USN integration and fielding strategy supports a Mission Planning Environment (MPE) focus, where the JMPS Framework and other software components are integrated, tested, and fielded by T/M/S. Preflight mission planning, data loading, rehearsals, mission execution and post mission analyses are conducted at all appropriate security classification levels. As platforms plan their migration to newer versions of JMPS, the acquisition strategy, plan, and program baseline will be updated in order to divest legacy mission planning systems, meet the evolving requirements for integrated mission planning, and lower total life cycle cost. JMPS End of Life (EOL) is planned for 2027. This necessitates the development of a replacement system, Next Generation Naval Mission Planning System (NGNMPS).</p> <p>The NGNMPS will provide a modernized mission planning system, which supports multi-domain mission planning, execution, management, and mission analysis capabilities required by the 21st century warfighter. The NGNMPS will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and multi-domain collaborative mission planning, execution and analysis. The NGNMPS will replace Naval Aviation's legacy JMPS no later than 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. The NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. The NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans; perform advanced pre-mission rehearsal/analysis; provide functionality to load mission data into aircraft and weapons; enable dynamic replanning/retargeting against evolving threats in contested environments; perform integrated and advanced post-mission debrief/analysis; support cross-domain capabilities; and support portability of mission planning, mission execution, and mission analysis functions. Preflight mission planning, data loading, rehearsals, mission execution and post mission analyses are conducted at all appropriate security classification levels.</p> <p>The NGNMPS will address shortfalls in the family of legacy systems (including JMPS) by modernizing the foundational software to a services based architecture that will improve composability of software applications to support advanced mission planning, dynamic re-planning, mission execution, and post-mission analysis that is required to support the National Defense Strategy and Interim National Security Strategic Guidance. Adopting composable infrastructure that includes computing, storage and network elements treated as individual services allows greater speed and flexibility when performing tasks, allows software applications to operate independently of a single hardware platform, and supports affordable component re-use and supportability across the family of systems. The NGNMPS Program of Record plans to use the Software Acquisition Pathway for development, integration, test, and delivery of capabilities. The NGNMPS program anticipates entering the Software Acquisition Pathway Execution Phase by 2QFY24.</p> <p>The CMBRE program was designed to provide USN/USMC units with the critical capability to perform built-in-test and programming / reprogramming of various weapons. Because the legacy CMBRE is obsolete and cannot be sustained beyond 2025 a follow-on program, the Standardized Tester of Reprogrammable Munitions (STORM) will replace CMBRE and support current and future fleet weapon support requirements, CONOPS, and will comply with Cyber security mandates while affordably addressing legacy CMBRE system obsolescence. The STORM Program of Record plans to use DoDI 5000.82 major capability acquisition pathway. The STORM program anticipates entering the acquisition process by 1QFY24. CMBRE obsolescence issues are forecast to pose a significant obstacle to system sustainment beyond FY25. The follow-on Standardized Test of Reprogrammable Munitions (STORM) is intended to replace CMBRE and satisfy current and future fleet weapon support requirements and cybersecurity mandates while resolving CMBRE obsolescence. STORM transitions from prototyping to program of record in FY24.</p>		



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2213 / Mission Planning					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development/JMPS Expeditionary	C/CPFF	Leidos : Reston, VA	1.598	0.000		0.000		0.000		-		0.000	0.000	1.598	1.618
Primary Software Development/JMPS Expeditionary	C/CPAF	BAE : San Diego, CA	2.164	0.000		0.000		0.000		-		0.000	0.000	2.164	2.238
JMPS-M Primary Software Development	C/CPFF	IDT : Arlington, VA	3.711	0.000	Feb 2022	0.000	Feb 2023	0.200	Feb 2024	-		0.200	Continuing	Continuing	Continuing
JMPS-M Primary Software Development	WR	NAWCWD : Point Mugu, CA	0.000	0.000		0.000		0.220	Nov 2023	-		0.220	0.000	0.220	-
JMPS-M Primary Software Development	WR	NAWCWD : China Lake, CA	0.483	0.166	Dec 2021	0.148	Dec 2022	0.075	Dec 2023	-		0.075	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	ATC : Eden Prairie, MN	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	0.260
NGNMPS Primary Software Development, FW	C/CPFF	Northrop Grumman : Long Beach, CA	4.970	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	DCS : Alexandria, VA	4.301	1.650	Jan 2022	1.412	Jan 2023	4.848	Jan 2024	-		4.848	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	AMEWAS : California, MD	1.775	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	MTI : Park City, UT	2.795	1.675	Feb 2022	1.465	Feb 2023	1.950	Feb 2024	-		1.950	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	John's Hopkins University : Laurel, MD	2.250	1.122	Jan 2022	0.892	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	WR	NAWCWD : Point Mugu, CA	10.912	5.732	Nov 2021	5.350	Nov 2022	5.328	Nov 2023	-		5.328	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	VARIOUS : VARIOUS	0.000	6.590	Jan 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	Northrop Grumman : Linthicum Heights, MD	11.947	0.000		0.000		0.000		-		0.000	0.000	11.947	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy													Date: March 2023		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2213 / Mission Planning					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NGNMPS Primary Software Development	C/CPFF	Northrop Grumman : Mclean, VA	5.000	11.000	Dec 2021	12.553	Dec 2022	0.000		-		0.000	0.000	28.553	-
NGNMPS Primary Software Development	TBD	TBD : TBD	0.000	0.000		0.000		19.386	Dec 2023	-		19.386	0.000	19.386	-
NGNMPS Primary Software Development (SEIC)	C/CPFF	Leidos : Orlando, FL	16.032	3.724	Feb 2022	3.152	Feb 2023	3.285	Feb 2024	-		3.285	Continuing	Continuing	Continuing
NGNMPS Primary Software Development/ (Human Factors)	C/CPFF	Georgia Technical Research Institute (GTRI) : Atlanta, GA	3.297	0.775	Mar 2022	0.685	Mar 2023	1.025	Mar 2024	-		1.025	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	WR	NRL/Inc Lab : Washington DC	2.654	1.502	Nov 2021	1.385	Nov 2022	1.165	Nov 2023	-		1.165	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	Carnegie Mellon University : Pittsburgh, PA	0.998	0.520	Mar 2022	0.499	Mar 2023	0.750	Apr 2024	-		0.750	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	WR	NIWC PAC : San Diego, CA	3.080	1.780	Nov 2021	1.622	Nov 2022	1.150	Nov 2023	-		1.150	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	MIPR	Elmendorf AFB : Jber, AK	2.250	1.825	Jan 2022	1.625	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	2-Circle : Arlington, VA	1.350	0.925	Mar 2022	0.850	Mar 2023	0.700	Apr 2024	-		0.700	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	Progeny Systems Corp : Manassas, VA	0.000	0.000		0.000		1.350	Feb 2024	-		1.350	0.000	1.350	-
NGNMPS Primary Software Development	C/CPFF	BAE Systems : San Diego, CA	0.000	0.000		0.000		1.250	Mar 2024	-		1.250	0.000	1.250	-
NGNMPS Primary Software Development	C/CPAF	CENTAURI LLC : Chantilly, VA	0.000	0.000		0.000		0.850	Jan 2024	-		0.850	0.000	0.850	-
STORM Development	MIPR	Dep Of Energy : Kansas City, MO	22.114	7.233	Nov 2021	6.253	Nov 2022	2.050	Nov 2023	-		2.050	Continuing	Continuing	Continuing
STORM MAP SW Development	C/CPFF	Raytheon : Tuscon, AZ	0.850	3.000	Jun 2022	1.250	Jan 2023	1.792	Jan 2024	-		1.792	Continuing	Continuing	Continuing
Multi Level Mission Planning	Various	NSMA : NSMA	0.000	0.000		0.000		6.353	Nov 2023	-		6.353	0.000	6.353	-
Subtotal			104.791	49.219		39.141		53.727		-		53.727	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2213 / Mission Planning					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
FY 2024 NGNMPS prime development contract supports continued development of micro-services and continuous software integration for advanced mission planning, execution, dynamic re-planning, and analysis capabilities.															
FY 2024 continues to support incremental funding for JMPS Primary Software Development efforts awarded via multiple contracts for service oriented architecture development.															
FY 2024 supports incremental funding for the NGNMPS Primary Software Development efforts awarded via a competitive contract award. Funding in FY 2024 supports NGNMPS program phasing required to transition legacy JMPS-M platforms to NGNMPS before JMPS-M end of life while also developing advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support the National Defense Strategy and Interim National Security Strategic Guidance. The performing activities and locations are currently various to support a competitive contracting strategy. Once awarded, the performing activities and locations will be updated to reflect the selected contractors.															
FY 2024 realigns Multi-Level Mission Planning from other budgets for increased transparency. This capability facilitates mission management spanning multiple classified domains; further details are classified.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JMPS-M Systems Engineering	WR	NAWCAD : Patuxent River, MD	6.785	1.475	Nov 2021	1.239	Nov 2022	0.310	Nov 2023	-		0.310	Continuing	Continuing	Continuing
JMPS-M Systems Eng & Integration	WR	NAWCWD : Point Mugu, CA	0.000	1.860	Nov 2021	1.562	Nov 2022	0.000		-		0.000	0.000	3.422	-
JMPS-M Systems Engineering	MIPR	Hill AFB : Ogden, UT	0.100	0.051	Nov 2021	0.045	Nov 2022	0.075	Nov 2023	-		0.075	Continuing	Continuing	Continuing
JMPS-M Integrated Logistics Support	WR	NAWCWD : Point Mugu, CA	1.070	0.214	Nov 2021	0.180	Nov 2022	0.075	Nov 2023	-		0.075	Continuing	Continuing	Continuing
NGNMPS Systems Eng & Integration	WR	NAWCWD : Point Mugu, CA	11.021	0.258	Nov 2021	0.220	Nov 2022	2.143	Nov 2023	-		2.143	Continuing	Continuing	Continuing
NGNMPS Systems Engineering	WR	NAWCAD : Patuxent River, MD	3.750	2.020	Nov 2021	1.625	Nov 2022	2.356	Nov 2023	-		2.356	Continuing	Continuing	Continuing
NGNMPS Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.505	0.258	Nov 2021	0.220	Nov 2022	0.283	Nov 2023	-		0.283	Continuing	Continuing	Continuing
NGNMPS Integrated Logistics Support	WR	NAWCWD : Point Mugu, CA	0.505	0.000		0.000		0.283	Nov 2023	-		0.283	Continuing	Continuing	Continuing
NGNMPS Systems Engineering	C/CPFF	Zenetex : Herndon, VA	2.522	1.365	Jan 2022	1.151	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605215N / Mission Planning

## Project (Number/Name)

2213 / Mission Planning

## Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGNMPS Systems Engineering	TBD	TBD : TBD	0.000	0.000		0.000		1.014	Jan 2024	-		1.014	0.000	1.014	-
NGNMPS Systems Engineering	C/CPFF	MITRE : Lexington Park, MD	1.101	0.754	Jan 2022	0.650	Jan 2023	0.415	Jan 2024	-		0.415	Continuing	Continuing	Continuing
NGNMPS Systems Engineering	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.659	Nov 2023	-		0.659	0.000	0.659	-
Systems Engineering/ J MPS Expeditionary	WR	NAWCWD : Point Mugu, CA	0.740	0.000		0.000		0.000		-		0.000	0.000	0.740	-
STORM Systems Engineering Support	WR	NAWCWD : Point Mugu, CA	0.800	1.270	Nov 2021	0.825	Nov 2022	0.625	Nov 2023	-		0.625	Continuing	Continuing	Continuing
STORM Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.575	0.744	Nov 2021	0.480	Nov 2022	0.350	Nov 2023	-		0.350	Continuing	Continuing	Continuing
<b>Subtotal</b>			29.474	10.269		8.197		8.588		-		8.588	Continuing	Continuing	N/A

## Remarks

FY 2024 supports NGNMPS systems engineering and design for ILS activities at multiple government and contractor sites. Funding in FY2024 support NGNMPS program phasing required to transition legacy JMPS-M platforms to NGNMPS before JMPS-M end of life while also developing advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support the National Defense Strategy and Interim National Security Strategic Guidance.

## Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : Point Mugu, CA	27.482	5.728	Nov 2021	4.695	Nov 2022	5.904	Nov 2023	-		5.904	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	COMOPTEVFOR : Norfolk, VA	4.754	0.538	Nov 2021	0.441	Nov 2022	0.560	Nov 2023	-		0.560	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	3.009	1.796	Nov 2021	1.457	Nov 2022	1.796	Nov 2023	-		1.796	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	Dep Of Energy : Kansas City, MO	0.000	4.000	Nov 2021	1.732	Nov 2022	1.011	Nov 2023	-		1.011	Continuing	Continuing	Continuing
<b>Subtotal</b>			35.245	12.062		8.325		9.271		-		9.271	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2213 / Mission Planning					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks Test and Evaluation: Funding in FY 2024 supports the continuation of STORM system test activities as well as NGNMPS program phasing required to transition legacy JMPS-M platforms to NGNMPS before JMPS-M end of life while also developing advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support the National Defense Strategy and Interim National Security Strategic Guidance.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JMPS-M Program Management Support and Travel	WR	NAWCAD : Patuxent River, MD	12.088	0.000		0.000	Nov 2022	0.200	Nov 2023	-		0.200	Continuing	Continuing	Continuing
Program Management Support and Travel	WR	NAWCWD : China Lake, CA	0.982	0.501	Nov 2021	0.421	Nov 2022	0.175	Nov 2023	-		0.175	Continuing	Continuing	Continuing
NGNMPS Program Management Support and Travel	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		1.405	Nov 2023	-		1.405	0.000	1.405	-
NGNMPS Program Management Support	C/CPFF	Ausley Associates : Lexington Park, MD	3.196	0.840	May 2022	0.706	May 2023	0.000	May 2024	-		0.000	Continuing	Continuing	Continuing
NGNMPS Program Management Support	C/CPFF	Precise : Lexington Park, MD	0.000	0.000		0.000		1.035	May 2024	-		1.035	0.000	1.035	-
Program Management Support and Travel	WR	NAWCAD : Patuxent River, MD	0.000	2.480	Nov 2021	2.083	Nov 2022	0.000		-		0.000	0.000	4.563	-
Subtotal			16.266	3.821		3.210		2.815		-		2.815	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			185.776	75.371		58.873		74.401		-		74.401	Continuing	Continuing	N/A
Remarks															

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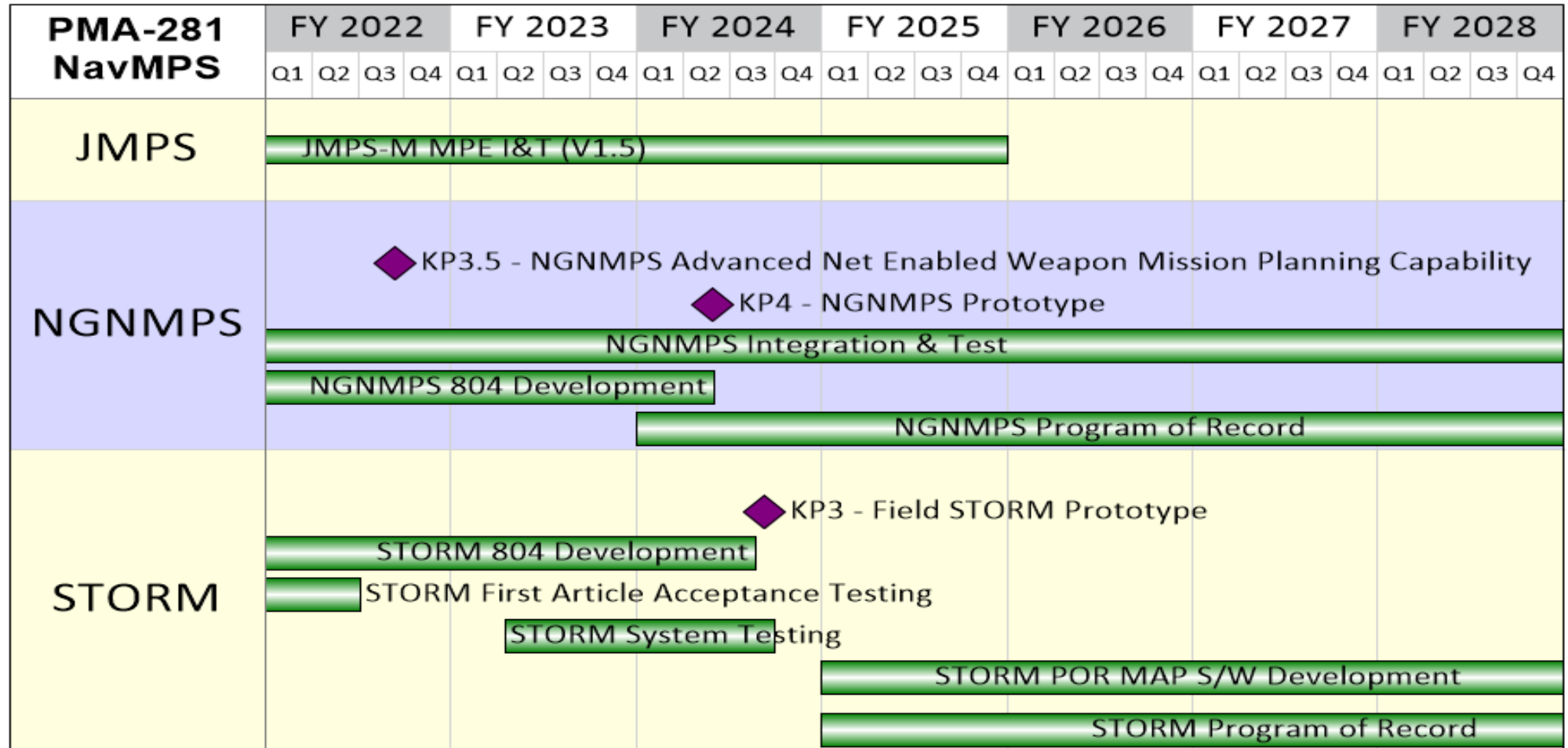
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0605215N / Mission Planning

Project (Number/Name)  
2213 / Mission Planning



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605215N / <i>Mission Planning</i>	<b>Project (Number/Name)</b> 2213 / <i>Mission Planning</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Joint Mission Planning Systems (JMPS)</i></b>				
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: MPE Integration (V1.5.X)	1	2022	4	2025
Acquisition Milestones- Next Generation Naval Mission Planning System: KP3.5- Advanced Net Enabled Weapon mission planning capability	3	2022	3	2022
Acquisition Milestones- Next Generation Naval Mission Planning System: KP4- NGNMPS Prototype	2	2024	2	2024
NGNMPS Primary Software Development: NGNMPS Integration and Test	1	2022	4	2027
NGNMPS Primary Software Development: NGNMPS 804 Development	1	2022	2	2024
NGNMPS Primary Software Development: NGNMPS Program of Record	1	2024	4	2027
Acquisition Milestones- STORM: KP3- Field STORM Prototype	3	2024	3	2024
STORM Development: STORM 804 Development	1	2022	3	2024
STORM Development: STORM First Article Acceptance Testing	1	2022	2	2022
STORM Development: STORM System Testing	2	2023	3	2024
STORM Development: STORM MAP SW Development	1	2024	4	2027
STORM Development: STORM Program of Record	1	2024	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2311 / Stores Planning and Weaponneering Module			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2311: Stores Planning and Weaponneering Module	42.898	10.884	12.234	12.047	-	12.047	12.154	12.353	12.519	12.864	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Weaponneering and Stores Planning (WASP) components are integrated software products that allow aircrew to determine the best combinations of weapons and delivery conditions to achieve the desired level of target damage, eliminate weapon delivery solutions that violate aircraft Type/Model/Series (T/M/S) specific safety-of-flight envelopes, and perform detailed weapons employment planning. The WASP software is approved by NAVAIR Airworthiness and Cybersafe Office (formerly AIR 4.0P) as a flight clearance implementation system for the F/A-18 A, A+, A++, B, C, C+, D, D (RC), E, F, EA-18G. The WASP software includes potential support for other platforms to include F-35, P-8, AH-1, and other fixed wing and rotary wing platforms. The WASP software components will alert pilots if their planned weapon release conditions meet flight clearance limits, will result in bomb-to-bomb collisions, bomb-to-aircraft collisions, aircraft overstress, or excessive risk of aircraft loss/damage in the event of fuze early bursts. Weapon employment planning is fundamental to the Joint Capability Area of Force Application and joint mission areas of Strike and Amphibious Warfare. The WASP software provides the Navy and Marine Corps with weaponneering capabilities that are critical requirements for Interdiction, Armed Reconnaissance and Close Air Support mission planning. Therefore, WASP product availability is critical to successful employment of the Joint Mission Planning System (JMPS) for the F/A-18 A-F and EA-18G. The WASP product encompasses a multitude of Government Furnished Information software components and tools including aircraft target maneuver simulations and weapon flyout models. The WASP software products will require updates as emergent requirements for new aircraft T/M/S, stores and weapons are approved, new flight clearances/restrictions are issued by Naval Air Systems Command and cyber security mandates are released. FY 2024 and out includes funding for the research and development in order to integrate WASP with 3-D mission rehearsal, provide dynamic Safe Escape Automation Layer (SEAL) calculations on Electronic Kneeboard (EKB), develop WASP for other Navy and Marine Corps platforms, and support WASP development and integration with the Next Generation Naval Mission Planning System (NGNMPS).

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Product Development	5.422	5.610	5.640	0.000	5.640
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Includes associated system engineering design, development, installation, integration and software development for Weaponneering and Stores Planning (WASP) components to support F/A-18 A-F and EA-18G. Provide domain engineering support for weapons separation, aircraft loads, flutter, fuzing and Safe Escape Automation Layer (SEAL) for application to WASP. Provide analysis of new requirements, allocation of requirements, design oversight, and life cycle management of the WASP program. Develop new aircraft configuration, aircraft loading, store release and delivery planning components for F/A-18 A-F and EA-18G, and implement new flight clearances and flight restrictions issued by NAVAIRSYSCOM. Provide					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605215N / Mission Planning		Project (Number/Name) 2311 / Stores Planning and Weaponneering Module		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
configuration management, system administration, quality assurance, documentation, metrics and software risk management for WASP. Acquire, integrate and modify numerous Government Furnished Information (GFI) software components and tools (aircraft target maneuver simulations, weapon flyout models, etc.) that are used for the WASP software development. Integrate WASP with weapons mission planning systems as required.						
FY 2023 Plans: Continue development of WASP 5.1 for an FY 2023 release to the fleet with continuing database updates and defect correction. Fund requirements definition and initial system development of WASP NGNMPS for an incremental release to the Fleet starting in FY 2024.						
FY 2024 Base Plans: Conduct requirements definition of WASP 5.2 for an FY 2025 release to the fleet with continuing database updates and defect corrections. Fund requirements definition and system development/migration of full WASP capabilities to the NGNMPS framework.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Slight increase in Product Development funding due to concurrent development of WASP 5.2, multiple database update versions and WASP NGNMPS initial system development.						
Title: Test and Evaluation (T&E)		2.359	2.888	2.907	0.000	2.907
Articles:		-	-	-	-	-
Description: Provide test and evaluation for unit and system level testing; functional qualification testing; safety of flight certification testing; integration and standards compliance testing for WASP versions. Provide JMPS-M and Next Generation Naval Mission Planning System Integration test support. Provide testing and test support to ensure all components (to include internally developed software, externally developed GFI) comply with Department of Navy (DoN) and Department of Defense (DoD) software mandates and directives. These include Integrated Shipboard Network System IT-21, and Cyber Risk Management Framework (RMF).						
FY 2023 Plans: Complete test and evaluations of multiple database updates to V5.0. Continue test and evaluation of WASP v5.1 to support						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605215N / Mission Planning		Project (Number/Name) 2311 / Stores Planning and Weaponneering Module		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
an FY23 release to the Fleet and automated test framework.						
<b>FY 2024 Base Plans:</b> Complete test and evaluations of multiple database updates to V5.1. Continue to develop requirements of WASP V5.2 to support an FY25 release to Fleet and automated test framework.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Slight increase in test and evaluation due to multiple database updates to WASP V5.1, continuing test and evaluation of WASP V5.2 for FY25 fleet release, and initial investment into automated test framework.						
<b>Title:</b> Systems Engineering Support		2.608	3.248	3.275	0.000	3.275
<b>Articles:</b>		-	-	-	-	-
<b>Description:</b> Provide systems engineering support, which includes requirements definition and analysis, compliance with Naval Air Systems Command systems engineering technical review processes, acquisition documentation development, cost, schedule and performance management, and compliance with external directives. Provide travel for government personnel.						
<b>FY 2023 Plans:</b> Continue Systems Engineering support to the WASP for future software releases to the fleet and support legacy WASP. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases.						
<b>FY 2024 Base Plans:</b> Continue Systems Engineering support to the WASP for future software releases to the fleet and support legacy WASP. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605215N / Mission Planning		Project (Number/Name) 2311 / Stores Planning and Weaponneering Module		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Slight increase in Systems Engineering due to continued support and development of legacy WASP as well as the development of additional integration plans with services architecture and NGNMPS.						
<b>Title:</b> Program Management						
<b>Articles:</b>						
<b>Description:</b> Provide program management support, which includes requirements definition and analysis, compliance with Naval Air Systems Command systems engineering technical review processes, acquisition documentation development, cost, schedule and performance management, and compliance with external directives. Provide travel for government personnel.						
<b>FY 2023 Plans:</b> Continue project management support to the WASP for future software releases to the fleet. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases.						
<b>FY 2024 Base Plans:</b> Continue project management support to the WASP for future software releases to the fleet. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease due to reduced contractor support in out years.						
<b>Accomplishments/Planned Programs Subtotals</b>		10.884	12.234	12.047	0.000	12.047
<b>C. Other Program Funding Summary (\$ in Millions)</b>						
N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b>						
Weaponneering and Stores Planning (WASP) products, delivered quarterly, are developed in-house by NAVAIR consisting of Naval Air Warfare Center Aircraft Division and Naval Air Warfare Center Weapons Division engineers and support contractors. The team has migrated to a smaller government team that provides functional expertise in aircraft safety-of-flight (air-vehicle stores compatibility, weapons separation, aircraft aerodynamic flutter, ground/flight loads, authorized fuze arm times,						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605215N / <i>Mission Planning</i>	<b>Project (Number/Name)</b> 2311 / <i>Stores Planning and Weaponneering Module</i>

aircraft SEAL), and guided weapons employment, with the majority of the software development conducted by various contractors. The Government, engineering, test, and support teams (test facilities, functional qualification testing and certification/accreditation test) are supplemented with contractor labor.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2311 / Stores Planning and Weaponneering Module					

<b>Product Development (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Product Development	WR	Naval Air Warfare Center Aircraft Division NAWCAD : Patuxent River, MD	0.579	0.100	Nov 2021	0.114	Nov 2022	0.136	Nov 2023	-		0.136	Continuing	Continuing	Continuing
Product Development	MIPR	Air Force Seek Eagle : Hill Air Force Base, UT	0.278	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	DCS Corp : Alexandria, VA	2.367	0.000		0.000		0.000		-		0.000	0.000	2.367	2.367
Product Development (V4.X/V5.X)	C/CPFF	DCS Corp : Alexandria, VA	20.898	5.322	Mar 2022	5.523	Mar 2023	5.504	Mar 2024	-		5.504	Continuing	Continuing	Continuing
<b>Subtotal</b>			24.122	5.422		5.637		5.640		-		5.640	Continuing	Continuing	N/A

**Remarks**

The FY 2024 Product Development for WASP Major Version (V5.2) effort is associated with the development of WASP V5.2 and multiple minor builds to support fielded WASP systems.

<b>Support (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
System Engineering and Program Support	WR	NAWCAD : Patuxent River, MD	5.989	1.308	Nov 2021	1.613	Nov 2022	1.635	Nov 2023	-		1.635	Continuing	Continuing	Continuing
Government Engineering Support: Guided Weapons	WR	Naval Air Warfare Center Weapons Division NAWCWD : China Lake, CA	0.266	0.025	Nov 2021	0.000		0.030	Nov 2023	-		0.030	Continuing	Continuing	Continuing
Systems Engineering Support	C/CPFF	KBRwyle : Houston, TX	0.000	1.220	Mar 2022	1.553	Mar 2023	1.555	Mar 2024	-		1.555	Continuing	Continuing	Continuing
Govt Engineering Support: Mission Planning Environment Integration	WR	NAWCWD : Point Mugu, CA	0.415	0.055	Nov 2021	0.055	Nov 2022	0.055	Nov 2023	-		0.055	Continuing	Continuing	Continuing
<b>Subtotal</b>			6.670	2.608		3.221		3.275		-		3.275	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2311 / Stores Planning and Weaponneering Module					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks The Support costs in FY 2024 are associated with the development of WASP V5.2 and multiple minor builds to support fielded WASP systems.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	5.158	0.822	Nov 2021	0.990	Nov 2022	0.997	Nov 2023	-		0.997	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	DCS Corp : Alexandria, VA	4.435	0.725	Mar 2022	0.765	Mar 2023	0.775	Mar 2024	-		0.775	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	KBRwyle : Houston, TX	0.000	0.812	Mar 2022	1.133	Mar 2023	1.135	Mar 2024	-		1.135	Continuing	Continuing	Continuing
Subtotal			9.593	2.359		2.888		2.907		-		2.907	Continuing	Continuing	N/A
Remarks The FY 2024 Test and Evaluation costs for WASP Major Version (V5.2) effort is associated with the development of WASP V5.2 and multiple minor builds to support fielded WASP systems.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Precise : Lexington Park, MD	1.808	0.260	May 2022	0.253	May 2023	0.100	May 2024	-		0.100	Continuing	Continuing	Continuing
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.615	0.210	Nov 2021	0.210	Nov 2022	0.100	Nov 2023	-		0.100	Continuing	Continuing	Continuing
Travel	Various	NAVAIR : Patuxent River, MD	0.090	0.025	Nov 2021	0.025	Nov 2022	0.025	Nov 2023	-		0.025	Continuing	Continuing	Continuing
Subtotal			2.513	0.495		0.488		0.225		-		0.225	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 2311 / Stores Planning and Weaponneering Module					
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		42.898	10.884		12.234		12.047		-		12.047	Continuing	Continuing	N/A

**Remarks**  
Prior to FY17, PU 2311 was budgeted under PE 0604215N.

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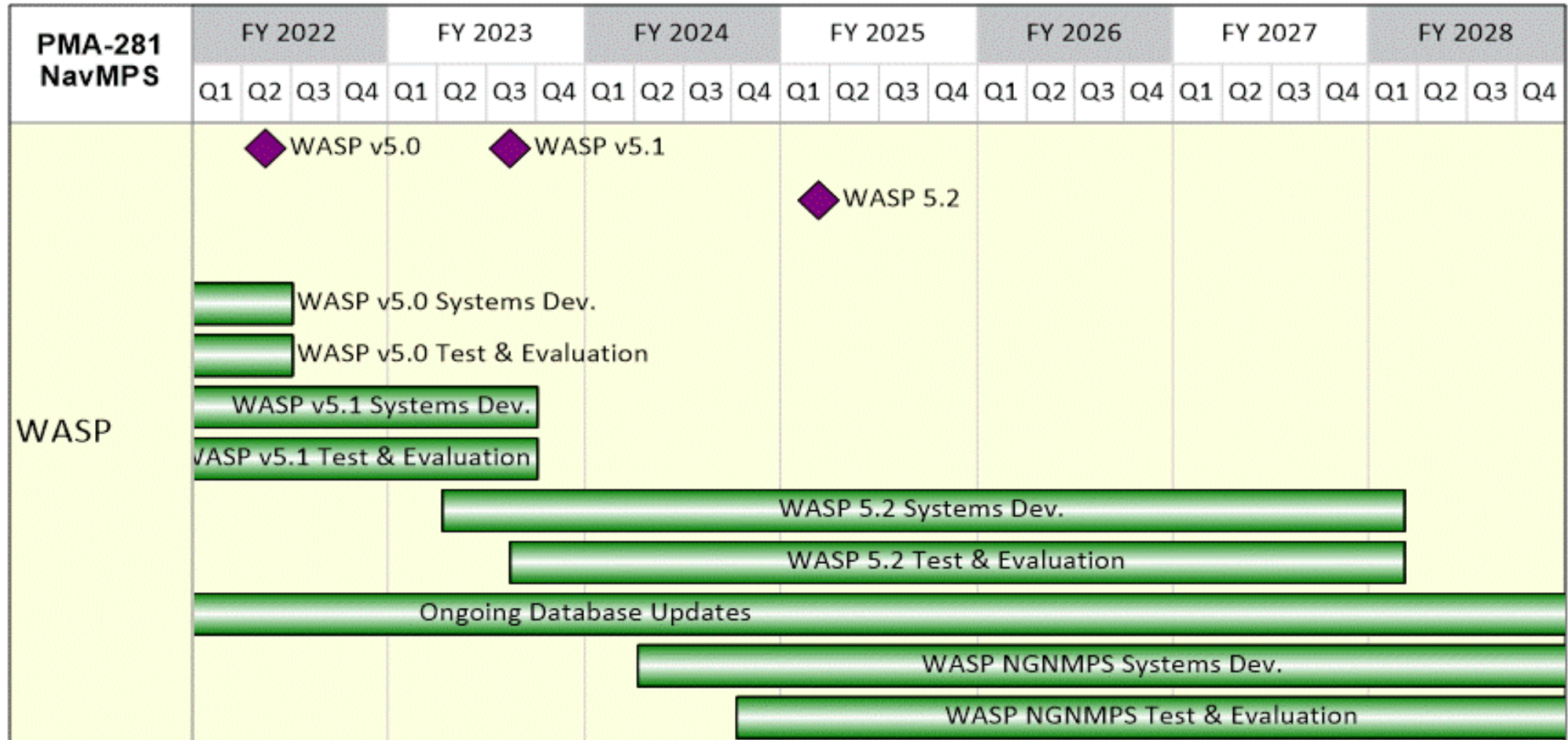
**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**  
1319 / 5

**R-1 Program Element (Number/Name)**  
PE 0605215N / *Mission Planning*

**Project (Number/Name)**  
2311 / *Stores Planning and Weaponeering Module*



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605215N / <i>Mission Planning</i>	<b>Project (Number/Name)</b> 2311 / <i>Stores Planning and Weaponneering Module</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Stores Planning and Weaponneering Module</i></b>				
Systems Development: WASP v5.0 (F/A-18A/B/C/D/E/F, EA-18G):	1	2022	2	2022
Systems Development: WASP v5.1 (F/A-18A/B/C/D/E/F, EA-18G):	1	2022	3	2023
Systems Development: WASP v5.2 (F/A-18A/B/C/D/E/F, EA-18G):	4	2022	2	2024
Systems Development: WASP Ongoing Database Updates:	1	2022	4	2028
Systems Development: WASP NGNMPS System Development:	4	2024	4	2028
Test & Evaluation Milestones: WASP v5.0 (F/A-18A/B/C/D/E/F, EA-18G):	1	2022	2	2022
Test & Evaluation Milestones: WASP v5.1 (F/A-18A/B/C/D/E/F, EA-18G):	1	2022	3	2023
Test & Evaluation Milestones: WASP NGNMPS Test & Evaluation	4	2024	4	2028
Production Milestones: WASP v5.0 (F/A-18A/B/C/D/E/F, EA-18G) IOC::	2	2022	2	2022
Production Milestones: WASP v5.1 (F/A-18A/B/C/D/E/F, EA-18G) IOC::	3	2023	3	2023
Production Milestones: WASP v5.2 F/A-18A/B/C/D/E/F, EA-18G) IOC::	2	2024	2	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Next Generation Naval Mission Planning System (NGNMPS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative multi-domain mission planning, execution and analysis. The NGNMPS capability provides advanced multiple aircraft planning capabilities focused on emerging, high-threat mission areas. The emerging, near-peer threat environment demands a much more capable system that enables a team of aircraft to cooperate effectively across multiple mission area domains and security levels. One of these emerging high-threat mission areas demanding significantly improved mission planning capability is the area of Anti-Submarine Warfare (ASW). The increasing ASW threat requires additional mission planning / execution tools and techniques across airborne, shipboard, and undersurface platforms. Accomplishing and defeating the ASW threat will require significant improvements in workflow, usability, and cybersecurity, while also providing the decision aids needed to rapidly plan and effectively employ airborne, shipboard, and subsurface capabilities. These ASW mission planning, execution, and analysis functions comport with National Defense Strategy and Interim National Security Strategic Guidance key objectives. ASW mission planning, execution, and post-mission analysis will be conducted at all appropriate security classification levels.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> Multi domain anti-submarine solutions	0.000	5.000
<b><i>FY 2022 Accomplishments:</i></b> N/A		
<b><i>FY 2023 Plans:</i></b> Initiate requirements analysis for multi-domain anti-submarine warfare (ASW). Identify necessary workflow, tools, and battle management aids. Identify integration points with the Next Generation Naval Mission Planning System as well as other PEO and Systems Command ASW planning and execution tools. Identify and allocate software, hardware, and interface requirements to airborne, surface, and subsurface ASW assets at all appropriate classification levels. Development of initial software capabilities inside the NGNMPS software factory. Support user evaluations. Prepare program documentation to transition ASW requirements into established programs of record. Establish design use cases for requirements definition. Allocate requirements to hardware and software. Establish design working groups, facilitate and conduct user assessments. Ensure delivered software meets NGNMPS business and technical rules.		
<b>Congressional Adds Subtotals</b>	0.000	5.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605215N / <i>Mission Planning</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
<b>D. Acquisition Strategy</b> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605215N / Mission Planning				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ASW Requirements & SW Development	C/CPFF	Progeny Systems Corp : Manassas, VA	0.000	0.000		3.000	May 2023	0.000		-		0.000	0.000	3.000	-
Subtotal			0.000	0.000		3.000		0.000		-		0.000	0.000	3.000	N/A
Remarks															
Initiate requirements analysis for multi-domain anti-submarine warfare (ASW). Identify necessary workflow, tools, and battle management aids. Identify integration points with the Next Generation Naval Mission Planning System as well as other PEO and Systems Command ASW planning and execution tools. Identify and allocate software, hardware, and interface requirements to airborne, surface, and subsurface ASW assets at all appropriate classification levels. Development of initial software capabilities inside the NGNMPS software factory. Support user evaluations. Prepare program documentation to transition ASW requirements into established programs of record.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ASW Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.750	Mar 2023	0.000		-		0.000	0.000	0.750	-
ASW Systems Engineering	WR	NAWCWD : Point Mugu, CA	0.000	0.000		1.000	Mar 2023	0.000		-		0.000	0.000	1.000	-
Subtotal			0.000	0.000		1.750		0.000		-		0.000	0.000	1.750	N/A
Remarks															
Establish design use cases for requirements definition. Allocate requirements to hardware and software. Establish design working groups, facilitate and conduct user assessments. Ensure delivered software meets NGNMPS business and technical rules.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ASW Program Management Support	C/CPFF	Precise : Lexington Park, MD	0.000	0.000		0.250	May 2023	0.000		-		0.000	0.000	0.250	-
Subtotal			0.000	0.000		0.250		0.000		-		0.000	0.000	0.250	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605215N / Mission Planning					Project (Number/Name) 9999 / Congressional Adds			
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		5.000		0.000		-		0.000	0.000	5.000	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605215N / Mission Planning					Project (Number/Name) 9999 / Congressional Adds	

PMA-281 NavMPS	FY 2023				FY 2024				FY 2025				FY 2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Anti-Submarine Warfare (ASW)	<div>ASW Requirements &amp; SW Development</div>															

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605215N / Mission Planning	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Anti-Submarine Warfare (ASW): ASW Requirements Analysis	2	2023	1	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605217N / Common Avionics							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	220.717	52.789	77.960	81.076	-	81.076	61.122	67.146	60.709	49.016	Continuing	Continuing
0572: JT Service/NV Std Avionics CP/SB	220.717	52.789	77.960	81.076	-	81.076	61.122	67.146	60.709	49.016	Continuing	Continuing

## A. Mission Description and Budget Item Justification

This project provides for the identification, study, design, development, demonstration, test, evaluation, and qualification of standard avionics capabilities for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Such air combat electronics developments include communications and airborne networking, navigation and sensors, flight avionics, safety systems, and flight mission information systems for both forward fit and retrofit aircraft. These efforts continue to maintain federated systems while encouraging transition of procurements to support a modular system for enhanced performance and affordability. Consideration is given up front to reduce acquisition costs through larger procurement quantities that satisfy multi-aircraft customer requirements and that reduce life cycle costs in the areas of reliability, maintainability, and training.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production decision.

The total cost of the Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) (DI/MANGL) Middle Tier of Acquisition effort is \$131.9 million, including RDT&E and procurement of prototype units. The DI/MANGL is fully funded through FY27.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	60.117	77.960	65.411	-	65.411
Current President's Budget	52.789	77.960	81.076	-	81.076
Total Adjustments	-7.328	0.000	15.665	-	15.665
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.704	0.000			
• SBIR/STTR Transfer	-1.624	0.000			
• Program Adjustments	0.000	0.000	15.259	-	15.259
• Rate/Misc Adjustments	0.000	0.000	0.406	-	0.406

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0605217N / <i>Common Avionics</i>
<p><b>Change Summary Explanation</b></p> <p>Program Adjustments of \$15.259 million includes an increase for Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) HQMC technical correction from APN-5 to RDT&amp;E (zero-sum) realignment to support Software Reconfigurable Payload (SRP) redesign and development for changes in Tactical Targeting Network Technology (TTNT) Dual Power Amplifier (DPA) and Link 16 waveform integration due to new Federal Aviation Administration (FAA) Link 16 certification requirements and fielding, as well as an increase of \$0.406 million for various miscellaneous and rate adjustments.</p> <p>Schedule:</p> <p>Tactical Communications (TACCOM): Changes incorporated for software integration of evolving technical specifications in support of NSA driven crypto Mod mandates and waveform modernization efforts.</p> <p>FY22: Changed Gen5 NSA Cert from 3Q/22 to 4Q/23; Updated nomenclature for Gen5/6 TSV 3.1.1 ECP Approval 1Q/22 to Gen5 TSV Ste B ECP Approval 1Q/22; Changed Gen6 Ver 004 Rel from 1Q/22 to 2Q/22.</p> <p>FY23: Changed Gen5 JITC Cert from 1Q/23 to 2Q/24; Updated nomenclature for Gen5/6 Data link ECP Approval 4Q/23 to Gen5 TRANSEC ECP Approval and Changed to 1Q/24. Changed Gen5 Ver 008 Rel from 2Q/23 to 3Q/24.</p> <p>FY24: Changed Gen6 NSA Cert from 2Q/24 to 4Q/24; Changed Gen6 JITC Cert from 4Q/24 to 2Q/25.</p> <p>FY25: Changed Gen5 NSA Cert from 2Q/25 to 1Q/26; Changed Gen5 JITC Cert from 4Q/25 to 3Q/26.</p> <p>FY26: Added Gen5 Crypto Mod TSV 4, SINCGARS 3.2 3Q/26 - 4Q/28.</p> <p>FY27: Changed nomenclature from Gen6 JITC Cert 3Q/27 to Gen6 NSA Cert 3Q/27; Changed nomenclature from Gen6 NSA Cert 4Q/27 to Gen6 JITC Cert 4Q/27; Changed Gen6 Ver 006 Rel from 1Q/27 to 4Q/27.</p> <p>FY28: Added FYDP requirements.</p> <p>Ground Proximity Warning System/Terrain Awareness System (GPWS/TAWS II):</p> <p>FY23: For T&amp;E Developmental Testing, Updated nomenclature in 4Q/23 &amp; 3Q/24 from Northrop Grumman/Bell Flight Integration Testing FB1 &amp; FB2 to Northrop Grumman/Bell Helicopter Textron Int Testing FB1 &amp; FB2.</p> <p>FY27: Added V-22 ILA 4Q/27 - 2Q/28.</p> <p>FY28: Added FYDP requirements.</p> <p>Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL): Changes incorporated HQMC technical correction from APN-5 to RDT&amp;E (zero-sum) realignment to support Software Reconfigurable Payload (SRP) redesign and development for changes in Tactical Targeting Network Technology (TTNT) Dual Power Amplifier (DPA) and Link 16 waveform integration due to new Federal Aviation Administration (FAA) Link 16 certification requirements and fielding. FY23 budget intended to purchase test articles was reinvested in the resolution of technical issues experienced in the development of key components in those test articles. On-going design and development activities continue to address and resolve fact-of-life technical issues in component design. Requested FY24 funding is required to complete and purchase the test articles and continue extended aircraft integration activity leading to FY25 Flight Demo. Schedule changes also allow for NSA certification of SRP and components to obtain fielding approvals.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0605217N / <i>Common Avionics</i>
FY22: Changed Design Review from 1Q/22 to 3Q/23, updated nomenclature to Design Review #1; Nomenclature update from Seasite/MULE Lab/MV-22 SIL Prep/Test to MANGL Ground Node Prep/Test. FY23: Changed MANGL Ground Node Prep/Test end date from 4Q/23 to 2Q/24; Changed Qual Testing from 1Q/23 - 4Q/23 to 2Q/24 - 4Q/24; Changed Cyber Security Tabletop from 3Q/23 to 2Q/24; Changed Delivery Test Art. Qty. 4 from 4Q/23 to 4Q/24. FY24: Added Design Review #2 2Q/24; Changed CH-53K & KC-130J Rapid Prototype Approval from 1Q/24 to 2Q/24; Changed MV-22 Rapid Fielding Approval from 3Q/24 to 2Q/25; Changed MV-22 Integration end date from 2Q/24 to 1Q/25; Changed MV-22 Logistics Analysis end date from 2Q/24 to 1Q/25; Changed Flt Demo Test/Rpt from 1Q/24 - 2Q/24 to 1Q/25 - 2Q/25; Changed Delivery Test Art. Qty 3 from 2Q/24 to 1Q/25. FY25: Changed CH-53K & KC-130J Flt Demo/Rpt from 2Q/25 - 4Q/25 to 3Q/25 - 4Q/25.		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605217N / Common Avionics				Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0572: JT Service/NV Std Avionics CP/SB	220.717	52.789	77.960	81.076	-	81.076	61.122	67.146	60.709	49.016	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

(U) Common Avionics FY16 and prior is reflected in PE 0604215N, Project Unit 0572.

**A. Mission Description and Budget Item Justification**

Joint Services/Navy Standard Avionics Components and Subsystems: This project provides for the identification, study, design, development, demonstration, test, evaluation, and qualification of standard avionics capabilities for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Standard avionics capabilities under development include the Joint Service Review Committee for Avionics Standardization (JSRC-AS), Communication Navigation Surveillance/Air Traffic Management (CNS/ATM), Tactical Communications (TACCOM), Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS II), Avionics Component Improvement Program (AvCIP), Avionics Architectures Team (AAT), Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL), and Common Mission Computing and Displays (CMCD). Participation in Human Factors Quality Management Board ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Joint Service Review Committee for Avionics Standardization (JSRC-AS)	0.784	0.793	0.825	0.000	0.825
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> The JSRC-AS program supports Congressional and Assistant Secretary of the Navy for Research, Development and Acquisition direction to control the growing proliferation of unique avionics and improve coordination among the services through the identification, development, and promotion of investigative and development efforts across the services and U.S. Coast Guard. The JSRC-AS supports the development, analysis and review of new avionics requirements with potential for joint service application. The JSRC-AS consists of an O-6 Level principal from each service and U.S. Coast Guard, as well as the appropriate staff, to support joint service working group efforts.					
<b>FY 2023 Plans:</b>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Provide leadership in support of the Navy's interest to the JSRC-AS tri-service committee promoting commonality and joint programs with focus on interoperability, communications, navigation, Joint Services avionics obsolescence management, and update of the Core Avionics Master Plan.  <b>FY 2024 Base Plans:</b> Provide leadership in support of the Navy's interest to the JSRC-AS tri-service committee promoting commonality and joint programs with focus on interoperability, communications, navigation, Joint Services avionics obsolescence management, and update of the Core Avionics Master Plan.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$0.032 million from FY23 to FY24 is due to requirements change to support commonality for joint programs within JSRC-AS.						
<b>Title:</b> Communication Navigation Surveillance/Air Traffic Management (CNS/ATM)  <b>Articles:</b>  <b>Description:</b> This program will conduct and support CNS/ATM research, studies, development, integration, demonstration, test and evaluation efforts for Naval aviation platforms in development. Platform integration of Mode Select (S), 8.33 kHz, Reduced Vertical Separation Minimum (RVSM), Required Navigation Performance Area Navigation (RNP RNAV) to include M Code, and Automatic Dependent Surveillance-Broadcast Out (ADS-BO) functional integration and certification efforts into Naval aircraft. Assist with insertion of communication, navigation, surveillance, and supporting technologies and conduct capability certification on developmental platforms. Capabilities include Mode S, 8.33 kHz, RVSM, RNP RNAV, ADS-BO, and other civil and military capabilities.  <b>FY 2023 Plans:</b> Continue to evaluate technologies and develop solutions to support platform integrations.  <b>FY 2024 Base Plans:</b> Continue to evaluate technologies and develop solutions to support platform integrations.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>		0.128 -	0.144 -	0.147 -	0.000 -	0.147 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
There is no significant change from FY23 to FY24.						
Title: Tactical Communications (TACCOM)		15.184	18.530	23.142	0.000	23.142
Articles:		-	-	-	-	-
Description: This program will conduct research, studies, development, integration, demonstration, test and evaluation efforts to ensure tactical communication systems and capabilities are developed and available to support naval aviation requirements. Perform tactical communication platform integration studies and activities to determine technical and cost effective solutions across naval aviation. Develop tactical communications (voice/data) requirements, concepts and systems which have application across naval aviation. Support all necessary tasks to ensure evolution of legacy communications systems incorporating programmable Communication Security/Information Assurance, Transmission Security (TRANSEC) mandated National Security Agency (NSA) Advanced Crypto Capability (ACC) modernization initiatives, Tactical Secure Voice (TSV) Suite B, Combat Net Radio (CNR) Variable Message Format (VMF), Beyond Line-of-Sight, Satellite Communication (SATCOM) Modernization including Mobile User Objective System (MUOS), High Frequency, Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced SINCGARS Improvement Program (E-SIP), SINCGARS Cryptographic Modernization with TSV 3.1.2, civil interoperability, and data link into the ARC-210 system. Support for networking requirements development and prototyping, Integrated Waveform (IW), Intelligence Broadcast System over modern Code Division Multiple Access based satellite channels, Tactical Networks, Data Links, Link 16 and Link 22.						
FY 2023 Plans:						
Continue software development of Gen5A/Gen6 and address NSA driven specification change from TSV 3.1.1 to TSV 3.1.2 crypto modernization, Single Channel Ground and Airborne Radio System (SINCGARS 3.1.1), Advanced Crypto Capabilities (ACC) modernization, Mobile User Objective System (MUOS) 3.1 and Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN Ed. 4). Attain Gen5 NSA Certification.						
FY 2024 Base Plans:						
Continue software development and execute NSA driven crypto algorithm changes for Gen5A/Gen6 TSV 3.1.2 crypto modernization, Single Channel Ground and Airborne Radio System (SINCGARS 3.1.1), Advanced Crypto Capabilities (ACC) modernization, Mobile User Objective System (MUOS) 3.2 and Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN Ed. 4). Attain Gen5 JITC Certification. Attain approval of Gen5						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
TRANSEC ECP. Release Gen5 Ver 008. Initiate VMF/Data Link MIL Standard Evolution. Initiate Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5 and MUOS 4.x. Attain Gen6 NSA Certification.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$4.612 million from FY23 to FY24 is due to cost associated with the NSA driven change in TSV specification from TSV 3.1.1 to TSV 3.1.2 and US Army change to SINCGARS specification from 3.1 to a 3.1.1 version. In addition, initiating parallel requirements for VMF/Data link Standard Evolution and Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5, MUOS 4.x.						
<b>Title:</b> Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS II)  <b>Articles:</b>  <b>Description:</b> This program will conduct research, studies, development, integration, demonstration, test and evaluation efforts to meet naval aviation GPWS/TAWS II requirements. These requirements span all operational modes and operational environments, to include Degraded Visual Environment. Perform GPWS/TAWS II platform integration studies and activities to determine technical and cost effective solutions across naval aviation. Develop GPWS/TAWS II solutions tailored to platform performance and range of military operations. Develop simulation models for use at Manned Flight Simulator (MFS) or other simulation environments as required for platform tailoring. Evaluate aircraft simulation models for suitability in GPWS/TAWS II development effort. Develop GPWS/TAWS II algorithms utilizing simulation environments as real-time hardware and pilot in the loop tool. Develop and evaluate algorithm interfaces necessary for integration of the algorithm within platform host computer. Develop software code to execute GPWS/TAWS II algorithm in host platforms.  <b>FY 2023 Plans:</b> Deliver H-60 TAWS II FB4. Complete H-1 TAWS II Requirements Development. Award H-1 Integration contract. Complete H-1 TAWS II Software Development for FB1. Complete Lockheed Martin SC-2X Integration Testing FB4. Initiate Northrop Grumman/Bell Helicopter Textron Integration Testing FB1. Complete H-60 TAWS II DT4. Complete Integrated Logistics Assessment for H-60 TAWS II. Deliver H-1 TAWS II FB1.  <b>FY 2024 Base Plans:</b> Obtain H-60 MS C. H-60 Fleet Release. Complete H-1 TAWS II DT1. Complete H-1 TAWS II Software Development for FB2. Complete Integrated Logistics Assessment for H-1 TAWS II. Begin V-22 TAWS II Requirements Development (restart). Complete Northrop Grumman / Bell Helicopter Textron Integration Testing		5.198 -	8.362 -	6.302 -	0.000 -	6.302 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 I JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FB1. Start and complete Northrop Grumman / Bell Helicopter Textron Integration Testing FB2. Begin H-1 TAWS II DT2. H-1 TAWS II FB2 Delivery.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$2.06 million from FY23 to FY24 is due to the completion of the H-60 TAWS II Developmental Testing in FY23, and because the H-60 TAWS II effort will be completing in FY24.						
Title: Avionics Component Improvement Program (AvCIP)  Articles:  Description: Investigate high value Return On Investment component improvement candidate projects. Design and develop solutions that correct avionics systems reliability, performance and sustainment deficiencies in support of NAVAIR Commander's Strategic Imperatives of 'Aligning existing resources to better support today's Readiness' and 'Increase Speed of Products to the Fleet.' Stop operating and sustainment cost growth by reducing costs for fielded systems and implementing life-cycle cost reduction initiatives as part of new systems development. This program positions resources for next year application to fast-track corrections to existing problematic aviation electronics systems. Projects address critical readiness issues (significant back-orders or impending sustainability failures that threaten to down aircraft), functional performance obsolescence issues (system failing to support mission requirement), and top sustainment cost drivers (out of proportion annual maintenance or repair costs). Resources enable design and development of technology insertion and product redesign or replacement to meet readiness goals, meet mission objectives, or reduce overall sustainment costs. Candidate projects are submitted via a rigorous template, reviewed by a panel of Avionics professionals, and selected based upon urgency, warfighting contributions, breadth of application and scope of Return On Investment. Resources cover non-recurring engineering elements (including design and development, prototypes, platform integration, test and evaluation), program management and associated logistics elements (including technical data preparation, support equipment, provisioning, and training).  FY 2023 Plans: Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters).  FY 2024 Base Plans:		4.494 -	5.186 -	5.150 -	0.000 -	5.150 -



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters).						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: There is no significant change from FY23 to FY24.						
Title: Avionics Architecture Team (AAT)		8.430	10.370	10.609	0.000	10.609
Articles:		-	-	-	-	-
Description: The Avionics Architecture Team (AAT) provides hardware and software (HW/SW) standards, product line development, and management for common HW/SW operating environments. AAT is chartered to facilitate NAVAIR's compliance with the Modular Open Systems Approach (MOSA) requirements in accordance with 10 U.S.C. 2446a-2446c; FY17 National Defense Authorization Act (NDAA) Section 805 Modular Open Systems Approach in Development of Major Weapon Systems, 23 Dec 2016; Tri-Service Memorandum for Service Acquisition Executives and Program Executive Officers, 07 Jan 2019; DoDI 5000.02 Operation of the Adaptive Acquisition Framework, 23 Jan 2020; FY21 NDAA Sec. 804 - Implementation of Modular Open Systems Architecture requirements, 01 Jan 2021; and SECNAVINST 5000.2G, Implementation of the Defense Acquisition System and the Adaptive Acquisition Framework, 08 Apr 2022. The Software Open Systems Technologies (SWOST) team manages the Future Airborne Capability Environment (FACE[TM]) Technical Standard, which is developed with the joint collaboration between the Navy, Army, Air Force, industry and academia in accordance with Public Law 104-113. The Hardware Open Systems Technologies team includes the Hardware Open Systems Technologies (HOST) standard, which is developed through government and academia collaboration and is provided to industry for prototyping and implementation efforts. The Functional Architecture for Strategic Reuse (FASTR) initiative, through Platform Integration and Modeling, will define a standard process for mission level capability decomposition to support product line development and management. The AAT provides Subject Matter Experts to define and architect a set of Open Architecture Standards and product lines, design principles and guidance, development and integration tools, acquisition strategy, contracting guidance and cost estimates. The AAT also provides Subject Matter Experts directly to weapons systems/platforms to support inclusion of Open Architecture Standards in the early stages of life cycle development. The results will enable Department of Defense (DoD) weapons systems/platforms to systematically procure open, modular and reconfigurable software architectures, reuse HW/SW, and deliver scalable, portable and interoperable warfighting capabilities at a faster rate, reducing redundant development costs, and increasing competition. Infrastructure components and frameworks built to these standards						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
will support capability upgrades on various platforms by enabling integration of common, non-proprietary applications. The AAT initiatives enable the government's role as Lead Systems Integrator, per the Weapons System Acquisition Reform Act (WSARA) 2009, and cost effectively manage data rights for reuse across the DoD.  <b>FY 2023 Plans:</b> Provide development support, mission based engineering, systems engineering and program management for design and acquisition strategy implementation guidance, and demonstrate interoperability of the standards. Generate revisions for future editions of the Future Airborne Capability Environment (FACE) Technical Standard based on issues identified by government and industry consortium and develop corresponding conformance tools. Incorporate new hardware technologies and develop Tier 2 HOST specifications to support widely adopted commercial technologies and to integrate with platform requirements. Provide input to platforms developing Tier 3 and Tier 4 HOST specifications. Implement Small Form Factor standards into the HOST environment, supporting UAV and other type platforms. Assist platforms with strategies for modular functional architectures and implementation of FACE and HOST standards. Participate in international collaboration efforts to define comprehensive open architecture strategy. Provide Naval Air Enterprise Subject Matter Expertise and documentation support for OSD's Modular Systems Working Group, supporting Congressional and DoD directed Open Architecture development. Generate alignment strategies for a comprehensive open architecture approach between Navy, Army, Air Force and international partners. Support the implementation of Naval Aviation's data model strategy. Provide Subject Matter Expert support for platform integration and competitive source selection. Academia prototyping and demonstration efforts for Future Airborne Capability Environment (FACE), Functional Architecture for Strategic Reuse (FASTR) and Hardware Open Systems Technologies (HOST) initiatives.  <b>FY 2024 Base Plans:</b> Provide development, mission based engineering, systems engineering and program management support for design and implementation guidance of open standards while demonstrating their interoperability. Generate revisions for future editions of the Future Airborne Capability Environment (FACE) Technical Standard based on issues identified by government and industry consortium while facilitating the transition of FACE maintenance from the government to industry. Incorporate new hardware technologies and maintain Tier 3 HOST specifications to support widely adopted commercial technologies and to integrate with platform requirements. Provide input to platforms developing Tier 3 and Tier 4 HOST specifications. Implement Small Form Factor standards into the HOST environment, supporting UAV and other small platforms. Assist platforms with strategies for modular functional architectures and implementation of open architecture standards. Develop HOST Conformance Test procedures and tools to verify conformance to the published HOST standard.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Participate in international collaboration efforts to define a comprehensive open architecture strategy. Provide Naval Air Enterprise Subject Matter Expertise and documentation support for OSD's Modular Systems Working Group, supporting Congressional and DoD directed Open Architecture development. Generate alignment strategies for a comprehensive open architecture approach between Navy, Army, Air Force and international partners. Support the implementation of Naval Aviation's data model strategy. Provide Subject Matter Expert support for platform integration and competitive source selection. Academia prototyping and demonstration efforts for Future Airborne Capability Environment (FACE), Functional Architecture for Strategic Reuse (FASTR) and Hardware Open Systems Technologies (HOST) initiatives.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$0.239 million from FY23 to FY24 is for the development of HOST Conformance Test procedures and tools.						
<b>Title:</b> Common Mission Computing and Displays (CMCD)  <b>Articles:</b>  <b>Description:</b> The Common Mission Computing and Displays (CMCD) program enables the development, procurement, integration, test and fielding of common capabilities through the use of commercial off the shelf mission computing and displays products as part of the CMCD family of systems across multiple platforms. As part of CMCD, the Mission Computer Alternative (MCA) provides for a current state technology common mission computing baseline across multiple legacy aircraft platforms to include the T-45 Goshawk, F/A-18E/F, EA-18G and E-2D Hawkeye. MCA allows for Technology Refresh and cyber protection activities to be conducted throughout the life cycle of the mission computer in the Multi-Use Laboratory Environment (MULE) in a proactive manner. The MULE will also evaluate cyber solutions in accordance with the processes defined in the Risk Management Framework for cyber protections. Mission Computer Alternative (MCA) will enable platforms to remain relevant and quickly gain a tactical edge with new capabilities without waiting years for the traditional mission computer redesign, test and fielding process. Also, part of the CMCD program is the Common Display Alternatives (CDA) initiative to increase pilot tactical and situational awareness and improve the man-machine interface for naval aviators. The CDA initiative evaluates military aircraft platform requirements and commercial aircraft display products for applicability to those military aircraft platforms. Commercial displays are known for their high reliability and the incorporation of the latest technologies.  <b>FY 2023 Plans:</b>		0.460 -	0.515 -	1.515 -	0.000 -	1.515 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Conduct assessments of MCA platform processing needs through organic based MULE lab activities to enhance the MCA and cyber protection capabilities. Initiate planning for Technology and Capability Insertions and leveraging those capabilities across multiple legacy platforms. Conduct an evaluation of the T-45 MCA processing requirements in support of the platform's plan for integrating the replacement HUD in the cockpit. Identify and evaluate potential replacement processors, new interfaces and increased memory needs.</p> <p><b>FY 2024 Base Plans:</b> Conduct assessments of Mission Computer Alternative (MCA) and Mission Computer Adjunct Processor (MCAP) platform processing needs through organic based Multi-Use Laboratory Environment (MULE) lab activities to enhance the MCA and cyber protection capabilities. Continue planning for software and hardware interoperability by leveraging Technology and Capability insertion capabilities across multiple legacy platforms. Identify and evaluate technical refreshes of components such as potential replacement processors, new interfaces and increased memory needs.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Increase of \$1.0 million is for the MULE analysis of interoperability and technical refreshes of components within the MCA to validate readiness of full operation capability.</p>						
<p><b>Title:</b> Digital Interoperability (DI) / Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL)</p> <p><b>Articles:</b></p> <p><b>Description:</b> Digital Interoperability (DI) is the United States Marine Corps' strategy to bridge multiple generations of technology using three matured technologies; gateways, software defined radios, and Commercial Off-The-Shelf (COTS) interfaces. This modular developmental approach enables iterative migration to advanced waveforms and payloads while providing enhanced digital connectivity between forces using dissimilar technologies. DI will enable fleet integration of new capabilities on COTS tablets and Government Off-The-Shelf (GOTS) applications. DI will also enable logistics tracking and reporting (cargo and personnel) with the use of Radio Frequency Identification technology, advanced Electronic Warfare/Cyber capability, and threat data capturing/off-boarding. The architecture establishes the foundation to enable system performance data off-boarding, as well as data fusion and artificial intelligence augmentation capabilities.</p> <p>Development and testing of MANGL components, to include Software Reconfigurable Payload (SRP), gateways and tablets, in Hub and Spoke configurations for MV-22B. Translates messages from one tactical data link to</p>		18.111 3	34.060 -	33.386 7	0.000 -	33.386 7

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
another (i.e. Link 16 to Adaptive Networking Wideband Waveform [ANW2]) with a tactically proven gateway, thereby leveraging previous investments. Provides the foundation for Command, Control, Communications, Electromagnetic Spectrum Operations, and Intelligence exploitation of platform/sensor data off-boarding, data fusion, and distributed processing. Enables real-time blue force situational awareness and improved decision-making through the sharing of a Common Operational Picture, including friendly force positions, capabilities, and threat information for both the aircrew and embarked troops. Provides for operations in denied and degraded environments, enables range extension and distributed operations.						
SRP 2.0 is a single common payload module that is government configuration controlled architecture, and reconfigurable to support simultaneous missions and applications making maximum use of available bandwidth and ensuring interoperability all with a cyber-secure, National Security Agency (NSA) approved, cryptographic solution. There are earlier versions of the SRP (1.0 and 1.5) operationally deployed in other naval platforms. SRP 2.0 provides an imminently upgradable platform for eventual inclusion of Low Probability of Intercept (LPI)/ Low Probability of Detection (LPD) and advanced mesh waveforms for the exchange of tactical data, imagery, and video. Incorporation of new waveforms can be accomplished within 18 months vice the 36 to 48 months required for integration and initial fielding using traditional approaches.						
FY 2023 Plans: Complete Design Review #1. Continue with MV-22 integration and logistics analysis. Continue MANGL Ground Node Prep/Test.						
FY 2024 Base Plans: Complete Design Review #2. Obtain CH-53K & KC-130J Prototype Approval. Continue with MV-22 integration and logistics analysis. Initiate CH-53K and KC-130J integration and logistics analysis. Award contract for seven (7) MANGL test articles. Complete MANGL Ground Node Prep/Test. Initiate and complete Qual Testing and Cyber Security Tabletop. Continue Middle Tier of Acquisition Prototyping effort to design, develop and deliver four (4) MANGL test articles.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.674 million from FY23 to FY24 is due to leveraging lead platforms efforts, realizing efficiencies in the follow-on platforms.						
Accomplishments/Planned Programs Subtotals		52.789	77.960	81.076	0.000	81.076

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605217N / Common Avionics				Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0577: Common Avionics Changes	102.861	128.120	136.199	-	136.199	258.943	264.323	308.865	347.149	1,841.037	6,408.036
Remarks											
D. Acquisition Strategy											
<p>Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) program is a system of systems. The program will encompass the integration of various systems which will be procured utilizing existing contracts for integration on forward-fit and retrofit platforms to provide CNS/ATM functionality. Tactical Communications (TACCOM) is utilizing a firm fixed price contract to Collins Aerospace for research and development of the ARC-210 Gen 5/6 and other Navy contract vehicles for integration studies. The Navy will integrate systems and components to satisfy platform requirements to achieve tactical communication capability as determined by analyses. Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS II) Software Modules will be developed by a Government Software Product Team in collaboration with Industry where required. Avionics Component Improvement Program (AvCIP) will annually review, compete and select candidate component improvement proposals according to urgency, criticality of warfighting contributions, technical risk, breadth of application, and scope of Return On Investment (ROI). Projects are selected by a panel of Avionics management experts, including representatives from OPNAV N98, HQMC AWS, NAVAIR, NAVSUP, and the Fleet. Projects are executed by managers in platform or commodity offices that own the component. The AvCIP program management team manages project selection, allocates funds, monitors multiple project executions against proposed spend plans, and tracks solution performance and achievement of projected ROIs over time using Fleet maintenance and component performance databases. Cost avoidances are coordinated with OPNAV N98 to balance Flying Hour Program costs. Component improvement solutions include modular hardware, software and material upgrades. Resources cover engineering elements (including design and development, prototypes, platform integration, test and evaluation), program management and associated logistics elements (including technical data preparation, support equipment, provisioning, and training). Avionics Architectures Team (AAT) will provide acquisition strategy guidance and direct support to weapon systems/platforms implementing open systems architectures to address open architecture requirements and to conform to public law. Common Mission Computing and Displays (CMCD) enables the development, test and fielding of common capabilities through the use of commercial off the shelf mission computing and displays products across multiple platforms through the Multi-Use Laboratory Environment. Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) is approved as a Middle Tier Rapid Prototyping/Rapid Fielding Program. An Other Transaction Authority (OTA) contracting strategy is being used to fund the prototype and procure test and lab assets. The MANGL prototype will integrate upgraded system components previously fielded by other initiatives with a government developed software reconfigurable payload.</p>											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605217N / Common Avionics				Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev	Various	Various : Various	27.207	2.643	Jan 2022	4.914	Jan 2023	4.906	Jan 2024	-		4.906	Continuing	Continuing	Continuing
Primary Hardware Dev	WR	NAWCAD : Patuxent River, MD	1.798	0.540	Nov 2021	1.819	Nov 2022	2.181	Nov 2023	-		2.181	Continuing	Continuing	Continuing
Primary Hardware Dev DI/ MANGL	MIPR	NRL : Washington, DC	12.731	6.779	Jan 2022	11.041	Jan 2023	10.708	Jan 2024	-		10.708	0.000	41.259	41.259
Primary Hardware Dev DI/ MANGL	SS/FFP	Collins Aerospace : Cedar Rapids, IA	0.000	3.195	May 2022	7.650	May 2023	0.000		-		0.000	0.000	10.845	10.845
Primary Hardware Dev DI/ MANGL	SS/FFP	Kranze Technology Solutions : Prospect Heights, IL	2.366	4.148	May 2022	0.000		0.000		-		0.000	0.000	6.514	6.514
Aircraft Integration DI/ MANGL	SS/FFP	Kranze Technology Solutions : Prospect Heights, IL	0.000	0.000		10.253	Dec 2022	17.632	Dec 2023	-		17.632	0.000	27.885	27.885
Aircraft Integration TACCOM	SS/FFP	Collins Aerospace : Cedar Rapids, IA	40.413	8.540	Jan 2022	10.341	Jan 2023	14.362	Jan 2024	-		14.362	0.000	73.656	73.656
Aircraft Integration GPWS/ TAWS II	SS/CPIF	Lockheed Martin : Owego, NY	1.741	1.285	Nov 2021	2.215	Nov 2022	1.922	Nov 2023	-		1.922	0.000	7.163	7.163
Systems Engineering AAT	MIPR	CCDC/UARC : Huntsville, AL	1.479	1.714	Jan 2022	1.700	Jan 2023	1.742	Jan 2024	-		1.742	0.000	6.635	6.635
Systems Engineering TACCOM	WR	NAWCAD : Patuxent River, MD	10.383	2.170	Nov 2021	2.029	Nov 2022	2.310	Nov 2023	-		2.310	Continuing	Continuing	Continuing
Systems Engineering	Various	Various : Various	12.449	2.184	Dec 2021	2.525	Dec 2022	2.454	Dec 2023	-		2.454	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : Patuxent River, MD	3.908	2.272	Nov 2021	1.285	Nov 2022	2.548	Nov 2023	-		2.548	Continuing	Continuing	Continuing
Prior Yr Product Dev no longer funded in FYDP	Various	Various : Various	26.943	0.000		0.000		0.000		-		0.000	0.000	26.943	26.943
Subtotal			141.418	35.470		55.772		60.765		-		60.765	Continuing	Continuing	N/A
Remarks Primary Hardware Dev NAWCAD increase from FY23 to FY24 is due to the restart for V-22 TAWS II Requirements Development. Primary Hardware Dev DI/MANGL NRL & Collins Aerospace decrease from FY23 to FY24 is due to internal realignment to A/C Integration to support SRP integration of the MANGL prototype for MV-22/CH-53-K/KC-130J Platforms. A/C Integration DI/MANGL increase from FY23 to FY24 is due to the additional Platforms (CH-53K/KC-130J) to include Lead Platform (MV-22).															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605217N / Common Avionics				Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
A/C Integration TACCOM increase from FY23 to FY24 is due to NSA driven change in TSV specification from TSV 3.1.1 to TSV 3.1.2 and US Army change to SINCGARs specification from 3.1 to a 3.1.1 version. In addition, initiating parallel requirements for VMF/Data link Standard Evolution and Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5, MUOS 4.x.															
A/C Integration GPWS/TAWS II decrease from FY23 to FY24 is due to the completion of H-60 GPWS/TAWS II DT 4.															
Systems Engineering TACCOM NAWCAD increase from FY23 to FY24 is due to NSA driven change in TSV specification from TSV 3.1.1 to TSV 3.1.2 and US Army change to SINCGARs specification from 3.1 to a 3.1.1 version. In addition, initiating parallel requirements for VMF/Data link Standard Evolution and Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5, MUOS 4.x.															
Systems Engineering NAWCAD increase from FY23 to FY24 is due to the MULE analysis of interoperability and technical refreshes of components within the MCA to validate readiness of full operation capability.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development TACCOM	SS/FFP	Collins Aerospace : Cedar Rapids, IA	0.833	0.057	Mar 2022	1.316	Mar 2023	1.500	Mar 2024	-		1.500	0.000	3.706	3.706
Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	3.725	0.929	Nov 2021	1.317	Nov 2022	1.492	Nov 2023	-		1.492	Continuing	Continuing	Continuing
Support Development	Various	Various : Various	1.319	0.100	Jan 2022	0.000		1.000	Nov 2023	-		1.000	0.000	2.419	2.419
Subtotal			5.877	1.086		2.633		3.992		-		3.992	Continuing	Continuing	N/A
Remarks															
Software Development TACCOM increase from FY23 to FY24 is due to NSA driven change in TSV specification from TSV 3.1.1 to TSV 3.1.2 and US Army change to SINCGARs specification from 3.1 to a 3.1.1 version. In addition, initiating parallel requirements for VMF/Data link Standard Evolution and Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5, MUOS 4.x.															
Integrated Logistics Support NAWCAD increase from FY23 to FY24 is due to DI/MANGL ILS support for CH-53K/KC-130J Platforms.															
Support Development V/V increase from FY23 to FY24 is due to DI/MANGL ILS support for CH-53K/KC-130J Platforms.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	4.469	1.169	Nov 2021	3.391	Nov 2022	1.320	Nov 2023	-		1.320	Continuing	Continuing	Continuing



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605217N / Common Avionics				Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	2.646	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			7.115	1.169		3.391		1.320		-		1.320	Continuing	Continuing	N/A
Remarks Dev Test & Evaluation decrease from FY23 to FY24 is due to completion of H-60 GPWS/TAWS II DT 4 and DI/MANGL Ground Node Prep/Test.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Various	14.248	2.350	Jan 2022	4.829	Jan 2023	2.306	Jan 2024	-		2.306	Continuing	Continuing	Continuing
Contractor Engineering Support TACCOM	C/CPFF	Precise : Lexington Park, MD	7.353	1.005	Dec 2021	1.275	Dec 2022	1.300	Dec 2023	-		1.300	0.000	10.933	10.933
Contractor Engineering Support AAT	C/CPFF	Precise : Lexington Park, MD	10.372	2.800	Dec 2021	2.904	Dec 2022	3.224	Dec 2023	-		3.224	0.000	19.300	19.300
Contractor Management Support	Various	Various : Various	3.056	1.538	Dec 2021	0.679	Dec 2022	1.371	Dec 2023	-		1.371	Continuing	Continuing	Continuing
Contractor Management Support AAT	C/CPFF	Precise : Lexington Park, MD	2.317	0.580	Dec 2021	0.600	Dec 2022	0.000		-		0.000	0.000	3.497	3.497
Contractor Management Support DI/MANGL	C/CPFF	Precise : Lexington Park, MD	0.482	1.086	Dec 2021	0.000		1.294	Dec 2023	-		1.294	0.000	2.862	2.862
Government Engineering Support	WR	NUWC : Keyport, WA	0.613	0.000	Nov 2021	0.049	Nov 2022	0.000		-		0.000	0.000	0.662	0.662
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	4.895	0.782	Nov 2021	0.848	Nov 2022	0.861	Nov 2023	-		0.861	Continuing	Continuing	Continuing
Government Engineering Support AAT	WR	NAWCAD : Patuxent River, MD	7.456	1.405	Nov 2021	1.991	Nov 2022	1.746	Nov 2023	-		1.746	Continuing	Continuing	Continuing
Program Management Support	WR	NAWCAD : Patuxent River, MD	14.507	3.480	Nov 2021	2.937	Nov 2022	2.847	Nov 2023	-		2.847	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605217N / Common Avionics				Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	0.133	0.000		0.002	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Travel	WR	NAVAIR : Patuxent River, MD	0.125	0.038	Feb 2022	0.050	Feb 2023	0.050	Feb 2024	-		0.050	Continuing	Continuing	Continuing
Prior Yr Mgmt Svcs no longer funded in FYDP	Various	Various : Various	0.750	0.000		0.000		0.000		-		0.000	0.000	0.750	0.750
Subtotal			66.307	15.064		16.164		14.999		-		14.999	Continuing	Continuing	N/A
Remarks															
Contractor Engineering Support and Contractor Management Support overall increases/decreases from FY23 to FY24 are for contract realignment of support due to personnel movements.															
Government Engineering Support NUWC decrease from FY23 to FY24 is due to AVCIP project completion.															
Government Engineering Support AAT decrease from FY23 to FY24 is due to personnel movements/attrition.															
Program Management Support decrease from FY23 to FY24 is due to personnel movements/attrition.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			220.717	52.789		77.960		81.076		-		81.076	Continuing	Continuing	N/A
Remarks															
(U) Common Avionics FY16 and prior is reflected in PE 0604215N, Project Unit 0572.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0605217N / Common Avionics

Project (Number/Name)  
0572 / JT Service/NV Std Avionics CP/SB

COMMUNICATIONS, NAVIGATION, SURVEILLANCE/AIR TRAFFIC MGMT (CNS/ATM)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Systems Development																												
	Evaluate CNS/ATM technologies and develop solutions to support platform integrations																											
Test and Evaluation																												
Production Milestones																												
Deliveries																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605217N / <i>Common Avionics</i>	<b>Project (Number/Name)</b> 0572 / <i>JT Service/NV Std Avionics CP/SB</i>
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TACTICAL COMMUNICATIONS (TACCOM)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
<b>Acquisition Milestones</b>																												
<b>Systems Development</b>	Crypto Mod, Gen6 TRANSEC & TSV Ste B																											
	Gen5A TSV 3.1.x, Crypto Mod, SINCGARS, SATURN																											
	Gen6 TSV 3.1.x, Crypto Mod, SINCGARS, ACC, SATURN 4, MUOS 3.2																											
									VMF/ Data Link Mil Standard Evolution																			
									Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5, MUOS 4.x																			
																	Gen5 Crypto Mod, TSV 4, SINCGARS 3.2											
<b>Test and Evaluation</b>	Gen6 JITC Cert					Gen5 NSA Cert			Gen5 JITC Cert		Gen6 NSA Cert	Gen6 JITC Cert			Gen5 NSA Cert	Gen5 JITC Cert			Gen6 NSA Cert	Gen6 JITC Cert			Gen5 NSA Cert	Gen5 JITC Cert				
	▼					▼			▼		▼	▼			▼	▼			▼	▼			▼	▼				
<b>Production Milestones</b>	Gen5 TSV Ste B ECP Approval								Gen5 TRANSEC ECP Approval														Gen6 S/W ECP Approval					
	▼								▼														▼					
<b>Deliveries</b>		Gen6 Ver 004 Rel								Gen5 Ver 008 Rel			Gen6 Ver 005 Rel				Gen5 Ver 009 Rel					Gen6 Ver 006 Rel						
		▼								▼			▼				▼					▼						

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R-1 Program Element (Number/Name)	Program Element Description	Program Element Type	Program Element Status	Program Element Location	Program Element Contact	Program Element Date	Program Element Notes

PE 0605217N / Common Avionics

0572 / JT Service/NV Std Avionics CP/SB

GROUND PROXIMITY WARNING SYSTEM/TERRAIN AWARENESS WARNING SYSTEM (GPWS/TAWS)		FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones						H-1 Integration Contract ▲				H-60 MS C ▲		H-60 Fleet Release ▲	V-22 Integration Contract ▲																
Milestones																													
Systems Development						H-1 TAWS II Requirements Dev																							
	V-22 TAWS II Requirements Dev					H-1 TAWS II Software Development FB1				H-1 TAWS II Software Development FB2																			
	H-60 TAWS II Software Development FB4																												
																</													

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy															Date: March 2023				
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0605217N / Common Avionics					Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB				

Avionics Component Improvement Program (AvCIP)	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Funding Allocation	▼				▼				▼				▼				▼				▼				▼			
Proposal Collection																												
Proposal Evaluation		▼				▼				▼				▼				▼				▼				▼		
Proposal Prioritization and Selection			▼				▼				▼				▼				▼				▼				▼	
Contract Establishment & Execution Plan																												
Systems Development																												
Test and Evaluation																												
Production Milestones																												
Deliveries																												

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PE 0605217N: *Common Avionics*  
Navy

**Volume 3 - 1603**

1319 / 5

PE 0605217N / Common Avionics

0572 / JT Service/NV Std Avionics CP/SB



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605217N / <i>Common Avionics</i>	<b>Project (Number/Name)</b> 0572 / <i>JT Service/NV Std Avionics CP/SB</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>COMMUNICATIONS, NAVIGATION, SURVEILLANCE/AIR TRAFFIC MGMT (CNS/ATM)</b>				
Systems Development: Evaluate CNS/ATM technologies and develop solutions to support platform integrations	1	2022	4	2025
<b>TACTICAL COMMUNICATIONS (TACCOM)</b>				
Systems Development: Crypto Modernization, Gen6 TRANSEC & TSV Suite B	1	2022	2	2022
Systems Development: Gen5A TSV 3.1.x, Crypto Modernization, SINCGARS, SATURN	2	2022	1	2026
Systems Development: Gen6 TSV 3.1.x, Crypto Modernization, SINCGARS, ACC, SATURN 4, MUOS 3.2	1	2022	1	2025
Systems Development: VMF/ Data Link Mil Standard Evolution	1	2024	4	2026
Systems Development: Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5, MUOS 4.x	1	2024	4	2027
Systems Development: Gen5 Crypto Mod, TSV 4, SINCGARS 3.2	3	2026	4	2028
Test and Evaluation: Gen6 JITC Cert 5	1	2022	1	2022
Test and Evaluation: Gen5 NSA Cert 5	4	2023	4	2023
Test and Evaluation: Gen5 JITC Cert 6	2	2024	2	2024
Test and Evaluation: Gen6 NSA Cert 6	4	2024	4	2024
Test and Evaluation: Gen6 JITC Cert 7	2	2025	2	2025
Test and Evaluation: Gen5 NSA Cert 7	1	2026	1	2026
Test and Evaluation: Gen5 JITC Cert 8	3	2026	3	2026
Test and Evaluation: Gen6 NSA Cert 8	3	2027	3	2027
Test and Evaluation: Gen6 JITC Cert 8	4	2027	4	2027
Test and Evaluation: Gen5 NSA Cert 9	2	2028	2	2028



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Test and Evaluation: Gen5 JITC Cert 9	4	2028	4	2028
Production Milestones: Gen5 TSV Ste B ECP Approval	1	2022	1	2022
Production Milestones: Gen5 TRANSEC ECP Approval	1	2024	1	2024
Production Milestones: Gen6 S/W ECP Approval	4	2027	4	2027
Deliveries: Gen6 Ver 004 Release	2	2022	2	2022
Deliveries: Gen5 Ver 008 Release	3	2024	3	2024
Deliveries: Gen6 Ver 005 Release	3	2025	3	2025
Deliveries: Gen5 Ver 009 Release	3	2026	3	2026
Deliveries: Gen6 Ver 006 Release	4	2027	4	2027
GROUND PROXIMITY WARNING SYSTEM/TERRAIN AWARENESS WARNING SYSTEM (GPWS/TAWS)				
Acquisition Milestones: Milestones: H-1 Integration Contract	1	2023	1	2023
Acquisition Milestones: Milestones: V-22 Integration Contract	3	2025	3	2025
Acquisition Milestones: Milestones: H-60 MS C	2	2024	2	2024
Acquisition Milestones: Milestones: H-60 Fleet Release	4	2024	4	2024
Systems Development: H-1 TAWS II Requirements Development	2	2022	1	2023
Systems Development: H-1 TAWS II Software Development FB1	4	2022	3	2023
Systems Development: H-1 TAWS II Software Development FB2	1	2024	3	2024
Systems Development: V-22 TAWS II Requirements Development	1	2022	1	2022
Systems Development: V-22 TAWS II Requirements Development Restart	2	2024	1	2025
Systems Development: V-22 TAWS II Software Development FB1	4	2024	1	2026
Systems Development: V-22 TAWS II Software Development FB2	4	2027	2	2028
Systems Development: H-60 TAWS II Software Development FB4	1	2022	4	2022
Test and Evaluation: Developmental Testing: Lockheed Martin SC 2.X Integration Testing FB3	1	2022	1	2022
Test and Evaluation: Developmental Testing: Lockheed Martin SC 2.X Integration Testing FB4	1	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB	
Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test and Evaluation: Developmental Testing: Northrop Grumman/Bell Helicopter Textron Integration Testing FB1	4	2023	1	2024
Test and Evaluation: Developmental Testing: Northrop Grumman/Bell Helicopter Textron Integration Testing FB2	3	2024	4	2024
Test and Evaluation: Developmental Testing: Raytheon/Boeing Integration Testing FB1	2	2026	1	2027
Test and Evaluation: Developmental Testing: Raytheon/Boeing Integration Testing FB2	3	2028	4	2028
Test and Evaluation: Developmental Testing: H-60 TAWS II DT 3	2	2022	3	2022
Test and Evaluation: Developmental Testing: H-60 TAWS II DT 4	2	2023	4	2023
Test and Evaluation: Developmental Testing: H-1 TAWS II DT 1	1	2024	2	2024
Test and Evaluation: Developmental Testing: H-1 TAWS II DT 2	4	2024	1	2025
Test and Evaluation: Developmental Testing: V-22 TAWS II DT 1	2	2027	4	2027
Test and Evaluation: Developmental Testing: V-22 TAWS II DT 2	4	2028	4	2028
Production Milestones: H-60 Integrated Logistics Assessment	4	2022	1	2023
Production Milestones: H-1 Integrated Logistics Assessment	2	2024	4	2024
Production Milestones: V-22 Integrated Logistics Assessment	4	2027	2	2028
Deliveries: H-60 TAWS II FB4 Delivery	1	2023	1	2023
Deliveries: H-1 TAWS II FB1 Delivery	4	2023	4	2023
Deliveries: H-1 TAWS II FB2 Delivery	4	2024	4	2024
Deliveries: V-22 TAWS II FB 1 Delivery	2	2026	2	2026
Deliveries: V-22 TAWS II FB 2 Delivery	2	2028	2	2028
AVIONICS COMPONENT IMPROVEMENT PROGRAM (AvCIP)				
Acquisition Milestones: Funding Allocation: Funding Allocation2	1	2025	1	2025
Acquisition Milestones: Funding Allocation: Funding Allocation3	1	2026	1	2026
Acquisition Milestones: Funding Allocation: Funding Allocation4	1	2027	1	2027
Acquisition Milestones: Funding Allocation: Funding Allocation5	1	2028	1	2028
Acquisition Milestones: Funding Allocation: Funding Allocation6	1	2022	1	2022
Acquisition Milestones: Funding Allocation: Funding Allocation7	1	2023	1	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Acquisition Milestones: Funding Allocation: Funding Allocation1		1	2024	1	2024
Acquisition Milestones: Proposal Collection: Proposal Collection1		1	2024	2	2024
Acquisition Milestones: Proposal Collection: Proposal Collection2		1	2025	2	2025
Acquisition Milestones: Proposal Collection: Proposal Collection3		1	2026	2	2026
Acquisition Milestones: Proposal Collection: Proposal Collection4		1	2027	2	2027
Acquisition Milestones: Proposal Collection: Proposal Collection5		1	2028	2	2028
Acquisition Milestones: Proposal Collection: Proposal Collection6		1	2022	2	2022
Acquisition Milestones: Proposal Collection: Proposal Collection7		1	2023	2	2023
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation2		2	2025	2	2025
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation3		2	2026	2	2026
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation4		2	2027	2	2027
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation5		2	2028	2	2028
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation6		2	2022	2	2022
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation7		2	2023	2	2023
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation8		2	2024	2	2024
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection2		3	2025	3	2025
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection3		3	2026	3	2026
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection4		3	2027	3	2027
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection5		3	2028	3	2028
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection6		3	2022	3	2022
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection7		3	2023	3	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection8	3	2024	3	2024
Acquisition Milestones: Contract Establishment & Execution Plan: Contract Establishment & Execution Plan2	3	2025	4	2025
Acquisition Milestones: Contract Establishment & Execution Plan: Contract Establishment & Execution Plan3	3	2026	4	2026
Acquisition Milestones: Contract Establishment & Execution Plan: Contract Establishment & Execution Plan4	3	2027	4	2027
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan5	3	2028	4	2028
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan6	3	2022	4	2022
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan7	3	2023	4	2023
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan8	3	2024	4	2024
DIGITAL INTEROPERABILITY (DI): MANGL				
Acquisition Milestones: Design Review #1	3	2023	3	2023
Acquisition Milestones: Design Review #2	2	2024	2	2024
Acquisition Milestones: CH-53K & KC-130J Rapid Prototype Approval	2	2024	2	2024
Acquisition Milestones: MV-22 Initial Rapid Fielding Approval	2	2025	2	2025
Acquisition Milestones: CH-53K & KC-130J Rapid Fielding Approval	1	2026	1	2026
Systems Development: Integration: MV-22	1	2022	1	2025
Systems Development: Integration: SRP Waveform Updates	1	2026	4	2027
Systems Development: Integration: CH-53K & KC-130J Integration	2	2024	4	2027
Systems Development: Logistics Analysis: MV-22	1	2022	1	2025
Systems Development: Logistics Analysis: CH-53K & KC-130J Logistics Analysis	2	2024	4	2027
Systems Development: Logistics Analysis: Test Articles CA Qty 3	3	2022	3	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605217N / Common Avionics		Project (Number/Name) 0572 / JT Service/NV Std Avionics CP/SB	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Systems Development: Logistics Analysis: Test Articles CA Qty 7		2	2024	2	2024
Systems Development: Logistics Analysis: Test Articles CA Qty 2		2	2025	2	2025
Test and Evaluation: MANGL Ground Node Prep/Test		1	2022	2	2024
Test and Evaluation: Qualification Testing		2	2024	4	2024
Test and Evaluation: Cyber Security Tabletop		2	2024	2	2024
Test and Evaluation: Flight Demonstration Test/Report		1	2025	2	2025
Test and Evaluation: CH-53K & KC-130J Flight Demo / Report		3	2025	4	2025
Deliveries: Test Articles Qty 4		4	2024	4	2024
Deliveries: Test Articles Qty 3		1	2025	1	2025
Deliveries: Test Articles Qty 7		2	2025	2	2025
Deliveries: Test Articles Qty 2		2	2026	2	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					PE 0605220N / Ship-to-Shore Connector (SSC)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	407.114	6.295	17.886	1.343	-	1.343	0.000	0.000	0.000	0.000	0.000	432.638
3133: Ship to Shore Connectors Contract Design	22.648	3.546	1.884	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.078
3137: SSC Construction	384.466	2.749	1.002	1.343	-	1.343	0.000	0.000	0.000	0.000	0.000	389.560
9999: Congressional Adds	0.000	0.000	15.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.000
Program MDAP/MAIS Code:												
Project MDAP/MAIS Code(s): 303												
A. Mission Description and Budget Item Justification												
The Ship to Shore Connector (SSC) program provides the capability to rapidly move assault forces within the littoral operational environment to accomplish Unified Command Plan (UCP) missions and ensures the Joint Force Commander's (JFCDR's) ability to conduct amphibious operations and operate over the high water mark, including movement over ice, mud, rivers, swamps and marshes. SSC provides the functional replacement for the Landing Craft, Air Cushion (LCAC) Class of ships, which began reaching extended service life in 2015.												
This PE directly funds and supports the detail design, development, construction, issue resolution, certification, integration and testing of the Ship to Shore Connector (SSC). The lead craft (Craft 100) will be maintained as a test and training platform throughout its life cycle.												
Note: This effort was previously funded under PE 0604567N under projects 3133 and 3137 (FY 2014 and prior).												
B. Program Change Summary (\$ in Millions)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total				
Previous President's Budget				6.320	2.886	1.321	-	1.321				
Current President's Budget				6.295	17.886	1.343	-	1.343				
Total Adjustments				-0.025	15.000	0.022	-	0.022				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-							
• Congressional Rescissions				-	-							
• Congressional Adds				-	15.000							
• Congressional Directed Transfers				-	-							
• Reprogrammings				-	-							
• SBIR/STTR Transfer				-0.025	0.000							
• Rate/Misc Adjustments				0.000	0.000	0.022	-	0.022				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023	
<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		<b>R-1 Program Element (Number/Name)</b> PE 0605220N / Ship-to-Shore Connector (SSC)	
<b><u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u></b>  <b>Project:</b> 9999: Congressional Adds Congressional Add: LCAC propeller production demonstration Congressional Add: Artificial intelligence for ready relevant learning  <div style="text-align: right;">Congressional Add Subtotals for Project: 9999</div> <div style="text-align: right;">Congressional Add Totals for all Projects</div>		<b>FY 2022</b>	<b>FY 2023</b>
		0.000	10.000
		0.000	5.000
		0.000	15.000
		0.000	15.000
		0.000	15.000



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (S SC)				Project (Number/Name) 3133 / Ship to Shore Connectors Contract Design			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3133: Ship to Shore Connectors Contract Design	22.648	3.546	1.884	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.078
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 303												
A. Mission Description and Budget Item Justification												
Ship to Shore Connector (SSC) - This project provides the Preliminary and Contract design and Class test efforts for the SSC Program. The SSC program provides the capability to rapidly move assault forces within the littoral operational environment to accomplish Unified Command Plan (UCP) missions and ensures the Joint Force Commander's (JFCDR's) ability to conduct amphibious operations and operate over the high water mark, including movement over ice, mud, rivers, swamps and marshes. SSC provides the functional replacement for the Landing Craft, Air Cushion (LCAC) Class of ships, which began reaching extended service life in 2015. For FY 2015 and beyond, this project will provide for Class Test and Evaluation of components and systems, as well as all programmatic effort and support activities necessary for the development and execution of Class Test and Evaluation (T&E) plans and programs.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Ship to Shore Connectors Contract Design  Articles:  FY 2023 Plans: FY 2023 funding will support execution and completion of Initial Operational Test & Evaluation (IOT&E) upon completion of PDT&T. This consists of 19 Amphibious Operations to demonstrate operational effectiveness and suitability to support Initial Operational Capability (IOC) as well as Full Rate Production (FRP) Decision. IOT&E reporting and data analysis will be conducted upon completion of tests. FY 2023 funds will also be used to complete Follow-On Operational Test & Evaluation (FOT&E). FOT&E will be completed during Fleet Exercises and Training to evaluate cold weather operations and execution of deferred OT&E.  FY 2024 Base Plans: N/A  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement:								3.546	1.884	0.000	0.000	0.000
								-	-	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy								<b>Date:</b> March 2023			
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0605220N / <i>Ship-to-Shore Connector (S</i> <i>SC)</i>				<b>Project (Number/Name)</b> 3133 / <i>Ship to Shore Connectors Contract</i> <i>Design</i>			

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Funds are no longer required due to completion of PDT&T, IOT&E, and FOT&E.									
<b>Accomplishments/Planned Programs Subtotals</b>					3.546	1.884	0.000	0.000	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RD TEN 3137: <i>SSC Construction</i>	2.749	1.002	1.343	-	1.343	0.000	0.000	0.000	0.000	0.000	389.560
• SCN 5112: <i>Ship</i> <i>to Shore Connector</i>	391.838	454.533	0.000	-	0.000	201.887	205.112	206.945	211.857	2,783.941	6,088.217

**Remarks**

**D. Acquisition Strategy**

The Test and Training craft (Craft 100) and LCACs 101-106 have delivered. Craft 100 was procured and constructed with RD TEN. LCAC 101 was awarded with RD TEN and transferred to SCN for completion. The Detail Design and Construction contract includes options for construction of an additional seven SCN craft, all of which have been awarded (LCAC 102-108). The FY17-20 follow-on contract awarded construction of an additional fifteen SCN craft (LCAC 109-123). The Contract for the construction of FY22/23 craft is currently being negotiated.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (S SC)						Project (Number/Name) 3133 / Ship to Shore Connectors Contract Design					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	Various	NSWC PCD : Various	8.980	1.434	Dec 2021	1.000	Oct 2022	0.000		-		0.000	0.000	11.414	-		
Developmental Test & Evaluation (DT&E)	Various	SUPSHIP/ TEXTRON : Various	1.884	0.000		0.000		0.000		-		0.000	0.000	1.884	-		
Operational Test & Evaluation (OT&E)	Various	Various : JEB Little Creek	6.938	0.424	Jul 2022	0.773	Dec 2023	0.000		-		0.000	0.000	8.135	-		
Live Fire Test & Evaluation (LFT&E)	Various	NSWC CD : Various	4.846	1.688	Dec 2021	0.111	Mar 2023	0.000		-		0.000	0.000	6.645	-		
Subtotal			22.648	3.546		1.884		0.000		-		0.000	0.000	28.078	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			22.648	3.546		1.884		0.000		-		0.000	0.000	28.078	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

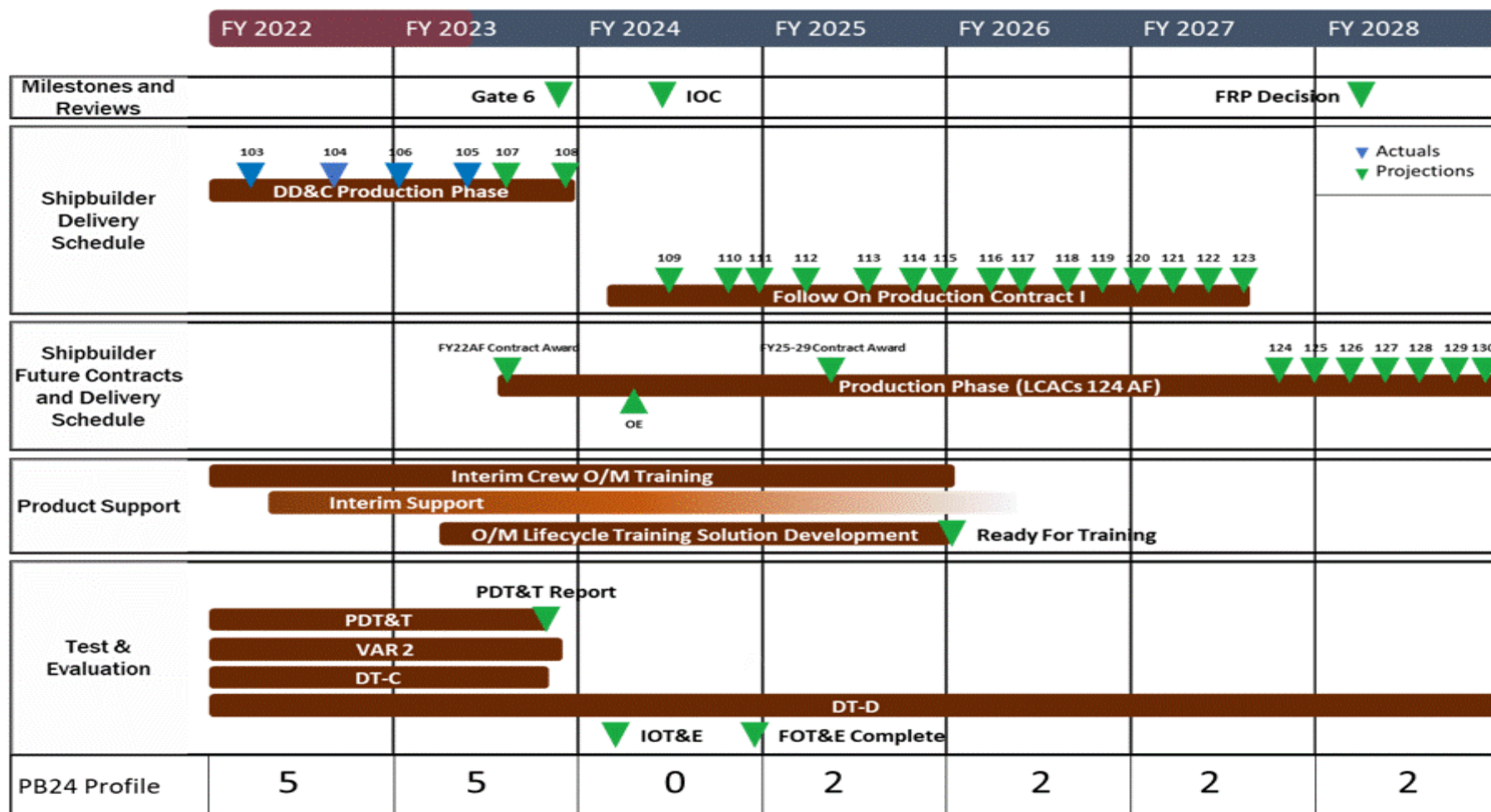
1319 / 5

R-1 Program Element (Number/Name)

PE 0605220N / Ship-to-Shore Connector (S  
SC)

Project (Number/Name)

3133 / Ship to Shore Connectors Contract  
Design



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (SC)	Project (Number/Name) 3133 / Ship to Shore Connectors Contract Design

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3133				
Post Delivery Test & Trials (PDT&T)	1	2022	3	2023
Initial Operational Test and Evaluation (IOT&E)	1	2024	1	2024
Follow-on Operational Test and Evaluation (FOT&E)	4	2024	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (S SC)				Project (Number/Name) 3137 / SSC Construction			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3137: SSC Construction	384.466	2.749	1.002	1.343	-	1.343	0.000	0.000	0.000	0.000	0.000	389.560
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 303												
A. Mission Description and Budget Item Justification												
This project funds the Ship to Shore Connector (SSC) Engineering & Manufacturing Development phase which includes Detail Design and Construction, Product Support, Government Furnished Equipment (GFE), Program support, and Outfitting and Post Delivery. The lead craft will be maintained as a test and training platform throughout its life cycle. The SSC program provides the capability to rapidly move assault forces within the littoral operational environment to accomplish Unified Command Plan (UCP) missions and ensures the Joint Force Commander's (JFCDR's) ability to conduct amphibious operations and operate over the high water mark, including movement over ice, mud, rivers, swamps and marshes. SSC provides the functional replacement for the Landing Craft, Air Cushion (LCAC) Class of ships, which began reaching extended service life in 2015. Funding for this effort was previously executed under PE 0604567N.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Title: SSC Construction							2.749	1.002	1.343	0.000	1.343	
Articles:							-	-	-	-	-	
FY 2023 Plans:												
Funding provides Craft 100 (Test and Training (T&T) Craft) maintenance support, civilian crew, and craft enhancements. This craft is used to test proposed craft changes, Research and Development efforts for LCAC class, and the identification and resolution of maintenance issues.												
FY 2024 Base Plans:												
Funding provides Craft 100 (Test and Training (T&T) Craft) maintenance support, civilian crew, and craft enhancements. This craft is used to test proposed craft changes, Research and Development efforts for LCAC class, and the identification and resolution of maintenance issues.												
FY 2024 OCO Plans:												
N/A												
FY 2023 to FY 2024 Increase/Decrease Statement:												
Increase reflects additional test requirements and maintenance in FY2024												
Accomplishments/Planned Programs Subtotals							2.749	1.002	1.343	0.000	1.343	

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (S SC)				Project (Number/Name) 3137 / SSC Construction				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• RD TEN 3133: Ship to Shore Connectors Contract Design	3.546	1.884	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.078	
• SCN 5112: Ship to Shore Connector	391.838	454.533	0.000	-	0.000	201.887	205.114	206.945	211.857	2,783.941	6,088.219	
Remarks												
D. Acquisition Strategy												
The Test and Training (T&T) craft (Craft 100) and LCACs 101-106 have delivered. Craft 100 was procured and constructed with RD TEN. LCAC 101 was awarded with RD TEN and transferred to SCN for completion. The Detail Design and Construction contract includes options for construction of an additional seven SCN craft, all of which have been awarded (LCAC 102-108). The FY 2017 to FY 2020 Follow-on contract awarded construction of an additional fifteen SCN craft (LCAC 109-123). The Contract for the construction of FY22/23 craft is currently being negotiated. Life cycle sustainment for Craft 100 will be funded from this line to provide test and training craft maintenance.												

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605220N / <i>Ship-to-Shore Connector (S SC)</i>					Project (Number/Name) 3137 / <i>SSC Construction</i>				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Trng Craft Ship Design	C/CPFF	Various : Various	3.804	0.000		0.000		0.000		-		0.000	0.000	3.804	-
Test & Trng Craft Detail Design/Construction	C/FPIF	Textron : New Orleans, LA	35.762	0.000		0.000		0.000		-		0.000	0.000	35.762	-
Test & Trng Craft Government Furnished Equipment (GFE)	Various	Various : Various	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	-
Test & Trng Craft Change Orders	C/FPIF	Textron : New Orleans, LA	7.822	0.000		0.000		0.000		-		0.000	0.000	7.822	-
Prior Year - PE 0604567N	Various	Not Specified : Not Specified	272.356	0.000		0.000		0.000		-		0.000	0.000	272.356	-
Test & Trng Craft Detail Design/Construction	C/FPIF	NSWC-PCD : Panama City, FL	2.746	0.000		0.000		0.000		-		0.000	0.000	2.746	-
Subtotal			322.750	0.000		0.000		0.000		-		0.000	0.000	322.750	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Trng Craft Studies and Analysis	Various	Various : Various	1.837	0.000		0.000		0.000		-		0.000	0.000	1.837	-
Test & Trng Craft Integrated Logistics Support	WR	NSWC-PCD : Various	3.908	0.000		0.000		0.000		-		0.000	0.000	3.908	-
T&T Post Delivery/ Outfitting	Various	SupShip Gulf Coast/ Textron/NSWC-PCD : Various	4.000	0.000		0.000		0.000		-		0.000	0.000	4.000	-
Prior Year - PE 0604567N	Various	Not Specified : Not Specified	7.571	0.000		0.000		0.000		-		0.000	0.000	7.571	-
Test & Trng Craft Post Shakedown Availability	C/BA	NSWC-PCD : Panama City, FL	3.245	0.500	Nov 2021	0.000		0.000		-		0.000	0.000	3.745	-



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Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605220N / Ship-to-Shore Connector (S  
SC)

## Project (Number/Name)

3137 / SSC Construction

## Support (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test & Trng Craft Sustainment and Operation	C/BA	NSWC-PCD : Various	1.500	2.249	Nov 2021	1.002	Jan 2023	1.343	Nov 2023	-		1.343	0.000	6.094	-
Subtotal			22.061	2.749		1.002		1.343		-		1.343	0.000	27.155	N/A

## Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation (DT&E)	Various	Various : Various	9.000	0.000		0.000		0.000		-		0.000	0.000	9.000	-
Subtotal			9.000	0.000		0.000		0.000		-		0.000	0.000	9.000	N/A

## Management Services (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test & Trng Craft Contractor Engineering Support	C/CPFF	CSC/Alion : Washington, DC	2.891	0.000		0.000		0.000		-		0.000	0.000	2.891	-
Travel	Various	Various : Various	0.314	0.000		0.000		0.000		-		0.000	0.000	0.314	-
Test & Trng Craft Government Engineering Support	WR	Various : Various	2.662	0.000		0.000		0.000		-		0.000	0.000	2.662	-
Prior Year - PE 0604567N	Various	Not Specified : Not Specified	24.788	0.000		0.000		0.000		-		0.000	0.000	24.788	-
Subtotal			30.655	0.000		0.000		0.000		-		0.000	0.000	30.655	N/A

Project Cost Totals	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
	384.466	2.749		1.002		1.343		-		1.343	0.000	389.560	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy							Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (S SC)			Project (Number/Name) 3137 / SSC Construction			
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

# UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

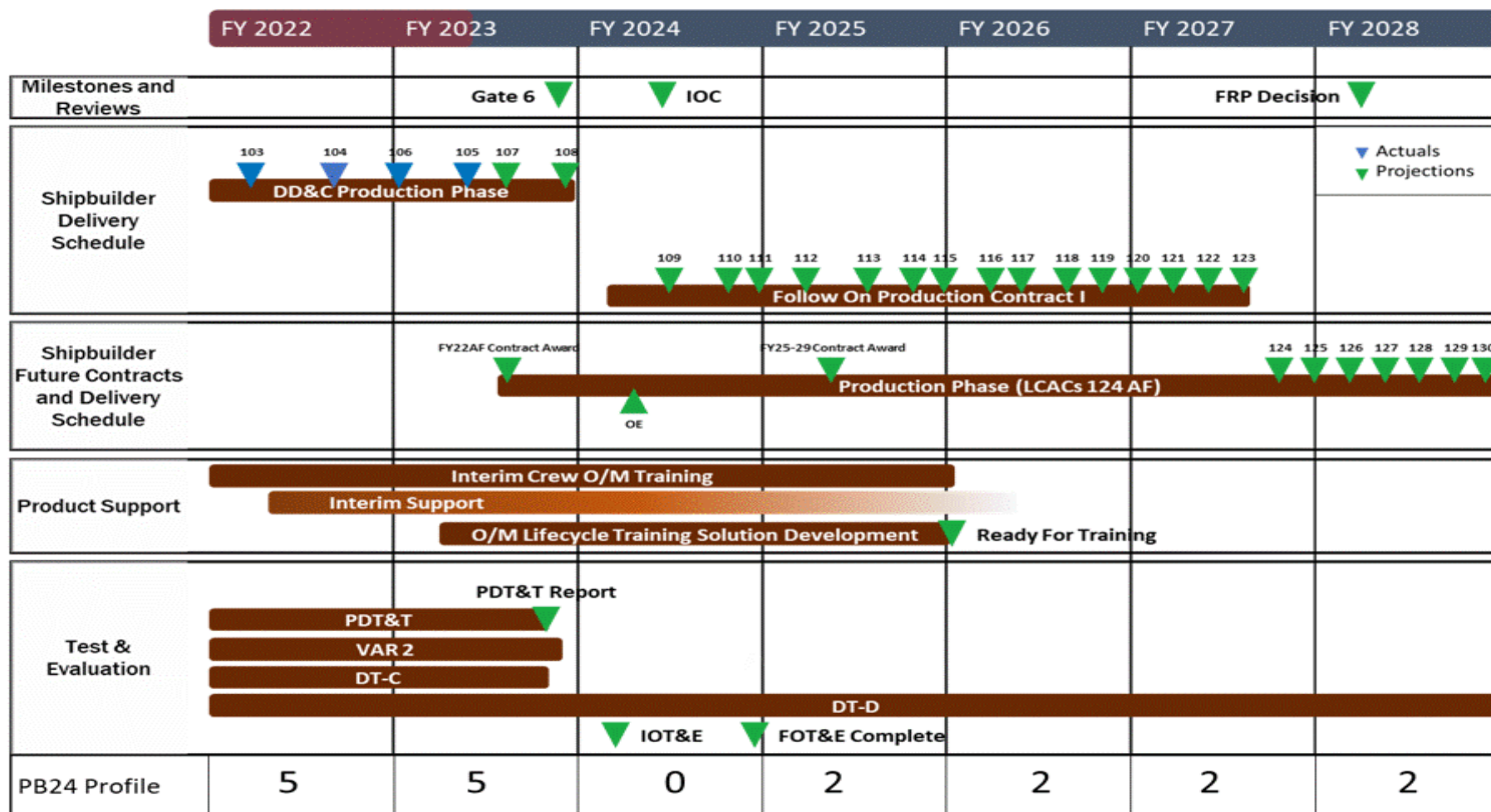
1319 / 5

R-1 Program Element (Number/Name)

PE 0605220N / Ship-to-Shore Connector (SSC)

Project (Number/Name)

3137 / SSC Construction



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (SSC)	Project (Number/Name) 3137 / SSC Construction	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3137				
Post Delivery Test and Trials (PDT&T)	1	2022	3	2023
Test and Training Craft Sustainment and Operations	1	2022	4	2024

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy										<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0605220N / <i>Ship-to-Shore Connector (S</i> SC)				<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
9999: <i>Congressional Adds</i>	0.000	0.000	15.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project provides funding for Ship to Shore Connector class propeller production demonstration including various improvement efforts to establish CONUS propeller production stability and develop erosion protection. This project also provides funding to improve training and fleet readiness through a modernized adaptive learning platform using artificial intelligence and customized curriculum.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b><i>Congressional Add:</i></b> LCAC propeller production demonstration	0.000	10.000
<b><i>FY 2022 Accomplishments:</i></b> N/A		
<b><i>FY 2023 Plans:</i></b> Developmental efforts related to technical solutions for SSC propellers and composites including establishment of CONUS supplier and developing enhanced erosion protections.		
<b><i>Congressional Add:</i></b> Artificial intelligence for ready relevant learning	0.000	5.000
<b><i>FY 2022 Accomplishments:</i></b> N/A		
<b><i>FY 2023 Plans:</i></b> Develop improved customized training through modernized adaptive learning platform using artificial intelligence.		
<b>Congressional Adds Subtotals</b>	0.000	15.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (S SC)						Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Adaptive Learning Development	Various	Various : Various	0.000	0.000		4.525	May 2023	0.000		-		0.000	0.000	4.525	-		
Propeller Blade Production Line Development	C/BA	NSWC CD : MD	0.000	0.000		5.109	Sep 2023	0.000		-		0.000	0.000	5.109	-		
Repair Manual Development	C/BA	Various : Various	0.000	0.000		0.300	Sep 2023	0.000		-		0.000	0.000	0.300	-		
Propeller Blade Improvement	C/BA	Various : Various	0.000	0.000		2.621	Sep 2023	0.000		-		0.000	0.000	2.621	-		
Prop Blade Erosion Treatment	C/BA	NSWC PC : FL	0.000	0.000		1.070	Sep 2023	0.000		-		0.000	0.000	1.070	-		
Subtotal			0.000	0.000		13.625		0.000		-		0.000	0.000	13.625	N/A		
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Program Support	C/BA	Various : Various	0.000	0.000		1.375	Mar 2023	0.000		-		0.000	0.000	1.375	-		
Subtotal			0.000	0.000		1.375		0.000		-		0.000	0.000	1.375	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.000	0.000		15.000		0.000		-		0.000	0.000	15.000	N/A		
Remarks																	

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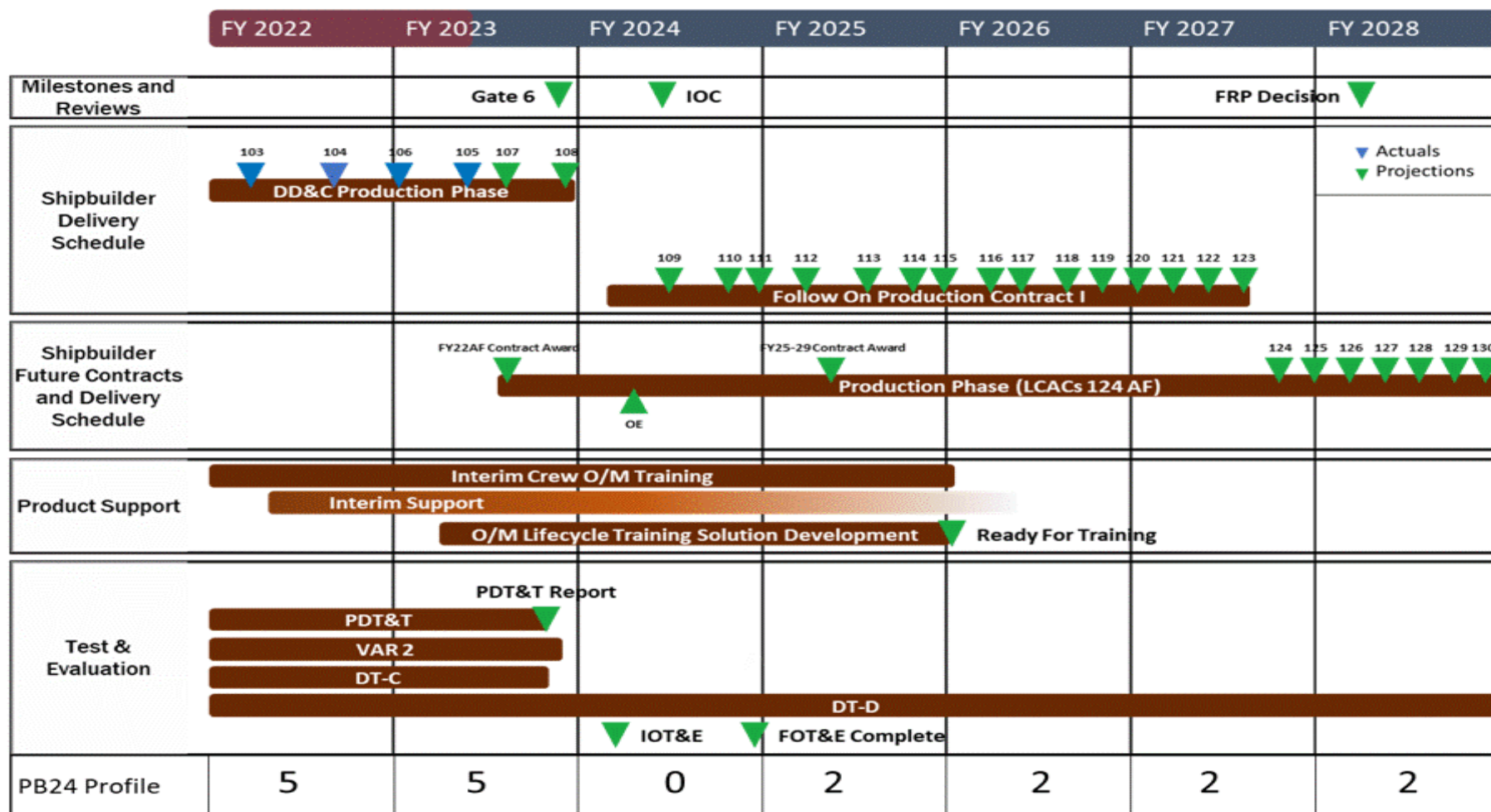
PE 0605220N: *Ship-to-Shore Connector (SSC)*  
Navy

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PE 0605220N / Ship-to-Shore Connector (S  
SC)

9999 / Congressional Adds



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605220N / Ship-to-Shore Connector (SSC)	Project (Number/Name) 9999 / Congressional Adds

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Adaptive Learning Framework Development	3	2023	4	2024
Propeller Blade Efforts	4	2023	4	2024



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605327N / T-AO 205 Class							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	7.871	4.287	0.220	0.071	-	0.071	0.000	0.000	0.000	0.000	0.000	12.449
3375: T-AO 205 Class Development	7.871	4.287	0.220	0.071	-	0.071	0.000	0.000	0.000	0.000	0.000	12.449
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P452												
A. Mission Description and Budget Item Justification Test and Evaluation (T&E) requirements to support the T-AO 205 John Lewis Fleet Oiler Class recapitalization of the existing T-AO 187 Fleet Oiler Class. The Navy's Combat Logistics Force (CLF) oilers supply fuel and dry cargo to Navy ships at sea. The T-AO 205 Class will operate as shuttle ships from resupply ports to customer ships. Additionally, in conjunction with a T-AKE, they will accompany and stay on-station with a Carrier Strike Group (CSG) to provide fuel as required to customer ships.												
B. Program Change Summary (\$ in Millions)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total				
Previous President's Budget				4.336	0.220	0.071	-	0.071				
Current President's Budget				4.287	0.220	0.071	-	0.071				
Total Adjustments				-0.049	0.000	0.000	-	0.000				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-							
• Congressional Rescissions				-	-							
• Congressional Adds				-	-							
• Congressional Directed Transfers				-	-							
• Reprogrammings				-	-							
• SBIR/STTR Transfer				-0.049	0.000							
• Rate/Misc Adjustments				0.000	0.000	0.000	-	0.000				
Change Summary Explanation T-AO 205 delivered in July 2022, this was a 2 month schedule delay with first of class complexities (power train, system controls), continued COVID driven labor shortages, and required to complete overall ship production. Thus there was a one for one delay for the following testing events: Completion of DT-C, Operational Test Readiness Review (OTRR), Initial Operational Test and Evaluation (IOT&E) and Report, Total Ship Survivability Trial (TSST) and completion of Final Survivability Assessment Report (FSAR).												

## UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605327N / T-AO 205 Class				Project (Number/Name) 3375 / T-AO 205 Class Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3375: T-AO 205 Class Development	7.871	4.287	0.220	0.071	-	0.071	0.000	0.000	0.000	0.000	0.000	12.449
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: P452												
A. Mission Description and Budget Item Justification												
Test and Evaluation (T&E) requirements to support the T-AO 205 John Lewis Fleet Oiler Class recapitalization of the existing T-AO 187 Fleet Oiler Class. The Navy's Combat Logistics Force (CLF) oilers supply fuel and dry cargo to Navy ships at sea. The T-AO 205 Class will operate as shuttle ships from resupply ports to customer ships. Additionally, in conjunction with a T-AKE, they will accompany and stay on-station with a Carrier Strike Group (CSG) to provide fuel as required to customer ships.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: T-AO 205 Class Test and Evaluation  Articles:  FY 2023 Plans: Complete the execution of the Test and Evaluation (T&E) Phases Developmental Testing (DT), Operational Testing (OT), and Live Fire Test and Evaluation (LFT&E) per the Test and Evaluation Master Plan (TEMP) schedule. Complete DT-C, Integrated Testing (IT), Initial Operational Test and Evaluation (IOT&E), and Final Survivability Assessment Report (FSAR). Coordinate efforts with the Shipbuilder, NAVSEA, MSC, PEO SHIPS, COMOPTEVFOR, JITC and OSD DOT&E.  FY 2024 Base Plans: Complete the execution of the Test and Evaluation (T&E). Coordinate efforts with the Shipbuilder, NAVSEA, MSC, PEO SHIPS, COMOPTEVFOR, JITC and OSD DOT&E.  FY 2024 OCO Plans: N/A  FY 2023 to FY 2024 Increase/Decrease Statement: The decrease of \$0.149M is due to the completion of Lead Hull Test and Evaluation (T&E) Phase.								4.287	0.220	0.071	0.000	0.071
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								4.287	0.220	0.071	0.000	0.071

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605327N / T-AO 205 Class				Project (Number/Name) 3375 / T-AO 205 Class Development			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• SCN/5025: T-AO 205 Class Fleet Oiler	1,463.784	782.588	815.420	-	815.420	0.000	1,632.295	861.022	1,751.894	4,661.698	15,322.173
• SCN/5300: Completion of PY Shpbldg Progr	66.700	128.100	122.895	-	122.895	37.040	7.750	0.000	0.000	0.000	441.534
Remarks											
D. Acquisition Strategy											
The first Fleet Oiler was awarded in FY16. Fleet oilers will comply with the Oil Pollution Act of 1990 (OPA-90) and International Marine Pollution Regulation (MARPOL) requirements.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605327N / T-AO 205 Class				Project (Number/Name) 3375 / T-AO 205 Class Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	2.990	1.094	Jan 2022	0.078	Apr 2023	0.000		-		0.000	0.000	4.162	-
Operational Test & Evaluation (OT&E)	Various	Various : Various	2.102	2.063	Jan 2022	0.000		0.071	Nov 2023	-		0.071	0.000	4.236	-
Live Fire Test & Evaluation (LFT&E)	Various	Various : Various	2.779	1.130	Jan 2022	0.142	Jun 2023	0.000		-		0.000	0.071	4.122	-
Subtotal			7.871	4.287		0.220		0.071		-		0.071	0.071	12.520	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			7.871	4.287		0.220		0.071		-		0.071	0.071	12.520	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0605327N / T-AO 205 Class

Project (Number/Name)  
3375 / T-AO 205 Class Development

Proj 3375	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Developmental Testing (DT)	DT-B																											
					DT-C																							
Operational Testing (OT)					OTRR	IOT&E			IOT&E Report																			
Live Fire Test & Evaluation (LFT&E)	DSBEA								TSST	FSAR																		

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605327N / T-AO 205 Class	Project (Number/Name) 3375 / T-AO 205 Class Development	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3375</b>				
Developmental Testing (DT): DT Phase B - Production Acceptance Test & Evaluation (PAT&E)	1	2022	4	2022
Developmental Testing (DT): DT Phase C - Post Delivery Test and Trials (PDT&T)	4	2022	4	2023
Operational Testing (OT): Operational Test Readiness Review (OTRR)	1	2023	1	2023
Operational Testing (OT): OT Phase C (IOT&E)	2	2023	3	2023
Operational Testing (OT): Initial Operational Test and Evaluation (IOT&E) Report	1	2024	2	2024
Live Fire Test & Evaluation (LFT&E): Detailed Design Survivability Assessment (DSBEA)	1	2022	2	2023
Live Fire Test & Evaluation (LFT&E): Total Ship Survivability Trial (TSST)	4	2023	4	2023
Live Fire Test & Evaluation (LFT&E): Final Survivability Assessment Report (FSAR)	1	2024	2	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	1,654.542	257.887	254.446	220.404	-	220.404	158.304	153.686	154.848	157.975	Continuing	Continuing
3278: MQ-25 Air System (AS)	1,489.675	212.150	227.443	201.945	-	201.945	141.960	135.117	137.194	139.962	Continuing	Continuing
3279: Unmanned Carrier Aviation Mission Control System	164.867	45.737	27.003	18.459	-	18.459	16.344	18.569	17.654	18.013	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P462												
<p><b>Note</b></p> <p>PE 0605414N Unmanned Carrier Aviation (UCA) is comprised of two separated programs: PU 3278 MQ-25 Development is directly related to the MQ-25 Air System (AS) development ACAT I Program. PU 3279 UMCS is directly related to the Unmanned Carrier Aviation (UCA) Mission Control System (UMCS) ACAT II program. Unmanned Carrier Aviation (UCA) Mission Control System develops the control station and integrates it with the MQ-25 Air System along with multiple networks and systems both afloat and on shore.</p> <p>MQ-25 PU 3278 execution is dependent upon the success of Unmanned Carrier Aviation Mission Control System PU 3279 execution. This submission for PU 3278 has been coordinated with Unmanned Carrier Aviation Mission Control System PU 3279.</p> <p>The prime contractor for MQ-25 development declared a loss on the MQ-25 contract in Oct 2018 and thereby invoked Federal Acquisition Regulation clause 32.503-6(g). Per the loss contract clause, a loss ratio factor must be applied to all progress payments to protect the government by ensuring the amount of unliquidated progress payments does not exceed the fair value of undelivered work. The reduced progress payments will prevent the program from meeting expenditure benchmarks in the near years.</p> <p>Prior to FY21, PMA-268 had been developing a government-furnished Ground Control Station (GCS) known as MD-5 as part of its UMCS program, the system-of-systems required for command and control of the MQ-25A air vehicle and payload. In September 2020, Navy leadership directed the MQ-25 program to transition to an already mature, industry-developed GCS solution that supports Joint All Domain Command and Control (JADC2) interoperability and multi-level security requirements. The modified hardware will streamline software development, readily support multiple classification levels, and position the MQ-25 for interoperability with other DoD systems. With the decision to switch to an industry developed GCS, work associated with integrating the new GCS into the MQ-25 air-vehicle and payload was put on contract with Boeing (integration) in December 2020 and Lockheed Martin (via NSMA) in April 2021.</p> <p>MQ-25 build and delivery of test aircraft are driving critical path to Initial Operational Capability (IOC). Due to aircraft build quality escapes, build schedule margin was significantly reduced and required the program to mitigate the delayed delivery of test aircraft by accepting limitations on the two permanent test assets and one fleet asset.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		<b>R-1 Program Element (Number/Name)</b> PE 0605414N / Unmanned Carrier Aviation (UCA)
<b>A. Mission Description and Budget Item Justification</b> <p>The MQ-25 program, PU 3278, rapidly develops an unmanned capability to embark on Carrier Vessel, Nuclear (CVN) as part of the Carrier Air Wing (CVW) to conduct aerial refueling as a primary mission and provide Intelligence, Surveillance, and Reconnaissance (ISR) capability for a secondary mission. MQ-25 extends Carrier Air Wing mission effectiveness range, partially mitigates the current Carrier Strike Group (CSG) organic ISR shortfall and fills the future Carrier Air Wing-tanker gap, mitigating Strike Fighter shortfall and preserving F/A-18E/F Fatigue Life Expenditure for its primary missions. As the first carrier-based, Group 5 Unmanned Aircraft System (UAS), MQ-25 will pioneer the integration of manned and unmanned operations, utilize mature, complex sea-based Command, Control, Communications, Computers, and Intelligence (C4I) technologies, and pave the way for future multi-faceted, multi-mission Unmanned Aircraft Systems to pace emerging threats.</p> <p>The MQ-25 system will enhance CVN capability and versatility for the Joint Forces Commander through the integration of a persistent, sea-based, multi-mission aerial refueling and ISR Unmanned Aircraft System into the Carrier Air Wing. MQ-25 is comprised of an Air System which will integrate with the UMCS program. These architectural segments will be managed by the PMA-268 Government Lead Systems Integrator (LSI) that provides system-of-systems integration and is also responsible for managing enterprise-level Unmanned Carrier Aviation architecture and associated interfaces. MQ-25 Development includes development and test of the air vehicle to include software, peculiar support equipment, training systems and other logistics elements.</p> <p>In FY 2024, The program will continue Ground Control Station integration and begin ground and flight test with the air vehicles. All four Engineering Development Models (EDMs) and one of the three System Demonstration Test Articles (SDTAs) will deliver to the test program to support ground and flight testing. The second and third System Demonstration Test Articles and fatigue test article will complete build and be delivered in FY25 for testing. The program will continue to develop and integrate increased software capabilities into the aircraft in support of carrier suitability and mission systems evaluation</p> <p>The Unmanned Carrier Aviation Mission Control System program, PU 3279, is the system-of-systems required for MQ-25 vehicle and payload control both shipboard and shore based. Unmanned Carrier Aviation Mission Control System consists of all ground and ship based hardware, software, and networks associated with the planning and execution of flight operations and tactical missions. In addition to the Ground Control Station, consisting of Air Vehicle Pilot (AVP) workstations and servers, the UMCS program builds hardware to support line of sight (LOS) communications, beyond line of sight (BLOS) satellite communications (SATCOM), and integration with ship/shore based systems. There are three Ground Control Station variants: MD-5C (CVN-based), MD-5D (Shore-based) and MD-5E (Embarkable system for use on CVNs that do not yet have permanent Ground Control Station systems installed). Unmanned Carrier Aviation Mission Control System leverages existing Programs of Record (PoR) for network integration and line of sight/beyond line of sight communications and builds MQ-25 unique systems (e.g. an ARC-210 based line of sight communication system and a Video Management System (VidMS) for Air Vehicle Pilot situational awareness). The Ground Control Station streamlines software development, supports multiple classification levels, and positions MQ-25A interoperability with other DoD systems. Hardware development and fabrication is one facet of the program. Unmanned Carrier Aviation Mission Control System develops and integrates software and modifies several aircraft carrier spaces to install and integrate the Ground Control Station and communication systems, in support of MQ-25A test events and operations aboard select NIMITZ Class CVNs. The Unmanned Carrier Aviation Mission Control System program modifies and integrates with existing, external Command, Control, Communication, Computers, and Intelligence systems to provide network paths for air vehicle and mission payload data using a variety of wideband and narrowband communication paths. Unmanned Carrier Aviation Mission Control System accomplishes this by integrating the Ground Control Station and the MQ-25A air vehicle with multiple networks and systems both at sea and on shore.</p>		



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)				
In FY 2024, Unmanned Carrier Aviation Mission Control System will finalize the interface design and install the MD-5E Embarkable system. The Embarkable system consists of a subset of the final Ground Control Station configuration hardware and test unique instrumentation installed and integrated with existing ship communication and network systems. Unmanned Carrier Aviation Mission Control System will also continue Ground Control Station software development and Correction of Deficiency (CoD) builds to support MQ-25 at-sea testing events in FY25. Unmanned Carrier Aviation Mission Control System will continue developing Technical Data Packages for system level components and continue providing system engineering, program management, and development support for the program.						
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to a full-rate production decision.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		261.992	265.646	207.039	-	207.039
Current President's Budget		257.887	254.446	220.404	-	220.404
Total Adjustments		-4.105	-11.200	13.365	-	13.365
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-11.200			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		0.000	0.000			
• SBIR/STTR Transfer		-4.105	0.000			
• Program Adjustments		0.000	0.000	14.600	-	14.600
• Rate/Misc Adjustments		0.000	0.000	-1.235	-	-1.235
Change Summary Explanation						
PU 3278 FY2024 funding request was increased by \$14.600 (less \$1.235 in rate/misc adjustments) to fund MQ-25 Satellite for Test to support Initial Operational Capability.						
Schedule:						
PU 3278: R-4 Schedule Acquisition Milestone Knowledge points, Test Milestones and Air Vehicle (AV) Deliveries have shifted due to delays in the build of EDM and SDTAs and the Static Test Article due to supplier related quality escapes and learning associated with full size determinant assembly (FSDA) manufacturing processes. Production path forward determined and implemented for known quality escapes. End result has aircraft deliveries planned for FY23 now occurring in FY24 and FY25.						
PU 3279: R-4 Schedule updated to reflect current CVN install schedule along with latest UCA and CVN Test Windows.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)				Project (Number/Name) 3278 / MQ-25 Air System (AS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3278: MQ-25 Air System (AS)	1,489.675	212.150	227.443	201.945	-	201.945	141.960	135.117	137.194	139.962	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: P462												
A. Mission Description and Budget Item Justification												
The scope of the program includes, but is not limited to, system level requirements identification, allocation of requirements to segments and components, design, development, integration, fabrication, test, training, and support activities to provide the MQ-25 capabilities. To provide these capabilities, MQ-25 will transition technologies from other programs and adapt them into the carrier environment. MQ-25 will deliver the necessary air vehicles, command, control, connectivity, shipboard and land-based launch and recovery control systems, associated support systems, interfaces, and upgrades to other Navy systems (as required) to meet the required capabilities.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Air Segment Product Development								105.452	100.418	80.868	0.000	80.868
Articles:								-	-	-	-	-
Description: Air Segment Product Development efforts include, but are not limited to, design, development, integration, fabrication, test and training to deliver a carrier-suitable, semi-autonomous, unmanned vehicle capable of aerial refueling (give) and persistent Intelligence, Surveillance, and Reconnaissance (ISR) operations.												
FY 2023 Plans:												
Continue Air Vehicle development, design, and integration. Continue the build of EDM and SDTA air vehicles. Continue development of technical publication source data. Additionally, the program will continue to develop and perform software lab testing. Continue software correction of deficiency efforts. Continue development of software and hardware to support post IOC additive capabilities to account for current threats identified post EMD contract award. Continue efforts to support post IOC such as advanced training tactics and techniques; obsolescence, sustainment and other studies related to operational employment learned since EMD contract award. Continue software integration efforts related to GCS.												
FY 2024 Base Plans:												
Continue Air Vehicle development, design, and integration. All four Engineering Development Models and one of the three System Demonstration Test Articles will deliver to the test program to support ground and flight testing. Continue development of logistics products source data. Continue development of Ground Control Station integration software. Continue development of software and hardware to support IOC and post IOC additive												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)	Project (Number/Name) 3278 / MQ-25 Air System (AS)			
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
capabilities to account for current threats identified post Engineering Development Models contract award. Continue efforts to support IOC and beyond such as advanced training tactics and techniques; obsolescence, sustainment and other studies related to operational employment learned since EMD contract award. Continue software integration efforts related to the Ground Control Station.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to the completion of ground/software lab testing. Personnel begin to transition from development to production efforts.						
<b>Title:</b> Lead Systems Integration (LSI) Product Development  <b>Articles:</b>  <b>Description:</b> Lead Systems Integration (LSI) is a Government-led effort including, but not limited to, advanced development, architecture development, interface definition, integration, system level test and evaluation, science and technology investments, roadmap refinement, and coordination of all MQ-25 capabilities across system segments and stakeholders.  <b>FY 2023 Plans:</b> Continue integration of GCS and software. Continue Air Segment and UMCS development, design, and integration with the GCS. Continue government led efforts that support science and technology investments and roadmap refinement. Complete Cyber Security efforts to achieve Authority to Operate (ATO) certifications for the System Test and Integration Lab (STIL), the Lab Revitalization Program (LRP), and test facilities. Continue operation of the STIL in support of government led hardware and software development and test activities. Continue STIL activities in support of correction of deficiencies. Continue government and contractor STIL integration activities in support of software verification and validation. Maintain connection between STIL and AS contractor labs. Continue to conduct and support ground and lab test activities at contractor facilities. Continue to conduct and support laboratory tests in support of EDM aircraft systems.  <b>FY 2024 Base Plans:</b> Continue integration of the GCS and software. Continue AS and UMCS development, design, and integration with the GCS. Continue government led efforts that support science and technology investments and roadmap refinement. Maintain Cyber Security efforts to achieve ATO certifications for the STIL, Lab Revitalization Program and test facilities. Continue operation of the STIL in support of government led hardware and software		62.772 -	68.382 -	60.617 -	0.000 -	60.617 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)		Project (Number/Name) 3278 / MQ-25 Air System (AS)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
development and test activities. Continue STIL activities in support of GCS software integration correction of deficiencies. Continue government and contractor STIL integration activities in support. <b>FY 2024 OCO Plans:</b> N/A <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 is due to completion of Cyber Security efforts to achieve Authority to Operate (ATO) certifications for the System Test and Integration Lab (STIL), the Lab Revitalization Program (LRP), and test facilities as well as integration events that support Initial Operational Test and Evaluation (IOT&E).						
<b>Title:</b> Management  <b>Articles:</b>  <b>Description:</b> Efforts include program, engineering, test, and logistics management to include travel.  <b>FY 2023 Plans:</b> Continue oversight, coordination, and management of MQ-25 acquisition, system interface and integration activities. Oversee contract activities, to include execution of the EMD contract, travel and training. Conduct logistics management tasks. Maintain security and program office environments.  <b>FY 2024 Base Plans:</b> Continue oversight, coordination, and management of MQ-25 acquisition, system interface and integration activities. Oversee contract activities, to include execution of the EMD contract, travel, and training. Conduct logistics management tasks. Maintain security and program office environments.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to personnel transition from development to production efforts.		7.475 -	7.805 -	6.082 -	0.000 -	6.082 -
<b>Title:</b> Test and Evaluation  <b>Articles:</b>  <b>Description:</b> Description: Provide Government Integrated Test and Evaluation and Performance Based Specifications (PBS) compliance verification; support equipment evaluations and assessments, instrumentation development and support, and Integrated Test support.		32.925 -	44.669 -	50.803 -	0.000 -	50.803 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)		Project (Number/Name) 3278 / MQ-25 Air System (AS)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>FY 2023 Plans:</b> Continue to support development, implementation, and sustainment of test facilities, range, and lab test requirements. Support updates to the TEMP, support engineering events, and program management activities. Support activities in Modeling and Simulation development to include validation and verification. Continue support of the Government STIL and continue stand up of the integrated test facilities in support of the EMD contract, to include test facility installation, integration, procurement of support equipment, and accreditation activities. Provide government engineering to support contractor testing in support of Initial UMCS Flight.</p> <p><b>FY 2024 Base Plans:</b> Continue to support development, implementation, and sustainment of test facilities, range, and lab test requirements. Support updates to the Test and Evaluation Master Plan, support engineering events, and program management activities. Support activities in Modeling and Simulation development to include validation and verification. Continue support of the Government System Test and Integration Lab and continue stand up of the integrated test facilities in support of the Engineering Manufacturing and Development contract, to include test facility installation, integration, procurement of support equipment, and accreditation activities. Provide government engineering to support contractor testing and ground/flight test of Engineering Development Models and System Demonstration Test Articles.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY24 funding increase to support the shift of the Engineering Development Model flight test program to reflect new aircraft delivery dates in FY24.</p>						
<p><b>Title:</b> Support</p> <p style="text-align: right;"><b>Articles:</b></p> <p><b>Description:</b> Efforts include studies, analyses, and training development support.</p> <p><b>FY 2023 Plans:</b> Continue to mature the Logistics Product Database, Technical publications, NATOPS publications, and continue to build a Product Lifecycle system to share air system data and resources in an efficient configuration managed environment. Begin to train IOT&amp;E and Squadron (VUQ-10) Fleet operators and maintainers and begin training</p>		3.526 -	6.169 -	3.575 -	0.000 -	3.575 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)				Project (Number/Name) 3278 / MQ-25 Air System (AS)					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
NATEC services in support of post IOT&E activities ("train the trainer" events). Continue development of logistics products associated with GCS.  <b>FY 2024 Base Plans:</b> Continue to mature the Logistics Elements including the Logistics Product Database (LPD), Aviation Logistics Environment (ALE), Interactive Electronic Technical Manual (IETM), Naval Air Training and Operating Procedures Standardization (NATOPS) publications, Common and Peculiar Support equipment (C/PSE) and continue to build a Product Lifecycle Management (PLM) system to share air system data and resources in an efficient configuration managed environment. Evaluate and track maintainability and obsolescence issues including their impact on supportability. Continue to train IOT&E Squadron Fleet operators and maintainers and training Naval Air Technical Data and Engineering Services Command (NATEC) services in support of post IOT&E activities ("train the trainer" events). Continue development of logistics products associated with the Ground Control Station.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Decrease from FY23 to FY24 due to personnel transition from development to production efforts.													
Accomplishments/Planned Programs Subtotals									212.150	227.443	201.945	0.000	201.945
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• APN/0449C: MQ-25 Unmanned Carrier Aviation, AP	47.468	51.463	50.576	-	50.576	51.570	52.554	83.684	87.729	602.698	1,027.742		
• APN/0605 J0449: MQ-25 APN SPARES	57.749	133.541	144.789	-	144.789	107.136	116.037	116.746	177.711	Continuing	Continuing		
• APN/0449: MQ-25 Unmanned Carrier Aviation, APN-4	0.000	744.181	597.160	-	597.160	705.540	707.574	722.495	1,039.612	7,099.479	11,616.041		
Remarks													
APN 0449C is advanced procurement for the MQ-25A AS to procure Low Rate Initial Production (LRIP) long-lead items. APN 0605 spares supports the APN-4 efforts for sparing.													

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605414N / <i>Unmanned Carrier Aviation (UCA)</i>	<b>Project (Number/Name)</b> 3278 / <i>MQ-25 Air System (AS)</i>	

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
APN 0449 is APN-4 regular supporting the manufacturing and production of MQ-25 AS LRIP aircraft.											

**D. Acquisition Strategy**

Based on the Government's acquisition strategy approved in April 2017, the MQ-25 program is an evolution from the previous Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS) program and is an Acquisition Category (ACAT) IB program managed by Program Executive Office, Unmanned Aviation & Strike Weapons (PEO(U&W)), PMA-268 Unmanned Carrier Aviation (UCA) Program Office. Pursuant to 10 U.S.C. 2430(d)(1), the Milestone Decision Authority (MDA) is ASN(RDA).

MQ-25 requirements are aligned with the UCLASS Initial Capabilities Document (ICD) and the Next Generation Air Dominance (NGAD) Family of Systems (FoS) Initial Capabilities Document, which highlight the need for carrier-based refueling and persistent ISR capabilities. The Joint Requirements Oversight Council (JROC) endorsed the UCLASS ICD in April 2011 and formally approved it on 9 June 2011 via JROC Memorandum (JROCM) 087-11. The NGAD Family of Systems ICD was validated by the JROC on 18 August 2015 and formally approved by JROCM 087-15. The JROC's guidance delineated in the validated ICD and subsequent JROCMs were to establish a requirement for a versatile platform that supports a myriad of organic Naval missions such as aerial refueling and ISR for the CVW. The JROC validated the Capability Development Document (CDD) for MQ-25 Carrier Based Unmanned Air System (CBAUS) on 21 July 2017. Through a highly competitive source selection, the EMD contract was awarded in August 2018, and moved the IOC objective four years earlier to 2024. The Navy recognized investments were required to support the shorter schedule and received support to increase the number of test CVN installs from two to four and exercised an option for SDTA production to start in FY20. Due to the UMCS FY20 budget reduction (PU 3279) in PB20, modifications ceased on two of the four test CVNs which made it highly likely IOC would be delayed by at least 10 months. The shift to a mature, industry developed GCS mitigated some of this risk, by providing an embarkable GCS that can be used for testing on any Joint Precision Approach and Landing System (JPALS)-equipped CVN. The latest projection for MQ-25A IOC is July 2026 and the program continues to look for opportunities to mitigate additional schedule risk. A stable funding base for both MQ-25 (PU 3278) and UMCS (PU 3279) remains critical to successfully delivering MQ-25A on an aggressive timeline as the two programs are tightly linked.

MQ-25 is implementing an evolutionary acquisition strategy to develop, fly, deploy, and evolve the MQ-25 Air Vehicle for IOC and fleet integration. This MQ-25 acquisition strategy continues with entry into flight test, correction of deficiencies work, and stand up of logistics and training efforts in conjunction with continued CVN modifications required for a decision to proceed to IOT&E and IOC in FY2026.

MQ-25 awarded a fixed price incentive, firm target (FPIF) contract for the AS EMD contract to Boeing in August 2018. As a result of ASN(RDA) and OPNAV N9 directing new requirements for the MQ-25 GCS, a contract was awarded to Boeing in December 2020 to fund integration of a new, more capable GCS provided as government furnished equipment (GFE) and government furnished information (GFI) by PMA-268.

MQ-25, as part of the evolutionary acquisition strategy, will begin to utilize a Corporate Basic Ordering Agreement (BOA) for engineering studies, nonrecurring engineering to pace emerging threats and capabilities needed for operational environment, sustainment, and training efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)	Project (Number/Name) 3278 / MQ-25 Air System (AS)
MQ-25 is dependent upon the UMCS program to provide CVN-based GCS systems that are integrated into CVN networks.		



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605414N / <i>Unmanned Carrier Aviation (UCA)</i>				Project (Number/Name) 3278 / <i>MQ-25 Air System (AS)</i>					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Segment - Primary Hardware Development	C/FPIF	Boeing : St. Louis, MO	830.883	23.282	Dec 2021	31.789	Dec 2022	20.601	Dec 2023	-		20.601	6.000	912.555	912.555
Air Segment - Primary Hardware SDTA	C/FPIF	Boeing : St. Louis, MO	84.700	0.000		0.000		0.000		-		0.000	0.000	84.700	84.700
Air Segment - Primary Hardware ESA	C/CPIF	Boeing : St. Louis, MO	16.572	1.000	Mar 2022	0.000		24.289	Mar 2024	-		24.289	0.000	41.861	22.267
Air Segment - Primary Hardware BOA	C/BOA	Boeing : St. Louis, MO	0.000	32.536	Aug 2022	11.000	Aug 2023	0.000		-		0.000	0.000	43.536	-
Air Segment- Primary Hardware Development	C/CPIF	Boeing : St. Louis, MO	31.489	15.964	May 2022	14.286	May 2023	3.000	May 2024	-		3.000	25.278	90.017	115.033
Air Segment - Systems Engineering	WR	NAWCAD : Patuxent River, MD	57.922	30.030	Nov 2021	38.062	Nov 2022	30.325	Nov 2023	-		30.325	Continuing	Continuing	Continuing
Air Segment - Systems Engineering	WR	NAWCWD : China Lake, CA	4.351	1.360	Nov 2021	4.000	Nov 2022	1.374	Nov 2023	-		1.374	Continuing	Continuing	Continuing
Air Segment - Systems Engineering	Various	Various : Various	4.024	1.280	Nov 2021	1.281	Nov 2022	1.279	Nov 2023	-		1.279	Continuing	Continuing	Continuing
CS&C Segment	Various	Various : Various	58.911	0.000		0.000		0.000		-		0.000	0.000	58.911	-
Carrier Segment (Ship Integration)	Various	Various : Various	42.882	0.000		0.000		0.000		-		0.000	0.000	42.882	-
LSI - Advanced Development (Primary Hardware Development)	Various	Various : Various	1.272	0.000		0.000		0.000		-		0.000	0.000	1.272	-
LSI - Systems Engineering	Various	Various : Various	21.810	5.119	Nov 2021	5.636	Nov 2022	4.948	Nov 2023	-		4.948	Continuing	Continuing	Continuing
LSI - Systems Engineering	WR	NAWCAD : Patuxent River, MD	126.052	54.153	Nov 2021	58.892	Nov 2022	52.249	Nov 2023	-		52.249	Continuing	Continuing	Continuing
LSI - Systems Engineering	Various	NAVWAR : San Diego, CA	14.899	2.000	Nov 2021	2.202	Nov 2022	1.954	Nov 2023	-		1.954	Continuing	Continuing	Continuing
LSI - Integrated Digital Environment	SS/FFP	NAWCAD : Lakehurst, NJ	14.830	1.500	Mar 2022	1.652	Mar 2023	1.466	Mar 2024	-		1.466	Continuing	Continuing	Continuing
Air Segment -Primary Hardware Development	WR	NSMA : Washington, DC	7.800	0.000		0.000		0.000		-		0.000	0.000	7.800	7.800
Subtotal			1,318.397	168.224		168.800		141.485		-		141.485	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)				Project (Number/Name) 3278 / MQ-25 Air System (AS)					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Manpower Studies & Analyses	Various	Various : Various	0.690	0.200	Nov 2021	0.214	Nov 2022	0.124	Nov 2023	-		0.124	Continuing	Continuing	Continuing
Training Development	Various	Various : Various	13.002	3.326	Nov 2021	5.955	Nov 2022	3.451	Nov 2023	-		3.451	Continuing	Continuing	Continuing
Subtotal			13.692	3.526		6.169		3.575		-		3.575	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	118.798	31.191	Nov 2021	42.914	Nov 2022	49.037	Nov 2023	-		49.037	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/BA	Various : Various	7.108	1.734	Nov 2021	1.327	Nov 2022	1.296	Nov 2023	-		1.296	0.000	11.465	-
Operational Test & Evaluation (OT&E)	C/BA	Various : Various	0.000	0.000		0.428	Nov 2022	0.470	Nov 2023	-		0.470	0.000	0.898	-
Subtotal			125.906	32.925		44.669		50.803		-		50.803	Continuing	Continuing	N/A
Remarks															
Increase from FY23 to FY24 due to the first 4 EDM and 1 SDTA aircraft beginning ground testing.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management	Various	Various : Various	8.317	1.840	Nov 2021	1.921	Nov 2022	1.530	Nov 2023	-		1.530	Continuing	Continuing	Continuing
Management	WR	NAWCAD : Patuxent River, MD	22.778	5.500	Nov 2021	5.744	Nov 2022	4.441	Nov 2023	-		4.441	Continuing	Continuing	Continuing
Management	Various	NAVAIR : Patuxent River, MD	0.585	0.135	Oct 2021	0.140	Oct 2022	0.111	Oct 2023	-		0.111	Continuing	Continuing	Continuing
Subtotal			31.680	7.475		7.805		6.082		-		6.082	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy											Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605414N / <i>Unmanned Carrier Aviation (UCA)</i>					Project (Number/Name) 3278 / <i>MQ-25 Air System (AS)</i>					
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,489.675	212.150		227.443		201.945		-		201.945	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

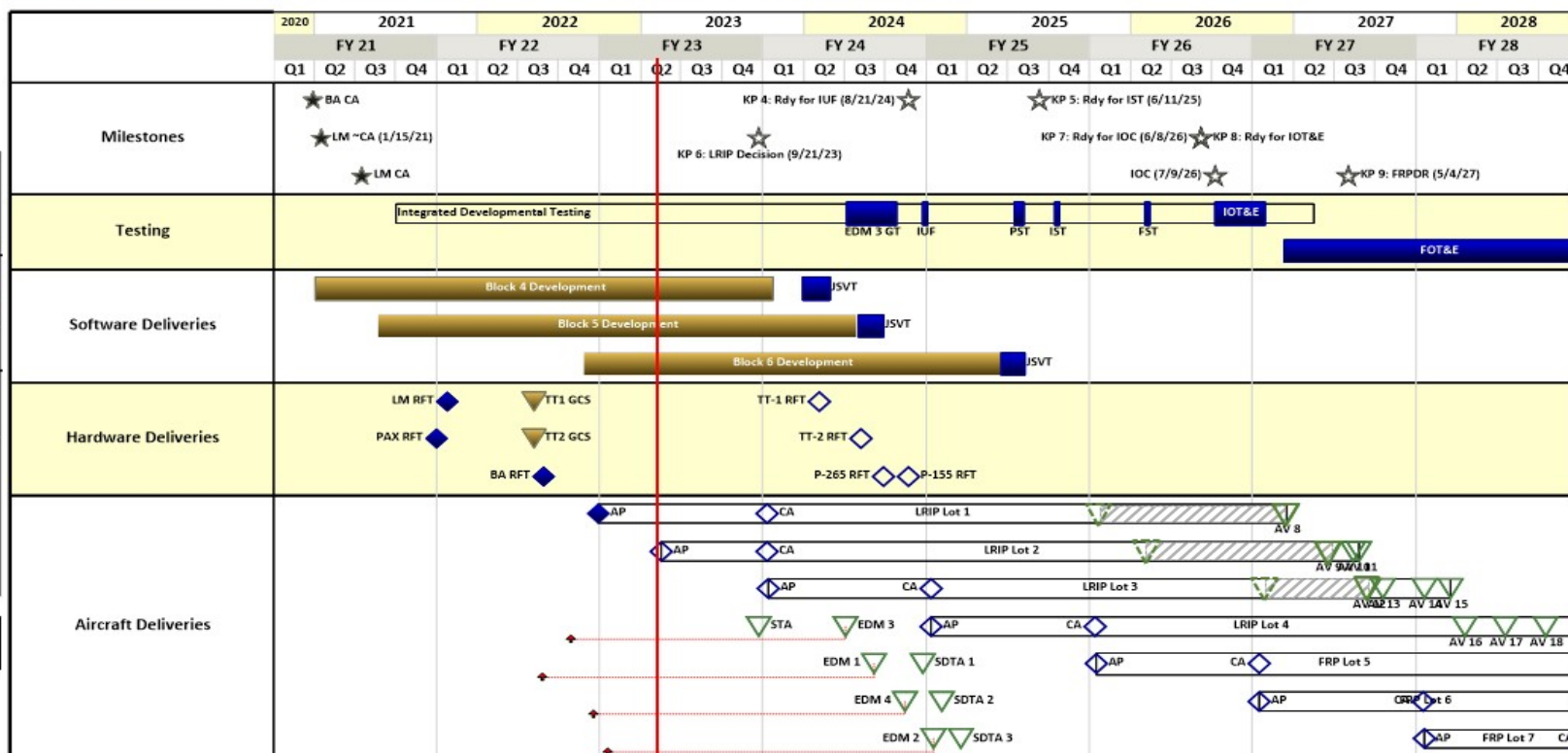
Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0605414N / Unmanned Carrier Aviation  
(UCA)

Project (Number/Name)  
3278 / MQ-25 Air System (AS)



## PMA-268 PB24 BASELINE SCHEDULE



Note: This depiction of the program Integrated Government Schedule is a resource for government planning purposes only and shall not be construed as a modification to delivery or performance requirements set forth in the contract.

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0605414N / Unmanned Carrier Aviation (UCA)

## Project (Number/Name)

3278 / MQ-25 Air System (AS)

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>MQ-25</b>				
Acquisition Milestones: Milestones & Reviews: EDM Delivery 1	3	2024	3	2024
Acquisition Milestones: Milestones & Reviews: EDM Delivery 2	1	2025	1	2025
Acquisition Milestones: Milestones & Reviews: EDM Delivery 3	2	2024	2	2024
Acquisition Milestones: Milestones & Reviews: EDM Delivery 4	3	2024	3	2024
Acquisition Milestones: Milestones & Reviews: KP4 First Ready for IUF	4	2024	4	2024
Acquisition Milestones: Milestones & Reviews: KP5 Ready for IST	3	2025	3	2025
Acquisition Milestones: Milestones & Reviews: Initial Sea Trials	4	2025	4	2025
Acquisition Milestones: Milestones & Reviews: KP6 AV MS C	4	2023	4	2023
Acquisition Milestones: Milestones & Reviews: KP7 Ready for IOC	3	2026	3	2026
Acquisition Milestones: Milestones & Reviews: T-1 Hoist Aboard	1	2022	1	2022
Acquisition Milestones: Milestones & Reviews: Initial Operational Test and Evaluation	3	2026	1	2027
Acquisition Milestones: Milestones & Reviews: IOC	4	2026	4	2026
Acquisition Milestones: Milestones & Reviews: System Demonstration Test Article 1 Delivery	4	2024	4	2024
Acquisition Milestones: Milestones & Reviews: System Demonstration Test Article 2 Delivery	1	2025	1	2025
Acquisition Milestones: Milestones & Reviews: System Demonstration Test Article 3 Delivery	1	2025	1	2025
Acquisition Milestones: Milestones & Reviews: Follow on Test and Evaluation	1	2027	4	2028
Acquisition Milestones: Milestones & Reviews: FRP Decision	3	2027	3	2027
Systems Development: MQ-25 System Design & Integration: Software Integration	4	2022	1	2025
Systems Development: Air Segment: ITT and Integration Support	1	2022	2	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)				Project (Number/Name) 3279 / Unmanned Carrier Aviation Mission Control System			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3279: Unmanned Carrier Aviation Mission Control System	164.867	45.737	27.003	18.459	-	18.459	16.344	18.569	17.654	18.013	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Unmanned Carrier Aviation (UCA) Mission Control System (UMCS) program develops, modifies, builds, integrates, and installs control systems required to operate the MQ-25A. The Unmanned Carrier Aviation Mission Control System program includes what was previously identified as the Control System & Connectivity (CS&C) and Carrier Vessel, Nuclear (CVN) Integration (CVNI) Segments previously captured under the MQ-25 Development PU 3278.

The Unmanned Carrier Aviation Mission Control System program, PU 3279, is the system-of-systems required for MQ-25 vehicle and payload control both shipboard and shore based. Unmanned Carrier Aviation Mission Control System consists of all ground and ship based hardware, software, and networks associated with the planning and execution of flight operations and tactical missions. In addition to Ground Control Station (GCS), consisting of Air Vehicle Operator (AVO) workstations and servers, the Unmanned Carrier Aviation Mission Control System program builds hardware to support line of sight (LOS) communications, beyond line of sight (BLOS) satellite communications (SATCOM), and integration with ship/shore based systems. There are three variants of the GCS: MD-5C (CVN-based), MD-5D (Shore-based) and MD-5E (Embarkable system) for use on CVNs that do not yet have permanent GCS systems installed. Unmanned Carrier Aviation Mission Control System leverages existing Programs of Record for network integration and LOS/BLOS communications and builds MQ-25 unique systems (e.g. an ARC-210 based LOS communication system and a Video Management System (VidMS) for AVO situational awareness). The GCS streamlines software development, supports multiple classification levels, and positions MQ-25A interoperability with other DoD systems. Hardware development and fabrication is one facet of the program. Unmanned Carrier Aviation Mission Control System develops and integrates software and modifies several aircraft carrier spaces to install and integrate the GCS and communication systems, in support of MQ-25A test events and operations aboard select NIMITZ Class CVNs. The Unmanned Carrier Aviation Mission Control System program modifies and integrates with existing, external Command, Control, Communication, Computers, and Intelligence (C4I) systems to provide network paths for air vehicle and mission payload data using a variety of wideband and narrowband communication paths. Unmanned Carrier Aviation Mission Control System accomplishes this by integrating the GCS and the MQ-25A Air Vehicle with multiple networks and systems both at sea and on shore.

Unmanned Carrier Aviation Mission Control System builds the following hardware: MQ-25A GCS, Video Management System (VidMS), ARC-210 Radio Communication System (RCS), and Ashore Routing Communication System (ARCS). The GCS consists of the following components: air vehicle operator (AVO) workstations, server racks, network interface racks, integrated communication system (ICS), Data Transfer System (DTS), and software. The ship variant (MD-5C) will leverage the shore based system components but will have manufacturing differences to account for the harsher CVN environment. The VidMS provides situational awareness displays of the CVN environment. The ARC-210 and Digital Modular Radio (DMR) systems provide narrowband command and control (C2) communications between the GCS and the MQ-25A. An ICS 1/2 rack integrates the GCS with existing carrier communication systems. The ARCS provides an interface between the shore GCS sites and the Command, Control, Communication, Computers, and Intelligence (C4I) networks enabling wide-band LOS and BLOS communications with the MQ-25A. Unmanned Carrier Aviation Mission Control System also leverages NAVWAR baseline systems on board the CVNs and at the MQ-25A shore sites.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023				
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)	Project (Number/Name) 3279 / Unmanned Carrier Aviation Mission Control System				
Unmanned Carrier Aviation Mission Control System leads development, modification, engineering, and integration activities, to facilitate seamless voice, data, and C2 exchanges with the MQ-25A AV, local networks, voice networks, C2 networks, tactical networks, intelligence systems, and launch and recovery systems by collaborating with existing NAVWAR, NAVAIR and NAVSEA Programs of Record (PoRs).							
CVN modification and installation is governed by the Naval Sea Systems Command (NAVSEA) Navy Modernization Process (NMP). This process defines the schedule for submitting documentation, drawings, and hardware to support CVN modifications. Unmanned Carrier Aviation Mission Control System modifications must occur during pre-planned maintenance periods that are updated at least twice per year. Changes to these maintenance periods drive changes to the Unmanned Carrier Aviation Mission Control System installation schedule. The NMP consists of multiple phases. Phase 1, approximately three years before the availability period, consists of developing the system design, technical data, installation guidance, and Ship Change Documents (SCDs). Phase 2, approximately two years before the maintenance period, consists of hull specific ship checks, drawing development and hardware procurement. Phase 3, one year before the maintenance period, consists of drawing approval, install schedule development, completion of cybersecurity and logistics documentation, and GCS integration testing. Phase 4 occurs during the maintenance period and consists of CVN infrastructure modification, hardware installation, and completion of ship-board integrated verification testing. CVN modifications and installations are based on the number of SCDs and the length of the planned maintenance period. Due to the size and complexity of the Unmanned Carrier Aviation Mission Control System modifications, a minimum of two 6-month maintenance periods is required for a full installation.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Unmanned Carrier Aviation (UCA) Mission Control System			45.737	27.003	18.459	0.000	18.459
Articles:			-	-	-	-	-
Description: Description: The Unmanned Carrier Aviation Mission Control System program is a Government-led effort which includes, but is not limited to, development, integration, installation, and testing of the Unmanned Carrier Aviation Mission hardware and software, upgrades to existing CVN infrastructure to support accelerated delivery of MQ-25 capabilities, unique modifications to the Joint Precision Approach Landing System (JPALS) and the Aircraft Launch and Recovery Equipment (ALRE) to support specific MQ-25A capabilities, and integration with C4I systems.							
FY 2023 Plans:							
- Complete GCS software development and integration with MQ-25A AV software							
- Develop software Correction of Deficiency (CoD) builds based on lab, ground, and shore-based flight testing							
- Complete VidMS redesign due to End of Life (EOL) components and removal of the video wall and support station based on new GCS design							
- Complete development, qualification, and testing of the URC-300 radio							
- Complete development, qualification, and testing of the Unmanned Carrier Aviation (UCA) Transport System (UTS)							
- Correct ancillary system problems identified during Initial UMCS Flight (IUF)							

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)		Project (Number/Name) 3279 / Unmanned Carrier Aviation Mission Control System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Complete assembly, integration, and test of the MD-5E CVN Embarkable system</div> <div>- Finalize guidance packages and interface control documentation for the MD-5E CVN Embarkable system</div> <div>- Complete the planning and infrastructure installation for the MD-5E on CVNs A and D</div> <div>- Install the MD-5E Embarkable system on one of the four test carriers</div> <div>- Finalize interface design between the MD-5E and ancillary/communication/network systems</div> <div>- Develop Technical Data Packages for system level components</div> <div>- Maintain Cybersecurity certifications for the GCS, VidMS, ARC-210 RCS, ARCS, and other ancillary systems</div> <div>- Lab integration and test support for ARCS with the MD-5D GCS and C4I Networks</div> <div>- C4I Test &amp; Integration Support for Wideband Line of Sight (LOS) and Beyond LOS (BLOS) programs of record: Network Tactical Common Datalink (NTCDL) and Military/Commercial SATCOM</div> <div>- Provide for NRE and integration of C4I systems at operational fixed control shore stations</div> <div>FY 2024 Base Plans:</div> <div>- Install Embarkable, Test Trailer and Test unique equipment on CVN B to support at sea testing of MQ-25 in FY25</div> <div>- Install MD-5E hardware in the Unmanned Air Warfare Center (UAWC), Test Trailer and Test unique equipment on CVN A to support at sea testing of MQ-25 in FY25</div> <div>- Tasking for SIDs development on CVN C and CVN B to support installation of Test Trailer and Test unique equipment to support at sea testing of MQ-25 in the late FY25 and early FY26 timeframe</div> <div>- Continue development of Technical Data Packages for system level components</div> <div>- Finalize interface design between the MD-5E and ancillary/communication/network systems</div> <div>- Complete assembly, integration and test of the MD-5E CVN Emabarkable system</div> <div>- Finalize guidance packages and interface control documentation for the MD-5E CVN Embarkable system</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>Decrease from FY23 to FY24 due to MD-5C work transition to OPN. Majority of tasking is now related to Embarkable work.</div>						
Accomplishments/Planned Programs Subtotals		45.737	27.003	18.459	0.000	18.459



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)				Project (Number/Name) 3279 / Unmanned Carrier Aviation Mission Control System				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• OPN/4269: UMCS- Unman Carrier Aviation (UCA) Mission Cntrl Stn	67.226	134.726	152.687	-	152.687	131.201	200.476	192.822	197.087	Continuing	Continuing	
• OPN/9020/J4269: Spares for Unmanned Carrier Aviation (UCA)	0.000	3.246	8.150	-	8.150	10.333	10.126	10.427	4.563	Continuing	Continuing	
Remarks												
The Unmanned Carrier Aviation (UCA) Mission Control System (UMCS) program builds, integrates, installs, and sustains GCSs required to operate the MQ-25A AV via CVNs or shore sites.												
- RDTE will fund the redesign of the CVN infrastructure; design, assembly, and installation of an embarkable GCS to support testing; software development to support MQ-25A AV development and certification of new software for UMCS on Navy IT systems/platforms; product development modifying existing systems with new capabilities for integration with or utilization by UMCS.												
- OPN will fund the modification of CVN infrastructure and installation of hardware on CVNs and operational shore sites; incorporation of UMCS into existing Post MS-C PoRs (i.e. NAVWAR - C4I, ADNS, SATCOM, Secure Shore Integration; NAVAIR - ALRE, JPALS); Tech Refresh which includes replacement of a portion of selected hardware components on a three year recurring schedule.												
D. Acquisition Strategy												
In February 2019, the Unmanned Carrier Aviation (UCA) Mission Control System (UMCS) program was designated an ACAT II program, a separate PoR from the MQ-25 Air System (AS) ACAT IB. However both PoRs, Unmanned Carrier Aviation Mission Control System and MQ-25, are required to field an Unmanned Carrier Aviation Mission Control System. MQ-25 Air System is dependent on Unmanned Carrier Aviation Mission Control System to meet the program's 2026 IOC.												
- Due to the close alignment of requirements with MQ-25 Air System, interoperability, and parent documentation, the Unmanned Carrier Aviation Mission Control System PoR will leverage MQ-25 PoR acquisition events and milestones as part of the acquisition strategy for oversight and approvals.												
- The Unmanned Carrier Aviation Mission Control System government team is performing the role of the Lead Systems Integrator (LSI) for the Ground Control System (GCS).												
- In order to expedite fielding of Unmanned Carrier Aviation Mission Control System and to align with the IOC requirements for the MQ-25 SoS, the program team has and will continue to leverage systems with high Technology Readiness Levels, largely consisting of Commercial and Government Off the Shelf systems (i.e. COTS and GOTS) to the greatest extent possible.												
The latest Unmanned Carrier Aviation Mission Control System acquisition strategy was approved on 25 July 2019. The Unmanned Carrier Aviation Mission Control System PoR will use an evolutionary acquisition approach to develop, integrate, test, deploy, and evolve the capabilities throughout the life of the system. The Unmanned Carrier Aviation Mission Control System requires integration of multiple products with the primary developmental system being the software dominant GCS.												

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605414N / <i>Unmanned Carrier Aviation (UCA)</i>	<b>Project (Number/Name)</b> 3279 / <i>Unmanned Carrier Aviation Mission Control System</i>
<p>Prior to FY21, PMA-268 had been developing a government-furnished Ground Control Station (GCS) known as MD-5A and MD-5B as part of its Unmanned Carrier Aviation Mission Control System program, the system-of systems required for command and control of the MQ-25A Air Vehicle (AV) and payload. In September 2020, Navy leadership directed the MQ-25 program to transition to a mature, industry-developed GCS capable of Joint All Domain Command and Control (JADC2) interoperability and meeting multi-level security requirements. The new Lockheed Martin designed and built GCS will streamline software development, readily support multiple classification levels, and position the MQ-25 for interoperability with other DoD systems. With the decision to switch to an industry developed GCS, work associated with integrating the new GCS into the MQ-25A Air Vehicle and payload was put on contract with Boeing (for integration) in December 2020 and Lockheed Martin (via NSMA) in April 2021.</p> <p>Unmanned Carrier Aviation Mission Control System hardware procurements will accommodate CVN installation, testing, and deployment constraints as well as ship modification schedule constraints.</p> <p>- Because the Unmanned Carrier Aviation Mission Control System is integrated and installed aboard CVNs, PMA-268 must follow the ship modernization process, which directs delivery dates for deliverables and installation milestones associated with a CVN maintenance availability period. The lead-time associated with this process drives the timeline to design, develop, and procure equipment ahead of the planned installation date.</p> <p>Unmanned Carrier Aviation Mission testing will occur in multiple stages, progressing from standalone testing with an air vehicle simulator, to operating in conjunction with a hardware-in-the-loop air vehicle (hot bench), to shipboard evaluation of Unmanned Air Warfare Center (UAWC) installations. Each version of Unmanned Carrier Aviation Mission Control System will be evaluated for system functionality and usability through a series of capabilities-based test events focused on the execution of mission tanking, recovery tanking, and Intelligence, Surveillance, and Reconnaissance missions. Additional testing to include mission planning, supportability, and reliability will be conducted during dedicated events when not captured concurrently with other tests.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605414N / Unmanned Carrier Aviation (UCA)				Project (Number/Name) 3279 / Unmanned Carrier Aviation Mission Control System					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UMCS (Ship Integration)	Various	Various : Various	33.655	7.338	Nov 2021	5.107	Nov 2022	6.398	Nov 2023	-		6.398	Continuing	Continuing	Continuing
UMCS (Ship Integration)	WR	NAWCAD : Patuxent River, MD	92.928	34.633	Nov 2021	19.846	Nov 2022	12.061	Nov 2023	-		12.061	Continuing	Continuing	Continuing
UMCS (Ship Integration)	WR	NAWCAD : Lakehurst, NJ	9.810	1.547	Nov 2021	0.000		0.000		-		0.000	4.031	15.388	-
UMCS - Primary Hardware/Software Development CS	WR	NSMA : Washington, DC	15.221	0.000		0.000		0.000		-		0.000	0.000	15.221	-
UMCS	SS/FFP	Rockwell Collins : Cedar Rapids, IA	2.856	0.000		0.000		0.000		-		0.000	0.000	2.856	2.242
UMCS	Various	NAVWAR : San Diego, CA	10.397	2.219	Nov 2021	2.050	Nov 2022	0.000		-		0.000	6.589	21.255	-
Subtotal			164.867	45.737		27.003		18.459		-		18.459	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			164.867	45.737		27.003		18.459		-		18.459	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0605414N / Unmanned Carrier Aviation (UCA)

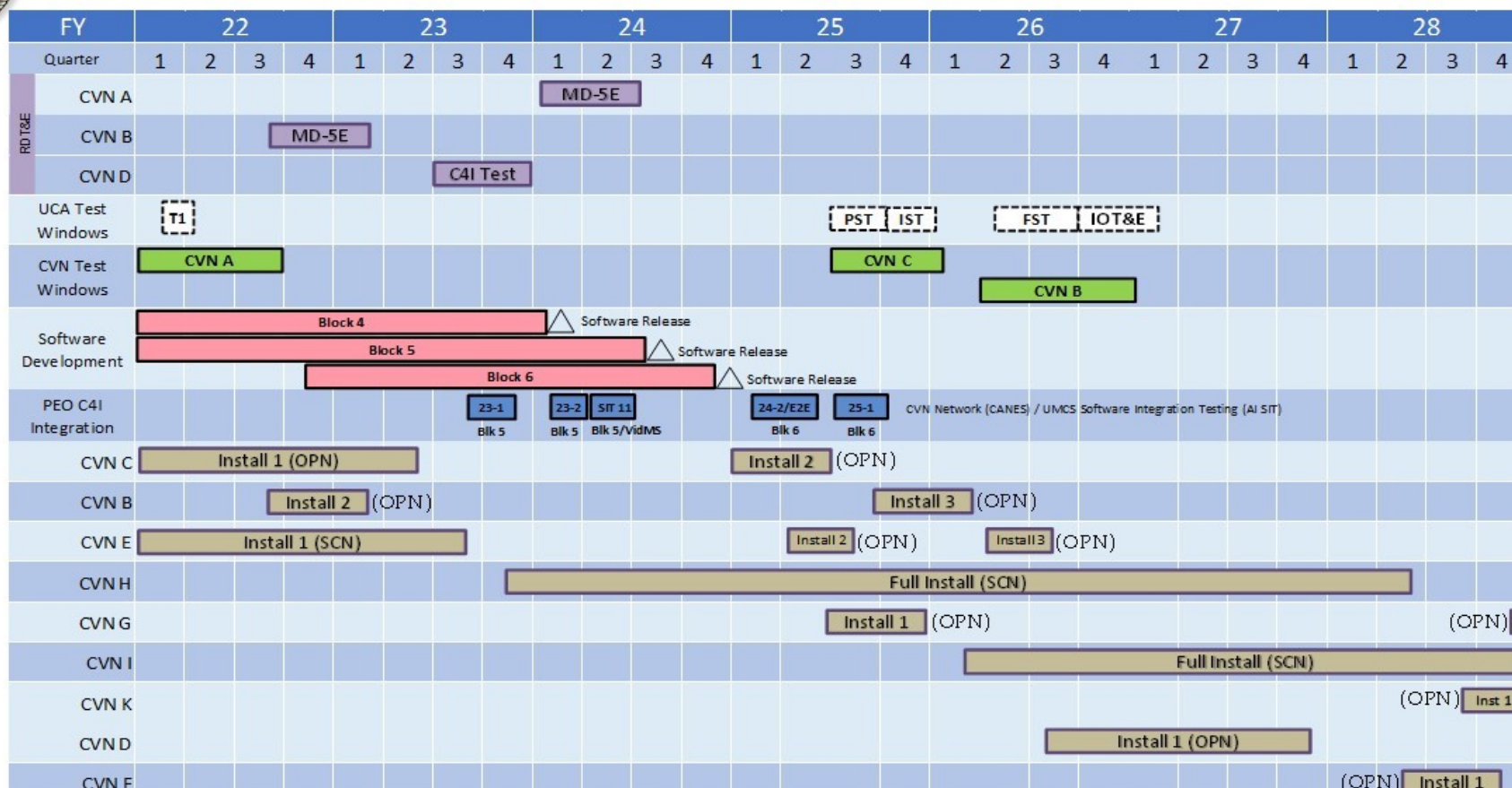
Project (Number/Name)

3279 / Unmanned Carrier Aviation Mission Control System



## PMA 268 CVN AVAILABILITY TARGETS (NO HULL #S)

AS OF 23 FEBRUARY 2023 (PMS 312 CVN AVAILABILITY SCHEDULE DATED 27 DECEMBER 2022)



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605414N / <i>Unmanned Carrier Aviation (UCA)</i>	<b>Project (Number/Name)</b> 3279 / <i>Unmanned Carrier Aviation Mission Control System</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>UMCS</b>				
System Development (RDTE Carriers): UMCS Program (MD-5): CVN B MD-5E Temporary Installation	3	2022	1	2023
System Development (RDTE Carriers): UMCS Program (MD-5): CVN D MD-5E Temporary Installation	3	2023	1	2024
System Development (RDTE Carriers): UMCS Program (MD-5): CVN A MD-5E Temporary Installation	4	2023	2	2024
System Development (RDTE Carriers): UMCS Program (MD-5): UMCS Program: Software (SW) Development/SW Testing/Technology Refresh/SW Integration	1	2022	2	2024
System Development (RDTE Carriers): NAVWAR C4I Integration: AI SIT, ADNS	1	2023	4	2025
Carrier Modifications (OPN Carriers): CVN C Installation 1	1	2022	2	2023
Carrier Modifications (OPN Carriers): CVN C Installation 2	1	2025	3	2025
Carrier Modifications (OPN Carriers): CVN B Installation 2	3	2022	1	2023
Carrier Modifications (OPN Carriers): CVN B Installation 3	3	2025	1	2026
Carrier Modifications (OPN Carriers): CVN D Installation 1	3	2026	4	2027
Carrier Modifications (OPN Carriers): CVN E Installation 2	2	2025	3	2025
Carrier Modifications (OPN Carriers): CVN E Installation 3	2	2026	3	2026
Carrier Modifications (OPN Carriers): CVN F Installation 1	2	2028	4	2028
Carrier Modifications (OPN Carriers): CVN G Installation 1	2	2025	4	2025
Carrier Modifications (OPN Carriers): CVN G Installation 2	4	2028	4	2028
Carrier Modifications (OPN Carriers): CVN K Installation 2	3	2028	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605450M I Joint Air-to-ground Missile (JAGM)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	32.561	0.345	0.371	0.384	-	0.384	0.393	0.403	0.410	0.418	0.000	35.285
2211: Joint Air-to-Ground Missile	32.561	0.345	0.371	0.384	-	0.384	0.393	0.403	0.410	0.418	0.000	35.285
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P355												
Note Prior to FY 2019, funding for Joint Air-to-Ground Missile (JAGM) was aligned to PE 0605450N.												
A. Mission Description and Budget Item Justification The Joint Air-to-Ground Missile (JAGM) is an air-launched missile system that utilizes dual-mode seeker technology thus providing advanced line-of-sight and beyond-line-of-sight capabilities, including precision point and fire-and-forget seeker targeting and increased lethality against soft, hardened, moving, stationary, land, maritime threats. JAGM provides robust capability in adverse weather, day or night and in obscured/countermeasure environments. The JAGM Increment 1 system replaces aviation-launched, tube-launched, optically-tracked, wire-guided (TOW), and Helicopter Launched Fire-&-Forget Missile (HELLFIRE) Systems. JAGM is an Army-led joint program that addresses rotary wing, fixed wing, and unmanned aerial vehicle requirements. Funding includes support of platform integration activities of the AH-1Z, the Department of Navy threshold platform for the JAGM integration. The JAGM system includes missiles, trainers, containers, support equipment and software modifications to the M-299 launcher. Future JAGM follow on efforts could include extending the weapon's range, developing a fixed wing variant, and developing potential follow on increments.  The JAGM program is part of the Navy's Integrated Fire Control (IFC) approach to address advanced threat capabilities in the Anti-Access/Area-Denial (A2AD) environment. IFC solutions enable individual system capabilities to be leveraged across an effects chain, placing the full spectrum of tactical capability in the hands of the warfighter. IFC solutions that push engagement distances beyond the launch platform's radar horizon and allow the United States Navy to operate in, and control, contested battle space in littoral waters and A2/AD environments are increasingly critical as more and more scenarios require compressed and coordinated fire control timelines.  JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under system development and demonstration because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605450M I Joint Air-to-ground Missile (JAGM)			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.356	0.371	0.382	-	0.382
Current President's Budget	0.345	0.371	0.384	-	0.384
Total Adjustments	-0.011	0.000	0.002	-	0.002
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.011	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.002	-	0.002
Change Summary Explanation					
Acquisition Milestones: Changes in Milestone dates were needed in order to address technical issues with the AH-1Z platform software.					
FRP Decision moved from 3Q FY 2022 to 4Q FY 2022					
FRP 1 award moved from 4Q FY 2022 to 2Q FY 2023					
FRP 2 award moved from 2Q FY 2023 to 3Q FY 2023					
FRP 3 award moved from 1Q FY 2024 to 3Q FY 2024					
FRP 4 award moved from 1Q FY 2025 to 3Q FY 2025					
FRP 5 award moved from 1Q FY 2026 to 3Q FY 2026					
FRP 6 award moved from 1Q FY 2027 to 3Q FY 2027					
LRIP V and FRP delivery periods revised to reflect updated FRP contract award dates.					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605450M / Joint Air-to-ground Missile (JAGM)				Project (Number/Name) 2211 / Joint Air-to-Ground Missile			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2211: Joint Air-to-Ground Missile	32.561	0.345	0.371	0.384	-	0.384	0.393	0.403	0.410	0.418	0.000	35.285
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: P355												
Note Prior to FY 2019, funding for Joint Air-to-Ground Missile (JAGM) was aligned to PE 0605450N.												
A. Mission Description and Budget Item Justification The Joint Air-to-Ground Missile (JAGM) is an air-launched missile system that utilizes dual-mode seeker technology thus providing advanced line-of-sight and beyond-line-of-sight capabilities, including precision point and fire-and-forget seeker targeting and increased lethality against soft, hardened, moving, stationary, land, maritime threats. JAGM provides robust capability in adverse weather, day or night and in obscured/countermeasure environments. The JAGM Increment 1 system will replace aviation-launched; tube-launched, optically-tracked, wire-guided (TOW), and Helicopter Launched Fire-&Forget Missile (HELLFIRE) Systems. Later increments of JAGM will be fixed wing compatible. JAGM is an Army-led joint program that addresses rotary wing, fixed wing and unmanned aerial vehicle requirements. The Department of Navy threshold platform is the AH-1Z. The JAGM system includes missile, trainers, containers, support equipment and software modifications to the M-299 launcher.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: JAGM Engineering and Manufacturing Development (EMD) Phase  Articles:  FY 2023 Plans: FY 2023 funding will cover continued software correction of deficiencies and associated airworthiness engineering/logistics support and any required test validation including integration testing, operation testing and cyber testing.  FY 2024 Base Plans: FY 2024 funding will cover continued software correction of deficiencies and associated airworthiness engineering/logistics support and any required test validation including integration testing, operation testing and cyber testing. Commence efforts to assess feasibility of follow on JAGM Increment 1 weapon system and JAGM Increment 1 upgrades.  FY 2024 OCO Plans:								0.345	0.371	0.384	0.000	0.384
								-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605450M / Joint Air-to-ground Missile (JAGM)				Project (Number/Name) 2211 / Joint Air-to-Ground Missile			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
N/A											
FY 2023 to FY 2024 Increase/Decrease Statement: Increase of \$0.013M from FY 2023 to FY 2024 is due to starting JAGM Increment 1 feasibility efforts.											
Accomplishments/Planned Programs Subtotals						0.345	0.371	0.384	0.000	0.384	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RDT&E ARMY, 0605450A: JAGM	2.142	2.292	3.014	-	3.014	3.024	0.000	0.000	0.000	Continuing	Continuing
• MPA, ARMY, C70302: JAGM	152.177	216.030	303.409	-	303.409	162.490	191.751	175.659	181.500	4,745.542	7,094.107
• WPN/2248: Joint Air Ground Missile (JAGM)	46.702	78.395	79.292	-	79.292	81.317	83.729	84.789	88.416	832.138	1,544.427
Remarks											
D. Acquisition Strategy											
The Joint Air-to-Ground Missile (JAGM) system is an ACAT-1C Joint Army/Navy Major Defense Acquisition Program (MDAP) with the Army designated as lead service. Milestone B was achieved in July 2015 with Milestone C achieved June 2018. The Engineering, Manufacturing and Development contract was a full and open competition and was awarded July 2015. The vendor, Lockheed Martin, is responsible for the production of a technically mature and fully producible JAGM Guidance Section (GS) as well as the integration of the GS with the current HELLFIRE-R missile warhead and motor section for Increment 1 capability. The Army is responsible for the development and production of the JAGM missile and integration on the AH-64 Apache. The Navy is responsible for integration of the JAGM on the United States Marine Corps AH-1Z which achieved an Initial Operational Capability (IOC) in March 2022.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605450M / Joint Air-to-ground Missile (JAGM)				Project (Number/Name) 2211 / Joint Air-to-Ground Missile					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCWD : China Lake, CA	2.301	0.040	Nov 2021	0.042	Nov 2022	0.046	Nov 2023	-		0.046	0.120	2.549	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	1.931	0.065	Nov 2021	0.067	Nov 2022	0.072	Nov 2023	-		0.072	0.130	2.265	-
Contractor Integration & Test	C/FFP	Lockheed Martin : Orlando, FL	1.774	0.240	Mar 2022	0.000		0.000		-		0.000	0.000	2.014	2.014
Contractor Integration & Test	Various	Various : Various	0.000	0.000		0.157	Mar 2023	0.115	Mar 2024	-		0.115	1.273	1.545	-
Trade Studies	Various	Various : Various	0.000	0.000		0.000		0.047	Mar 2024	-		0.047	0.089	0.136	-
Prior year Product Development costs no longer in FYDP	Various	Various : Various	3.938	0.000		0.000		0.000		-		0.000	0.000	3.938	-
Subtotal			9.944	0.345		0.266		0.280		-		0.280	1.612	12.447	N/A
Remarks															
Aircraft Integration and Integration & Test included in Prior year Production Development costs no longer funded in the FYDP.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	WR	NAWCWD : China Lake, CA	0.642	0.000		0.030	Nov 2022	0.033	Nov 2023	-		0.033	0.000	0.705	-
Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.196	0.000		0.030	Nov 2022	0.031	Nov 2023	-		0.031	0.000	0.257	-
Prior year Support cost no longer in FYDP	Various	Various : Various	4.070	0.000		0.000		0.000		-		0.000	0.000	4.070	-
Subtotal			4.908	0.000		0.060		0.064		-		0.064	0.000	5.032	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605450M / Joint Air-to-ground Missile (JAGM)						Project (Number/Name) 2211 / Joint Air-to-Ground Missile					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Operational Test & Evaluation (OT&E)	Various	Various : Various	1.314	0.000		0.030	Nov 2022	0.035	Nov 2023	-		0.035	0.000	1.379	-		
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	13.467	0.000		0.000		0.000		-		0.000	0.000	13.467	-		
Subtotal			14.781	0.000		0.030		0.035		-		0.035	0.000	14.846	N/A		
Remarks																	
Test & Evaluation at NAWCAD, NAWCWD and USMC: MCAS Yuma included in Prior year Test & Evaluation costs no longer funded in the FYDP.																	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Contr Eng Supt - ETS (NONFFRDC)	Various	Various : Various	2.003	0.000		0.000		0.000		-		0.000	0.000	2.003	-		
Management Services	Various	NAWCAD : Patuxent River, MD	0.708	0.000		0.015	Nov 2022	0.000		-		0.000	0.000	0.723	-		
Travel	Various	NAWCAD : Patuxent River, MD	0.217	0.000		0.000		0.005	Nov 2023	-		0.005	0.000	0.222	-		
Subtotal			2.928	0.000		0.015		0.005		-		0.005	0.000	2.948	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			32.561	0.345		0.371		0.384		-		0.384	1.612	35.273	N/A		
Remarks																	
1) Program acquisition milestones (minus unique Initial Operating Capability) and production milestones are joint program milestones for both Army and Navy.																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023																																							
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0605450M / Joint Air-to-ground Missile (JAGM)								Project (Number/Name) 2211 / Joint Air-to-Ground Missile																																			
												FY22				FY23				FY24				FY25				FY26				FY27				FY28																			
												1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																
Milestones												INCR 1 JAGM PRODUCTION & DEPLOYMENT PHASE																																											
												FRP Decision ▽				FRP-2 ▽ FRP-1 ▽				FRP-3 ▽				FRP-4 ▽				FRP-5 ▽				FRP-6 ▽				FRP-7 ▽																			
												LRIP IIIB				LRIP IV Deliveries				LRIP V Deliveries				FRP-1 Deliveries				FRP-2 Deliveries				FRP-3 Deliveries				FRP-4 Del																			
Current AH-12 Integration Schedule												AH-12												Navy IOC★																															
																								IOT&E OTRR Post Flight Analysis Range Spt																															
																																								Correction & Integration of Software Deficiencies															

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605450M / Joint Air-to-ground Missile (JAGM)	<b>Project (Number/Name)</b> 2211 / Joint Air-to-Ground Missile	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>JAGM</b>				
IOC	2	2022	2	2022
FRP Decision	4	2022	4	2022
Test and Evaluation: Operational Testing: IOT&E	1	2022	2	2022
Production Milestones: Contract Awards: FRP Decision (WPN)	4	2022	4	2022
Production Milestones: Contract Awards: FRP 1 (WPN)	2	2023	2	2023
Production Milestones: Contract Awards: FRP 2 (WPN)	3	2023	3	2023
Production Milestones: Contract Awards: FRP 3 (WPN)	3	2024	3	2024
Production Milestones: Contract Awards: FRP 4(WPN)	3	2025	3	2025
Production Milestones: Contract Awards: FRP 5 (WPN)	3	2026	3	2026
Production Milestones: Contract Awards: FRP 6 (WPN)	3	2027	3	2027
Production Milestones: Contract Awards: FRP 7 (WPN)	3	2028	3	2028
Production Milestones: Deliveries: LRIP 3B (WPN)	2	2022	2	2023
Production Milestones: Deliveries: LRIP 4 (WPN)	2	2023	2	2024
Production Milestones: Deliveries: LRIP 5 (WPN)	3	2024	1	2025
Production Milestones: Deliveries: FRP 1 (WPN)	2	2025	4	2025
Production Milestones: Deliveries: FRP 2 (WPN)	1	2026	4	2026
Production Milestones: Deliveries: FRP 3 (WPN)	1	2027	1	2028
Production Milestones: Deliveries: FRP 4 (WPN)	1	2028	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircraft (MMA) (P-8A)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	75.888	28.842	37.939	36.027	-	36.027	42.032	44.275	45.405	47.503	Continuing	Continuing
3368: P-8 Improvements	75.888	28.842	37.939	36.027	-	36.027	42.032	44.275	45.405	47.503	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 334												
A. Mission Description and Budget Item Justification												
<p>The P-8A Multi-mission Maritime Aircraft (MMA) program was initiated in response to the Joint Requirements Oversight Council (JROC) validated Mission Needs Statement, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance" and the requirements for the program are defined in the P-8A Capability Production Document #791-88-09, validated and approved on 22 June 2009. A successful Critical Design Review was completed in June 2007. In August 2007 the Design Readiness Review was conducted and resulted in approval to obligate funding for the fabrication of the Stage II flight test aircraft. The first flight of P-8A occurred on 25 Apr 2009. Milestone C was successfully completed on 11 August 2010. The program completed Initial Operational Test and Evaluation (IOT&amp;E) in March 2013 and achieved Initial Operational Capability (IOC) in November 2013. The Acquisition Decision Memorandum approved entry into Full Rate Production on January 3, 2014.</p>												
<p>During the initial Systems Development and Demonstration (SDD) phase (PE 0605500N PU 2696), which completed in 2020, the program performed the system detailed design, develop and produce Systems Integration Labs, developed and built ground and flight test articles, and conducted ground and flight tests to successfully achieve program milestones. Ground testing included the conduct of static testing, fatigue testing and Live Fire Test and Evaluation. Additionally, six flight test aircraft were built, and grouped into two stages based on which phase of the test program the aircraft supported. SDD Stage I flight test aircraft (FY06/Qty-3) supported Integrated Test and Evaluation (IT&amp;E). SDD Stage II flight test aircraft (FY09/Qty-3) supported the completion of IT&amp;E and IOT&amp;E after being updated to the production configuration. The SDD contract included the development and initial building of training devices to support IOT&amp;E, all activities necessary to facilitate an efficient transition of the fleet to achieve the P-8A IOC in CY13, and the engineering and verification of corrected deficiencies identified in testing and Fleet operational use. P-8A entered Production and Deployment phase in the 4th quarter of FY10 and entered Full Rate Production in 2nd quarter of FY14.</p>												
<p>P-8A MMA program follow-on SDD activities (PU 3368) include Assured Maritime Dominance Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW), and Intelligence, Surveillance, and Reconnaissance (ISR) activities implemented as a sequence of Rapid Capability Insertions (RCI) and rapid development efforts to respond to evolving threats and adversary capabilities, which will retain cost effectiveness for winning major combat operations. In order to pace the threat, these efforts will incorporate incremental software and/or hardware improvements that increase/exceed the current performance envelope, to include reliability/maintainability improvements, obsolescence, periodic technology insertion, urgent operational needs, correction of deficiencies and flight safety issues, to existing sensor capabilities, communications systems, mission systems, airframe and engine component systems, weapons capabilities, training systems and Tactical Operations Center (TOC) / Tacmobile support to build on the initial P-8A SDD (PU 2696) capability baseline. These planned and emergent requirements will be prioritized through either the Navy Integration and interoperability (I&amp;I) aligned Capability Prioritization Process (CPP), P-8A Tier 3 Capability Roadmap and/or through Fleet identification of an Urgent Operational Need. The CPP process is supported by detailed analysis and the maturations of developing technologies.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircraft (MMA) (P-8A)			
Budget Activity 5. JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	27.279	37.939	38.661	-	38.661
Current President's Budget	28.842	37.939	36.027	-	36.027
Total Adjustments	1.563	0.000	-2.634	-	-2.634
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.217	0.000			
• SBIR/STTR Transfer	-0.654	0.000			
• Program Adjustments	0.000	0.000	-2.790	-	-2.790
• Rate/Misc Adjustments	0.000	0.000	0.156	-	0.156
Change Summary Explanation FY24 reduction since the previous President's Budget Submission is to fund other higher priorities within the department, as well as to account for working capital fund rate adjustments.					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircraft (MMA) (P-8A)				Project (Number/Name) 3368 / P-8 Improvements			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3368: P-8 Improvements	75.888	28.842	37.939	36.027	-	36.027	42.032	44.275	45.405	47.503	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 334												
A. Mission Description and Budget Item Justification												
The P-8A MMA program's Assured Maritime Dominance Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW), and Intelligence, Surveillance, and Reconnaissance (ISR) activities include a sequence of Rapid Capability Insertions (RCI) and rapid development efforts to respond to evolving threats and adversary capabilities, which will retain cost effectiveness for winning major combat operations. In order to pace the threat, these efforts will incorporate incremental software and/or hardware improvements that increase/exceed the current performance envelope, to include reliability/maintainability improvements, obsolescence, periodic technology insertion, urgent operational needs, correction of deficiencies and flight safety issues, to existing sensor capabilities, communications systems, mission systems, airframe and engine component systems, weapons capabilities, training systems and Tactical Operations Center (TOC) /Tacomobile support to build on the P-8A capability baseline. These planned and emergent requirements will be prioritized through either the Navy Integration and interoperability (I&I) aligned Capability Prioritization Process (CPP), P-8A Tier 3 Capability Roadmap and/or through Fleet identification of an Urgent Operational Need. The CPP process is supported by detailed analysis and the maturations of developing technologies.												
Assured Maritime Dominance activities include principal mission lethality, survivability against kinetic and non-kinetic threats, and capability persistence in high-level threat environments. Rapid Development efforts increase lethality through optimization of kill-chain software systems, employment of LRASM, and other weapon systems and Airborne Weapon Simulator capabilities. RCI4 capabilities include kill-chain/gap analysis, ASW Enhancements, common weapons synchronization, and Airborne Weapon Simulator continuation. RCI5 capabilities increase P-8A survivability through Radio Frequency Counter Measure (RFCM)/Advanced Survivability Pod (ASP) Certification, P-8A Survivability Assurance and distributed sensor network improvements.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Perform technology demonstrations and analyses of proposed new capabilities								22.749	33.476	31.429	0.000	31.429
								Articles: -	-	-	-	-
FY 2023 Plans:												
Continue to develop RCI packages and rapid/urgent development efforts to incrementally incorporate software and hardware capability improvements, building on the P-8A Baseline to ensure ongoing relevance of the P-8A capability. Continue LRASM efforts to include analysis of airworthiness data to support fleet flight clearance, software development and platform integration efforts, commence flight test for integrated LRASM capabilities, and support test planning for LRASM OT&E. Continue RCI-4 efforts for SRL improvements and ASW Enhancements. Complete RCI-5 analysis for survivability improvements/kill chain gap analysis.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircraft (MMA) (P-8A)		Project (Number/Name) 3368 / P-8 Improvements		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Commence RCI-5 development efforts for analysis and hardware/software integration of preferred survivability solution onto the P-8A weapons system. Perform early activities in support of planned ASW improvements to support theater ASW common operational picture enhancements.  <b>FY 2024 Base Plans:</b> Continue to develop RCI packages and rapid/urgent development efforts to incrementally incorporate software and hardware capability improvements, building on the P-8A Baseline to ensure ongoing relevance of the P-8A capability. Continue LRASM efforts to include analysis of airworthiness data to support fleet flight clearance, software development and platform integration efforts, continue flight test for integrated LRASM capabilities, and complete test planning for LRASM OT&E. Continue RCI-4 efforts for ASW enhancements. Complete RCI-5 analysis for survivability improvements (RFCM)/kill chain gap analysis. Continue RCI-5 development efforts for analysis and hardware/software integration of preferred survivability solution onto the P-8A weapons system.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The decrease of \$2.047 Million from FY 2023 to FY 2024 is associated with re-routing of funds to support funding of higher priority Navy requirements.						
Title: Conduct technical, cost, risk, test, and logistics analysis of proposed technologies  <b>Articles:</b>		6.093 -	4.463 -	4.598 -	0.000 -	4.598 -
FY 2023 Plans: Conduct technical, cost, risk and logistics analysis of proposed technologies. Evaluate system requirements through cost/performance trade-off analysis. Continue technical execution of LRASM government-led flight test and post-test analysis.  <b>FY 2024 Base Plans:</b> Conduct technical, cost, risk and logistics analysis of proposed technologies. Evaluate system requirements through cost/performance trade-off analysis. Continue technical execution of LRASM government-led flight test and post-test analysis. Begin technical execution of RCI-4 and continue execution of RCI-5.  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircr aft (MMA) (P-8A)				Project (Number/Name) 3368 / P-8 Improvements					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
The increase of \$0.135 Million from FY 2023 to FY 2024 is associated with commencement of RCI-4 activities and personnel support to oversee execution of RCI-5 technical requirements.													
Accomplishments/Planned Programs Subtotals									28.842	37.939	36.027	0.000	36.027
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• APN/0586: P-8 Series	115.940	241.987	316.168	-	316.168	373.473	320.378	378.212	439.534	2,891.385	5,392.973		
Remarks													
Procurement dollars reflected in Other Program Funding Summary reflects the total of that BLI. Only a portion of the funds are associated with PU 3368.													
D. Acquisition Strategy													
The P-8A acquisition strategy is designed to deliver the required capabilities while introducing additional competition throughout the program. Government Lead Capability Integrator (LCI) control over the designs and information promote cost-effectiveness, rapid capability fielding, and reduced acquisition and life-cycle costs. Additionally, technologies for P-8 modernization improvements are compartmentalized and delivered independently of one another as a series of ECPs, without risk to the overall program schedule or procurement cost. This tailoring approach is effective in accommodating an emergent Fleet requirement and serve as an example that the flexibility inherent in this ECP-based Acquisition Strategy is responsive to Fleet customer concerns.													
The P-8A Acquisition Strategy (AS), first approved by the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) at Milestone B in 2004, establishes the strategy to deliver full P-8A capability via three increments (then Block 1, Spiral 1 and Spiral 2 and now called Increments 1, 2, and 3). Increment 1 (Block 1) provided persistent ASW, ASuW, and ISR. Increment 2 (Spiral 1) provided improved ASW capabilities via multiple ECPs. On 4 April 2016, the MDA (USD AT&L) approved the incorporation of Increment 3 (Spiral 2 - under PE 0605504N) communications, Combat Systems Architecture, ASW Signals Intelligence, ASuW Net Enabled Weapon, Wideband SATCOM, Higher than Secret security enclave and Enhanced Multi-static Active Coherent (MAC-E) as ECPs (ECP 4-7) within the existing P-8A program as defined in the approved AS. RCI, rapid development, and future emergent capabilities will continue to be developed in an evolutionary manner similar to Increments 1-3 ECPs. Work is not initiated under this incremental acquisition process until the capabilities are first approved in P-8A Joint Capabilities Integration and Development System (JCIDS) documentation or the Navy's I&I CPP, approval obtained through an OPNAV Configuration Steering Board (CSB) and the phase of work approved by the Milestone Decision Authority (MDA). On 10 May 2016, P-8A was redesignated an ACAT 1C program and the MDA assigned to the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN (RDA)).													

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircr aft (MMA) (P-8A)				Project (Number/Name) 3368 / P-8 Improvements					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HW/SW Dev - P-8 Improvements/Increased Capability	Various	Various : Various	3.517	2.000	Mar 2022	4.150	Feb 2023	0.000		-		0.000	0.000	9.667	-
Primary HW/SW Dev - ASW Enhancements	Various	Various : Various	6.123	1.217	Feb 2022	1.301	Feb 2023	0.591	Feb 2024	-		0.591	0.000	9.232	-
Primary SW Dev - LRASM	Various	Boeing : Seattle, WA	17.582	12.682	Dec 2021	9.461	Dec 2022	15.199	Dec 2023	-		15.199	30.923	85.847	-
Primary HW/SW Dev - RCI	Various	Various : Various	4.000	4.451	Dec 2021	16.011	Dec 2022	13.236	Dec 2023	-		13.236	Continuing	Continuing	Continuing
Sys Eng - Gov	WR	NAWCAD : Pax River, MD	7.692	2.399	Nov 2021	2.553	Nov 2022	2.403	Nov 2023	-		2.403	Continuing	Continuing	Continuing
Prior Year Prd Dev costs no longer funded in the FYDP	Various	Various : Various	31.742	0.000		0.000		0.000		-		0.000	0.000	31.742	-
Subtotal			70.656	22.749		33.476		31.429		-		31.429	Continuing	Continuing	N/A
Remarks RCI-5 (RFCM) contract award occurs in FY 2023 to begin hardware and software development.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	0.000	5.359	Jan 2022	3.817	Dec 2022	4.008	Dec 2023	-		4.008	Continuing	Continuing	Continuing
Subtotal			0.000	5.359		3.817		4.008		-		4.008	Continuing	Continuing	N/A
Remarks Technical execution of LRASM government-led flight test and post-test analysis.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircraft (MMA) (P-8A)						Project (Number/Name) 3368 / P-8 Improvements			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Eng Tech Serv (NON-FFRDC)	Various	Various : Various	1.498	0.000		0.000		0.000		-		0.000	0.984	2.482	-
Mgmt Support Serv	C/CPFF	RBC : Alexandria, VA	1.651	0.500	Nov 2021	0.416	Nov 2022	0.380	Nov 2023	-		0.380	Continuing	Continuing	Continuing
Program Mgmt Support	WR	NAWCAD : Pax River, MD	2.083	0.234	Nov 2021	0.230	Nov 2022	0.210	Nov 2023	-		0.210	Continuing	Continuing	Continuing
Subtotal			5.232	0.734		0.646		0.590		-		0.590	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			75.888	28.842		37.939		36.027		-		36.027	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

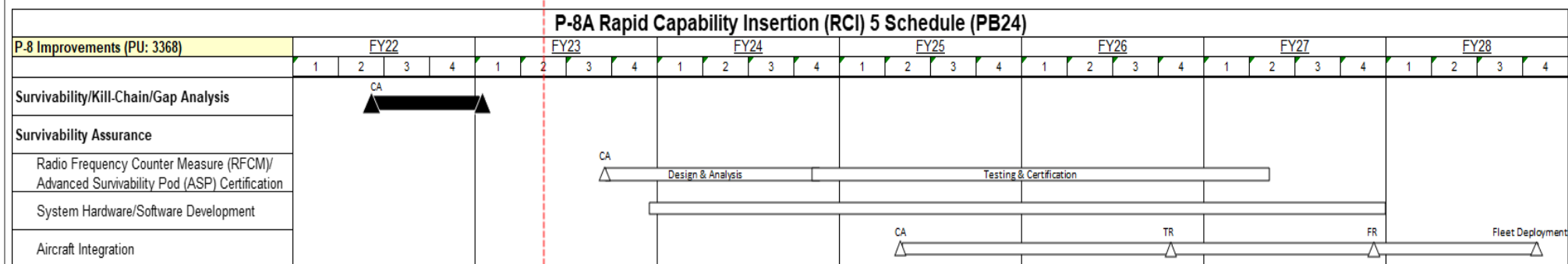
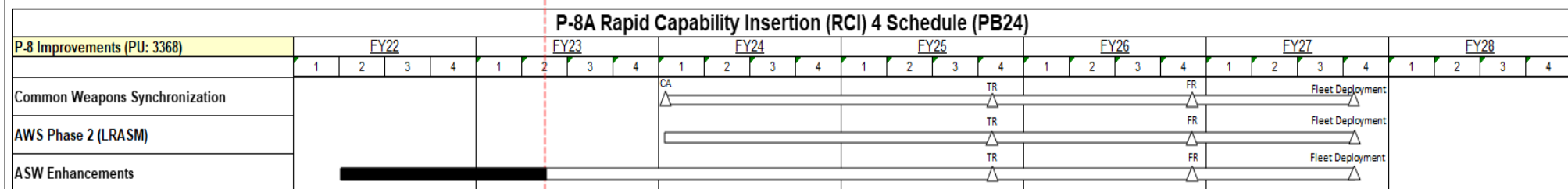
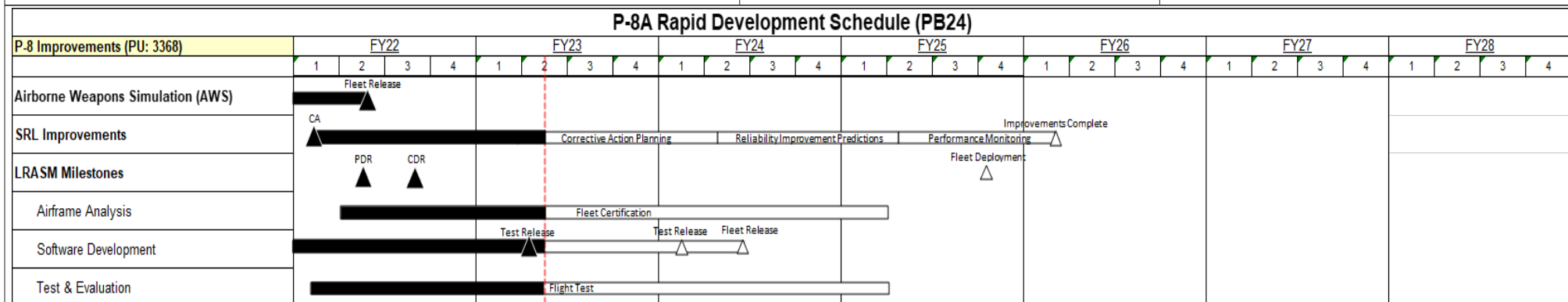
1319 / 5

R-1 Program Element (Number/Name)

PE 0605500N / Multi-Mission Maritime Aircraft (MMA) (P-8A)

Project (Number/Name)

3368 / P-8 Improvements



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605500N / <i>Multi-Mission Maritime Aircraft (MMA) (P-8A)</i>	<b>Project (Number/Name)</b> 3368 / <i>P-8 Improvements</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>P-8 Improvements</i></b>				
Rapid Development: Airborne Weapons Simulator: Fleet Release	1	2022	2	2022
Rapid Development: SRL Improvements: Contract Award	1	2022	1	2022
Rapid Development: SRL Improvements: Development	1	2022	1	2025
Rapid Development: SRL Improvements: Improvements Complete	1	2026	1	2026
Rapid Development: LRASM: Fleet Certification	2	2022	2	2025
Rapid Development: LRASM: Software Development	1	2022	2	2024
Rapid Development: LRASM: Test Release.1	2	2023	2	2023
Rapid Development: LRASM: Test Release.2	1	2024	1	2024
Rapid Development: LRASM: Fleet Release	2	2024	2	2024
Rapid Development: LRASM: Flight Test	1	2022	1	2025
Rapid Development: LRASM: Fleet Deployment	4	2025	4	2025
RCI4: Common Weapons Synchronization: Contract Award	1	2024	1	2024
RCI4: Common Weapons Synchronization: Development	1	2024	4	2027
RCI4: Common Weapons Synchronization: Test Release	4	2025	4	2025
RCI4: Common Weapons Synchronization: Fleet Release	4	2026	4	2026
RCI4: Common Weapons Synchronization: Fleet Deployment	4	2027	4	2027
RCI4: ASW Phase 2: Development	1	2024	4	2027
RCI4: ASW Phase 2: Test Release	4	2025	4	2025
RCI4: ASW Phase 2: Fleet Release	4	2026	4	2026
RCI4: ASW Phase 2: Fleet Deployment	4	2027	4	2027
RCI4: ASW Enhancements: Development	2	2022	4	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605500N / Multi-Mission Maritime Aircraft (MMA) (P-8A)		Project (Number/Name) 3368 / P-8 Improvements	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
RCI4: ASW Enhancements: Test Release		4	2025	4	2025
RCI4: ASW Enhancements: Fleet Release		4	2026	4	2026
RCI4: ASW Enhancements: Fleet Deployment		4	2027	4	2027
RCI5: Radio Frequency Counter Measure (RFCM)/Advanced Survivability Pod (ASP) Certification: Contract Award		2	2022	2	2022
RCI5: Radio Frequency Counter Measure (RFCM)/Advanced Survivability Pod (ASP) Certification: Analysis		2	2022	1	2023
RCI5: Survivability Assurance: Contract Award		3	2023	3	2023
RCI5: Survivability Assurance: Design & Analysis		3	2023	3	2024
RCI5: Survivability Assurance: Testing & Certification		4	2024	2	2027
RCI5: Survivability Assurance: Hardware & Software Development		3	2023	4	2027
RCI5: Survivability Assurance: Aircraft Integration Contract Award		2	2025	2	2025
RCI5: Survivability Assurance: Aircraft Integration		2	2025	4	2028
RCI5: Survivability Assurance: Test Release		4	2026	4	2026
RCI5: Survivability Assurance: Fleet Release		4	2027	4	2027
RCI5: Survivability Assurance: Fleet Deployment		4	2028	4	2028



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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605504N I Multi-Mission Maritime (MMA) Inc III							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	781.864	157.793	161.697	132.449	-	132.449	113.278	88.165	58.534	24.806	0.000	1,518.586
3218: P-8A Spiral 2 Development	781.864	157.793	161.697	132.449	-	132.449	113.278	88.165	58.534	24.806	0.000	1,518.586
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 334												
A. Mission Description and Budget Item Justification The P-8A Increment 3 program consists of incremental enhancement Engineering Change Proposals (ECPs) to system capabilities that will retain cost-wise effectiveness for major combat operations. Increment 3 will incorporate improvements to aircraft systems including significant war-altering Anti-Submarine Warfare (ASW) capabilities of Enhanced Multi-Static Active Coherent (MAC-E) and ASW Signal Intelligence (SIGINT) which are enabled by the incorporation of Combat System hardware and architecture improvements, ASW and Anti-Surface Warfare (ASuW) sensor improvements, communication capability upgrades, ASuW Net Enabled Weapon (NEW), Higher-Than-Secret (HTS) security capability, and associated pre/post-flight ground system development to support Increment 3 aircraft and Increment 3 ground system requirements.  These capabilities will be developed as a series of ECPs for the P-8A and are as follows: - ECP 6 - ASW SIGINT, Anti-Submarine Warfare (ASW) capability, Wide Band SATCOM, Higher Than Secret (HTS) processing, Enhanced track management (Minotaur), Applications Based Architecture (ABA) and Combat System. - ECP 7 - Enhanced Multi-Static Active Coherent (MAC-E). - Pre/Post-Flight Ground System Development - System upgrades to the associated ground support system and Operations Center (TOC)/Aircraft Media Gateway (AMG) systems.  To expedite fielding of the ASW critical capability to the P-8A Fleet, ECP 6 and ECP 7 software are being integrated concurrently on to the platform. ECP 7 is reliant on ECP 6's Combat System hardware and architecture to operate on the P-8A. ECP 6 integration activities began in FY 2019 with initiation of the Government Lead Capability Integrator (LCI) integration and award of the Platform Integration (PI) contract to Boeing. ECP 7 integration activities began in FY 2021. ECP 6/7 Integrated Flight Test & Evaluation began 3Q FY 2022. Enhanced MAC-E (ECP 7) is developed within Program Element (PE) 0604261N and integrated via the Platform Integration contract within this PE.  JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes requirements identified under the baseline P-8 program between Milestone B and the Full Rate Production Decision (FRPD). Subsequent to the P-8 FRPD, the DoD Acquisition Authority directed in 2016 these Increment 3 requirements be satisfied as Engineering Change Proposals (ECPs) under the existing P-8 program vice under a separate acquisition program.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605504N I Multi-Mission Maritime (MMA) Inc III			
Note: ECP 6/7 fielding in 1Q FY 2026 includes 7 aircraft (1 squadron) modified, trained and ready to deploy to include pre/post-flight ground systems.					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	162.884	161.697	133.497	-	133.497
Current President's Budget	157.793	161.697	132.449	-	132.449
Total Adjustments	-5.091	0.000	-1.048	-	-1.048
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.091	0.000			
• Program Adjustments	0.000	0.000	-1.350	-	-1.350
• Rate/Misc Adjustments	0.000	0.000	0.302	-	0.302
Change Summary Explanation					
FY 2024 funding decrease to due to progression from development into Integrated Flight Test & Evaluation and for working capital fund rate adjustments.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605504N / Multi-Mission Maritime (MM A) Inc III				Project (Number/Name) 3218 / P-8A Spiral 2 Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3218: P-8A Spiral 2 Development	781.864	157.793	161.697	132.449	-	132.449	113.278	88.165	58.534	24.806	0.000	1,518.586
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 334												

**A. Mission Description and Budget Item Justification**

The P-8A Increment 3 program consists of incremental enhancement Engineering Change Proposals (ECPs) to system capabilities that will retain cost-wise effectiveness for major combat operations. Increment 3 will incorporate improvements to aircraft systems including significant war-altering Anti-Submarine Warfare (ASW) capabilities of Enhanced Multi-Static Active Coherent (MAC-E) and ASW Signal Intelligence (SIGINT) which are enabled by the incorporation of Combat System hardware and architecture improvements, ASW and Anti-Surface Warfare (ASuW) sensor improvements, communication capability upgrades, ASuW Net Enabled Weapon (NEW), Higher-Than-Secret (HTS) security capability, and associated pre/post-flight ground system development to support Increment 3 aircraft and Increment 3 ground system requirements.

These capabilities will be developed as a series of ECPs for the P-8A and are as follows:

- ECP 6 - ASW SIGINT, Anti-Submarine Warfare (ASW) capability, Wide Band SATCOM, Higher Than Secret (HTS) processing, Enhanced track management (Minotaur), Applications Based Architecture (ABA) and Combat System.
- ECP 7 - Enhanced Multi-Static Active Coherent (MAC-E).
- Pre/Post-Flight Ground System Development - System upgrades to the associated ground support system and Tactical Operations Center (TOC)/Aircraft Media Gateway (AMG) systems.

To expedite fielding of the ASW critical capability to the P-8A Fleet, ECP 6 and ECP 7 software are being integrated concurrently on to the platform. ECP 7 is reliant on ECP 6's Combat System hardware and architecture to operate on the P-8A. ECP 6 integration activities began in FY 2019 with initiation of the Government Lead Capability Integrator (LCI) integration and award of the Platform Integration (PI) contract to Boeing. ECP 7 integration activities began in FY 2021. ECP 6/7 Integrated Flight Test & Evaluation began 3Q FY 2022. Enhanced MAC-E (ECP 7) is developed within Program Element (PE) 0604261N and integrated via the Platform Integration contract within this PE.

Note: ECP 6/7 fielding in 1Q FY 2026 includes 7 aircraft (1 squadron) modified, trained and ready to deploy to include pre/post-flight ground systems.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Product Development	143.449	134.712	111.964	0.000	111.964
<b>Articles:</b>	-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605504N / Multi-Mission Maritime (MM A) Inc III		Project (Number/Name) 3218 / P-8A Spiral 2 Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>FY 2023 Plans:</b> Continue ECP 6 and ECP 7 integration on the PI contract. Continue Government-led LCI efforts, associated ground support system development, test planning, TOC/AMG systems, training systems upgrades, and Integrated Flight Test and Evaluation efforts.						
<b>FY 2024 Base Plans:</b> Continue ECP 6 and ECP 7 integration on the PI contract. Continue Government-led LCI efforts, associated ground support system development, test planning, TOC/AMG systems, training systems upgrades, and Integrated Flight Test and Evaluation efforts.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY 2024 decrease of \$22.748 Million due to progression from development into Integrated Flight Test & Evaluation.						
<b>Title:</b> Support/Test & Evaluation/Management Services <div>Articles:</div>		14.344 -	26.985 -	20.485 -	0.000 -	20.485 -
<b>FY 2023 Plans:</b> Continue associated in-house government LCI/T&E/management activities. Continue associated ground support system development, training systems upgrades, operational testing, and Integrated Flight Test and Evaluation efforts.						
<b>FY 2024 Base Plans:</b> Continue associated in-house government LCI/T&E/management activities. Continue associated ground support system development, training systems upgrades, operational testing, and Integrated Flight Test and Evaluation efforts.						
<b>FY 2024 OCO Plans:</b> N/A						
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> FY 2024 decrease of \$6.50 Million due to progression from development into Integrated Flight Test & Evaluation.						
Accomplishments/Planned Programs Subtotals		157.793	161.697	132.449	0.000	132.449

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605504N / Multi-Mission Maritime (MM A) Inc III				Project (Number/Name) 3218 / P-8A Spiral 2 Development			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0586: P-8 Series	115.940	241.987	316.168	-	316.168	373.473	320.378	378.212	439.534	2,891.385	5,392.973
• OPN/2906: Tactical/ Mobile C4I Systems	18.790	27.434	52.026	-	52.026	65.664	71.364	61.095	62.492	Continuing	Continuing
Remarks											
Procurement dollars reflected in Other Program Funding Summary reflects the total of each of those BLIs. Only a portion of the funds are associated with PU 3218.											
D. Acquisition Strategy											
The P-8A acquisition strategy is designed to deliver the required capabilities while introducing additional competition throughout the program. Government Lead Capability Integrator (LCI) control over the designs and information promote cost-effectiveness, rapid capability fielding, and reduced acquisition and life-cycle costs. Additionally, technologies for P-8 modernization improvements are compartmentalized and delivered independently of one another as a series of ECPs, without risk to the overall program schedule or procurement cost. This tailoring approach is effective in accommodating an emergent Fleet requirement and serve as an example that the flexibility inherent in this ECP-based Acquisition Strategy is responsive to Fleet customer concerns.											
The P-8A Acquisition Strategy (AS), first approved by the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) at Milestone B in 2004, establishes the strategy to deliver full P-8A capability via three increments (then Block 1, Spiral 1 and Spiral 2 and now called Increments 1, 2, and 3). Increment 1 (Block 1 under PE 0605500N) provided persistent ASW, ASuW, and ISR. Increment 2 (Spiral 1 under PE 0605500N) provided improved ASW capabilities via multiple ECPs. On 4 April 2016, the MDA (USD AT&L) approved the incorporation of Increment 3 (Spiral 2) communications, Combat Systems Architecture, ASW Signals Intelligence, ASuW Net Enabled Weapon, Wideband SATCOM, Higher than Secret security enclave and Enhanced Multi-static Active Coherent (MAC-E) as ECPs (ECP 4-7) within the existing P-8A program as defined in the approved AS.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605504N / Multi-Mission Maritime (MM A) / Inc III				Project (Number/Name) 3218 / P-8A Spiral 2 Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HW Dev - Trainer Dev & Integration	Various	Boeing : St. Louis, MO	17.089	15.000	Feb 2022	20.000	Feb 2023	37.000	Feb 2024	-		37.000	86.000	175.089	-
Primary HW Dev - Combat Systems Hardware Effort	Various	NSWC : Crane, IN	119.309	3.748	Nov 2022	0.000		0.000		-		0.000	0.000	123.057	-
Primary HW Dev - Platform Integration	Various	Boeing : Seattle, WA	157.691	57.760	Oct 2021	52.095	Oct 2022	35.060	Oct 2023	-		35.060	60.500	363.106	-
ECP6/7 Pre/Post Flight Ground System Development Activities	Various	Various : Various	7.900	10.300	Feb 2022	12.500	Feb 2023	9.400	Feb 2024	-		9.400	1.500	41.600	-
LCI Development & Integration/Correction of Deficiencies	Various	Various : Various	142.203	47.596	Oct 2021	39.338	Oct 2022	21.172	Oct 2023	-		21.172	55.644	305.953	-
Sys Eng (gov)	WR	NAWC AD : Pax River, MD	76.809	9.045	Nov 2021	10.780	Nov 2022	9.332	Nov 2023	-		9.332	21.983	127.949	-
Prior Year Prd Dev costs no longer funded in the FYDP	Various	Various : Various	221.059	0.000		0.000		0.000		-		0.000	0.000	221.059	-
Subtotal			742.060	143.449		134.713		111.964		-		111.964	225.627	1,357.813	N/A
Remarks															
Trainer Development & Integration increased from \$20.0 million in FY 2023 to \$37.0 million in FY 2024 due to increased planned development and integration activities in support of Fleet ECP 6/7 transition and training requirements necessary to achieve IOC.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Sup	Various	Various : Various	2.950	0.918	Nov 2021	0.918	Nov 2022	0.000		-		0.000	0.000	4.786	-
Studies & Analysis	Various	JHU : Pax River, MD	11.946	0.000		0.000		0.000		-		0.000	0.000	11.946	-
Subtotal			14.896	0.918		0.918		0.000		-		0.000	0.000	16.732	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605504N / Multi-Mission Maritime (MM A) Inc III						Project (Number/Name) 3218 / P-8A Spiral 2 Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Developmental Test & Evaluation (DT&E)	WR	NAWC AD : Pax River, MD	17.947	11.809	Nov 2021	22.106	Nov 2022	15.735	Nov 2023	-		15.735	45.906	113.503	-		
Operational Test & Evaluation (OT&E)	WR	NAWC AD : Pax River, MD	0.000	0.540	Nov 2021	2.283	Nov 2022	3.750	Nov 2023	-		3.750	10.250	16.823	-		
Subtotal			17.947	12.349		24.389		19.485		-		19.485	56.156	130.326	N/A		
Remarks Four cost categories have been realigned to two categories to align with OSD guidance.																	
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Eng Tech Serv (NON-FFRDC)	Various	Various : Various	1.109	0.000		0.000		0.000		-		0.000	0.000	1.109	-		
Mgmt Suppt Serv (NON-FFRDC)	Various	RBC : Alexandria, VA	3.856	0.977	Nov 2021	1.377	Nov 2022	0.700	Nov 2023	-		0.700	2.100	9.010	-		
Program Mgmt Support	WR	NAWC AD : Pax River, MD	1.906	0.000		0.200	Nov 2022	0.200	Nov 2023	-		0.200	0.600	2.906	-		
Travel	Allot	NAWC AD : Pax River, MD	0.090	0.100	Nov 2021	0.100	Nov 2022	0.100	Nov 2023	-		0.100	0.300	0.690	-		
Subtotal			6.961	1.077		1.677		1.000		-		1.000	3.000	13.715	N/A		
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			781.864	157.793		161.697		132.449		-		132.449	284.783	1,518.586	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

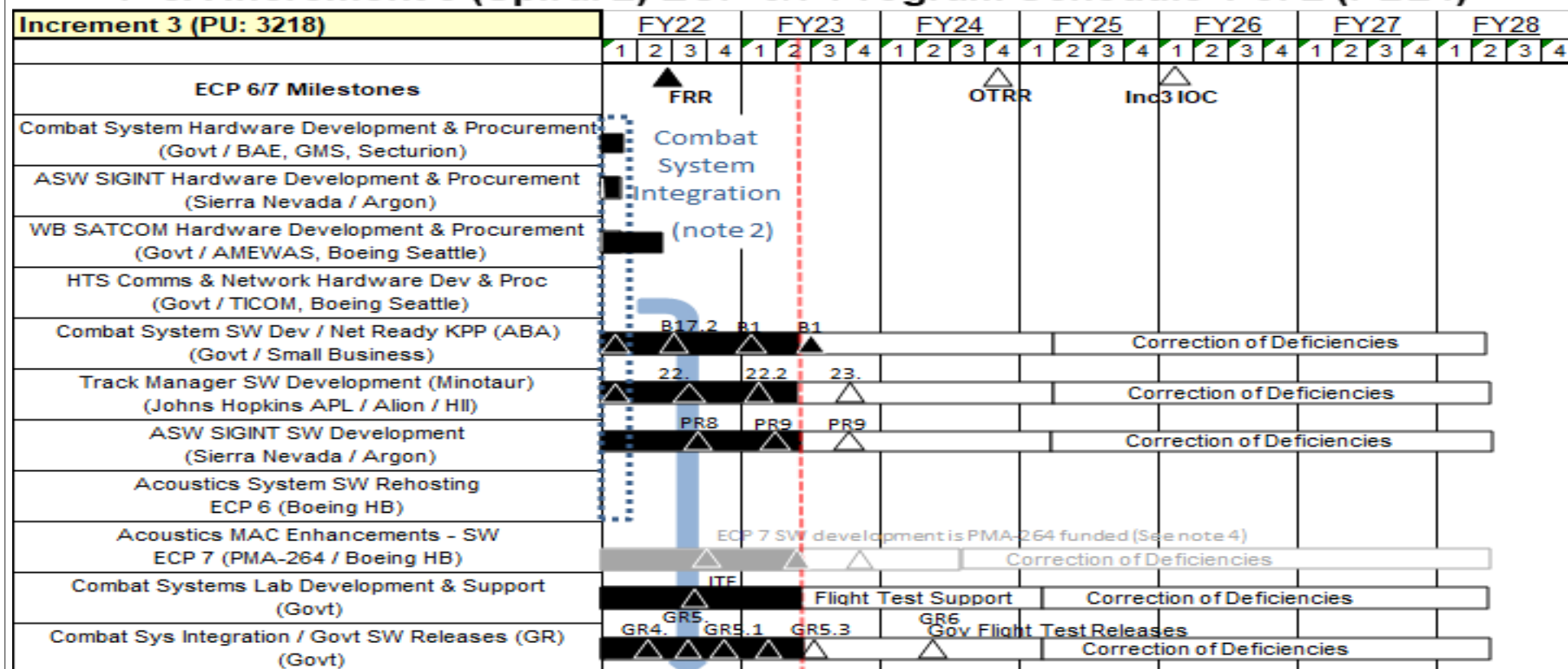
R-1 Program Element (Number/Name)

PE 0605504N / Multi-Mission Maritime (MM A) Inc III

Project (Number/Name)

3218 / P-8A Spiral 2 Development

**P-8A Increment 3 (Spiral 2) ECP-6/7 Program Schedule 1 of 2 (PB24)**



Notes: (1) Subsystem efforts continue to support integration and test through deficiency correction  
 (2) Combat sys integration includes Govt-led efforts for software, hardware, aircraft integration, deficiency correction  
 (3) Mission system integration includes Boeing efforts for software, hardware, aircraft integration, deficiency correction  
 (4) PMA-264 Acoustic Sensor PE (0604216N) funds ECP 7 dev/test costs unique to ECP 7 (grayed out above)



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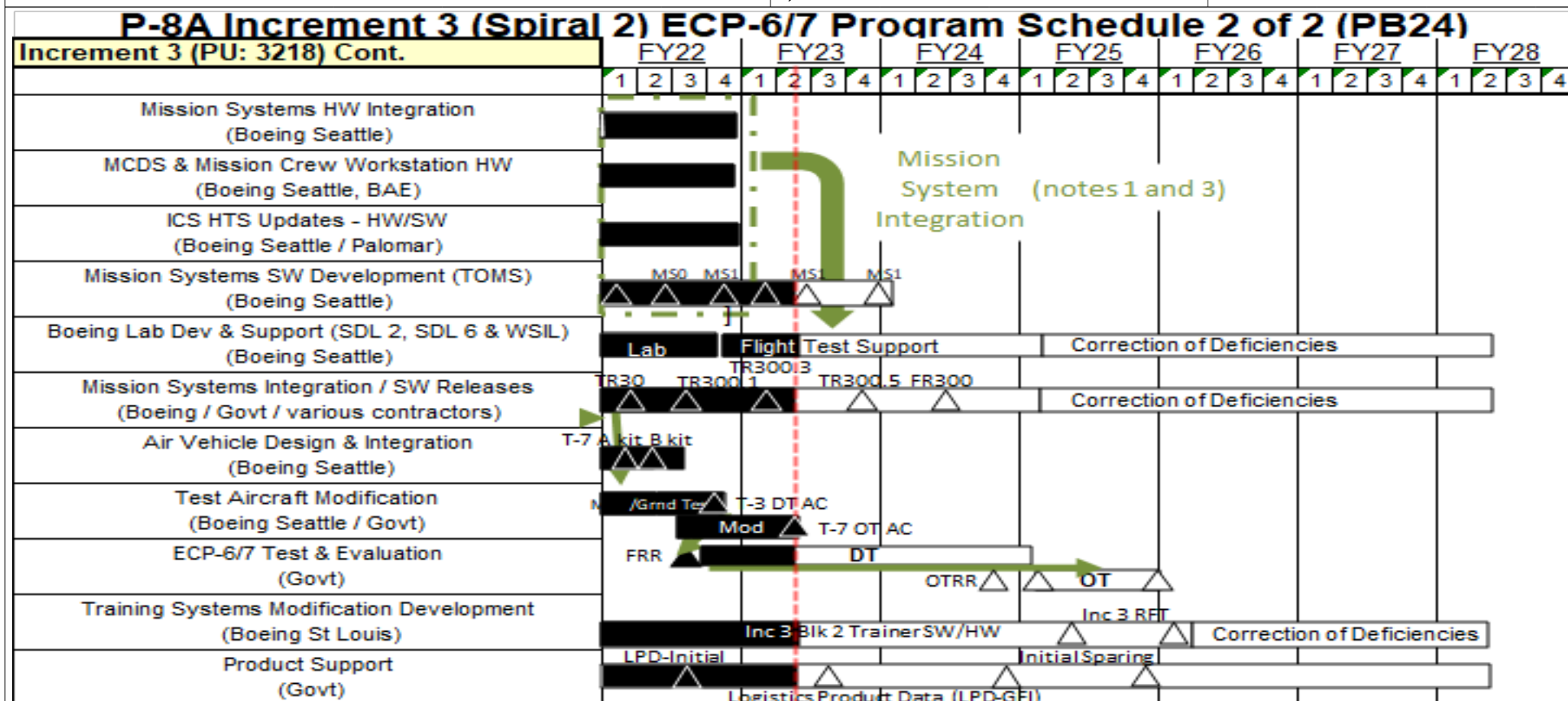
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

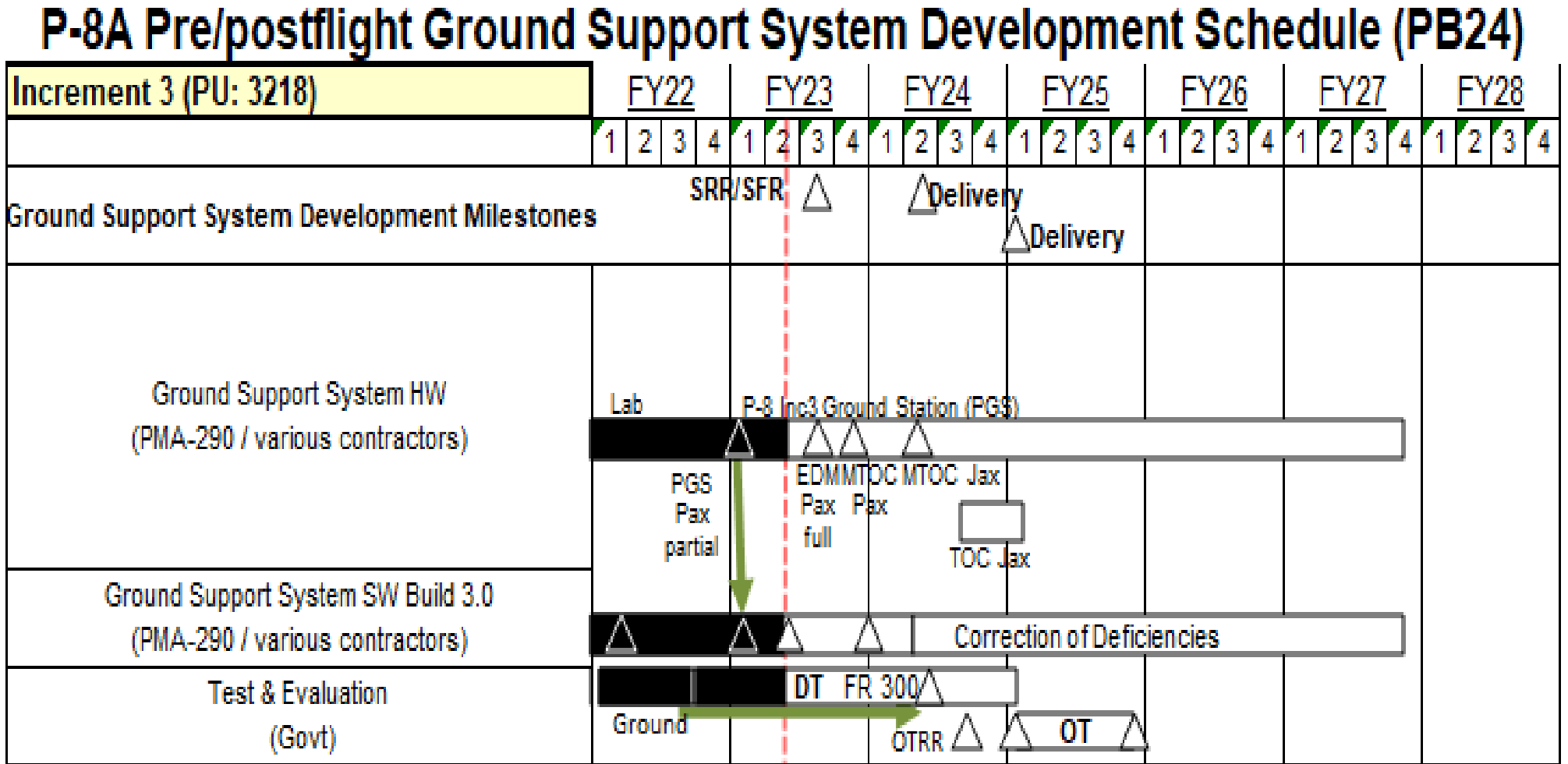
R-1 Program Element (Number/Name)  
PE 0605504N / Multi-Mission Maritime (MM  
A) Inc III

Project (Number/Name)  
3218 / P-8A Spiral 2 Development



- Notes: (1) Subsystem efforts continue to support integration and test through deficiency correction  
 (2) Combat sys integration includes Govt-led efforts for software, hardware, aircraft integration, deficiency correction  
 (3) Mission system integration includes Boeing efforts for software, hardware, aircraft integration, deficiency correction  
 (4) PMA-264 Acoustic Sensor PE (0604216N) funds ECP 7 dev/test costs unique to ECP 7 (grayed out above)

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605504N / Multi-Mission Maritime (MM A) Inc III		Project (Number/Name) 3218 / P-8A Spiral 2 Development	



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0605504N / Multi-Mission Maritime (MM A) Inc III

Project (Number/Name)

3218 / P-8A Spiral 2 Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>ECP-6/7</b>				
ECP-6/7: Milestones: FRR	2	2022	2	2022
ECP-6/7: Milestones: OTRR	4	2024	4	2024
ECP-6/7: Milestones: INC3 IOC	1	2026	1	2026
ECP-6/7: Combat System / Mission System Integration: ECP-6/7 Integration	1	2022	2	2025
ECP-6/7: Integrated Flight Test & Evaluation: ECP-6/7 T&E	3	2022	4	2025
ECP-6/7: Correction of Deficiencies: Correction of Deficiencies	2	2025	2	2028
<b>Pre/Post-Flight Ground Support System Development</b>				
Ground Support System Development: Milestones: Ground Support System Hardware Development	1	2022	4	2027
Ground Support System Development: Milestones: Ground Support System Development DT	4	2022	1	2025
Ground Support System Development: Milestones: Ground Support System Development OT	4	2024	4	2025
Ground Support System Development: Correction of Deficiencies: Correction of Deficiencies	2	2024	4	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	255.970	71.237	91.501	103.236	-	103.236	60.456	45.290	3.569	2.990	Continuing	Continuing
0025: Amphibious Combat Vehicle Family of Vehicles	255.970	71.237	91.501	103.236	-	103.236	60.456	45.290	3.569	2.990	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): P472												
Note The program funding transitioned from Program Element 0603611M Marine Corps Assault Vehicles to Program Element 0605611M MC AVS Development and Demonstration as the program proceeds through the acquisition process.  In an Acquisition Decision Memorandum (ADM) dated 8 Jan 2019, ASN(RD&A) authorized the Program Executive Officer, Land Systems (PEOLS) to combine the Amphibious Combat Vehicle (ACV) 1.1 and ACV 1.2 programs into a single ACV Family of Vehicles (FOV) that continues the phased development and procurement approach. Accordingly, program resources for the merged program will be depicted in Project Unit 0025 for FY 2021 and beyond and program resources budgeted for ACV 1.2 in fiscal years FY 2019 through FY 2020 will continue to be shown in Project Unit 0026. In an ADM dated 12 Jul 2019, ASN(RD&A) authorized a third lot of LRIP consisting of 56 vehicles and directed that acquisition documentation reflecting this change should be updated as part of the Full Rate Production (FRP) Milestone Decision approval process.												
A. Mission Description and Budget Item Justification This is a CMC Force Design program. ACV provides protected mobility to otherwise dismounted infantry formations and enables littoral maneuver from ship-to-shore and from shore-to-shore. Equipped with modern communications systems and weapons for infantry support-by-fire, the ACV significantly improves the ability of Fleet Marine Forces to access, seize, and hold key maritime terrain in the execution of Expeditionary Advanced Base Operations. The Amphibious Combat Vehicle is imperative to realizing Marine Corps requirements for Fleet Marine Force 2030. The capability to project power from the sea ensures joint freedom of maneuver against increasingly sophisticated area denial and anti-access strategies across the range of military operations in areas vital to our national interest. To this end, an ACV creates operational and tactical options through rapid maneuver on sea and land, provides for the seamless transition of combat power from sea to land, enables rapid response to crisis, enables the introduction of joint follow-on forces and can impose disproportionate costs on our enemies who must extend their defenses. This program has delivered the initial capability of Personnel variants (ACV-Ps) in Nov 2020 and is on track to deliver the initial capability of Command variants (ACV-Cs) in 2Q FY 2024, Improved Lethality variants (ACV-30s) in 3Q FY 2026, and Recovery variants (ACV-Rs) in 1Q FY 2028.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0605611M / MC AVS Development & Demonstration			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	73.709	94.569	69.361	-	69.361
Current President's Budget	71.237	91.501	103.236	-	103.236
Total Adjustments	-2.472	-3.068	33.875	-	33.875
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.068			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.472	0.000			
• Program Adjustments	0.000	0.000	33.792	-	33.792
• Rate/Misc Adjustments	0.000	0.000	0.083	-	0.083
<b>Change Summary Explanation</b>					
The project level increase from FY 2023 to FY 2024 of \$11.735M is primarily attributed to the increase of initiating ACV-R Phase II Design activities in FY 2024 while simultaneously completing ACV-30 Phase IV efforts. Year-to-year changes by cost element are explained in greater detail in the R-2A and R-3.					
FY 2024 full funding supports the program ability to perform the following:					
- Complete ACV-30 Phase IV design efforts plus DT&E, OT&E, and LFT&E for the ACV-30 variant so that production may begin in FY 2025 for ACV-30; complete FY 2024 funding request ensures there is not a production gap between FY 2024 and FY 2025 because ACV-30 is the only variant produced in FY 2025;					
- Initiate and Complete the ACV-30 Contractor and Government Only Logistics Demonstrations;					
- Initiate ACV-R Phase II design and development activities during PRTV build, including incremental funding for the order of three (3) ACV-R Production Representative Test Vehicles (PRTVs) which will be ordered in FY 2024 and initiate prime contractor test support efforts for test preparation and planning;					
- Initiate test preparation and planning efforts for DT&E and LFT&E for ACV-R variant.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0025: Amphibious Combat Vehicle Family of Vehicles	255.970	71.237	91.501	103.236	-	103.236	60.456	45.290	3.569	2.990	Continuing	Continuing
Quantity of RDT&E Articles		3	-	3	-	3	-	-	-	-		
Project MDAP/MAIS Code: P472												
A. Mission Description and Budget Item Justification												
<p>This is a CMC Force Design program. The Amphibious Combat Vehicle (ACV) replaces the legacy Assault Amphibious Vehicle (AAV) battalions within the Marine Divisions. ACV-equipped Amphibious Assault (AA) companies will provide protected mobility and general support lift to elements of Marine Infantry Battalions. The ACV, an advanced generation, eight-wheeled armored personnel carrier, will mitigate current and projected capability gaps by providing improved lethality against dismounted enemy troops, more effective land and water tactical mobility, and increased force protection and survivability from blast, fragmentation, and kinetic energy threats.</p> <p>ACV was structured to be executed in multiple increments, with the first increment designed to provide an initial operational capability of personnel carriers (ACV-P). Subsequent increments were planned to provide additional personnel carriers and to develop Mission Role Variants (MRVs), such as command and control (ACV-C), improved lethality (ACV-30), and tactical recovery capabilities (ACV-R). In an Acquisition Decision Memorandum (ADM) dated 8 Jan 2019, ASN(RD&amp;A) authorized the program office to combine the ACV 1.1 and ACV 1.2 programs into a single ACV Family of Vehicles (FOV) that continues the phased development and procurement approach.</p>												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Title: Product Development  Articles:  Description: System Design and Development; Engineering and Manufacturing Development (EMD) test vehicle manufacturing; prime contractor Developmental and Operational test support, and development of Logistics Management Information (LMI) data.  FY 2023 Plans: - Complete build of three (3) ACV-30 PRTVs. - Initiate ACV-30 prime contractor test support planning and preparation activities. - Complete ACV-R Phase I design and development activities. - Initiate the order of ACV-R long lead materials.							65.229	75.575	88.620	0.000	88.620	
							3	-	3	-	3	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration		Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue integration and system check-out activities for Assured Position Navigation and Timing (APNT) systems.</p> <p><b>FY 2024 Base Plans:</b></p> <p>- Complete ACV-30 Phase IV design and development.</p> <p>- Continue ACV-30 prime contractor test support.</p> <p>- Initiate ACV-R Phase II design and development activities.</p> <p>- Initiate build of three (3) ACV-R PRTVs.</p> <p>- Initiate ACV-R prime contractor test support.</p> <p><b>FY 2024 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></p> <p>The increase in System Design and Development from FY 2023 to FY 2024 is primarily attributed to the increase of initiating ACV-R Phase II Design activities in FY 2024 while simultaneously completing ACV-30 Phase IV efforts. The primary focus in FY 2024 for ACV-30 includes completing Phase IV design and development post Critical Design Review (CDR) and continuing prime contractor test support; for ACV-R, the primary focus is initiating Phase II design and development activities during PRTV build, including incremental funding for the order of three (3) ACV-R PRTVs which will be ordered in FY 2024 and initiating prime contractor test support efforts for test preparation and planning. FY 2024 is a critical funding year to support development and design efforts outlined above and required to stay on the production schedule. To avoid a production break between FY 2024 and FY 2025, full funding in FY 2024 supports the program's ability to complete ACV-30 Phase IV design and development activities which are on the critical path to achieving production in FY 2025 (ACV-30 is the only variant produced that year), and initiating ACV-R Phase II efforts which are on the critical path to achieving production in FY 2026 (both ACV-30 and ACV-R are produced that year).</p>						
<p><b>Title:</b> Program Support</p> <p style="text-align: right;"><b>Articles:</b></p> <p><b>Description:</b> Government labor, material, and travel for Integrated Logistics Support, Technical Publications, Support Equipment development, In-house Technical Support, and Program Management Support.</p> <p><b>FY 2023 Plans:</b></p> <p>- Continue Engineering Support for communication suite integration efforts</p> <p>- Continue Remote Weapons Station/Common Remotely Operated Weapons Station (CROWS) support.</p>		3.365 -	7.830 -	4.044 -	0.000 -	4.044 -



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration		Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue Human Systems Integration (HSI) Support.</div> <div>- Continue ACV-30 government engineering and maintenance and technical support.</div> <div>- Continue Training Devices and Coordination analyses.</div> <div>- Continue Manpower and Personnel Training Support.</div> <div>- Initiate C2 Design Engineering and Integration for ACV-C Software Updates, ACV-C Software Production Kits, Cyber Security, and Licenses, and ACV-C Tech Refresh Hardware. These efforts will transition from RDT&amp;E to PMC in FY 2024 when ACV-Cs begin fielding.</div> <div>FY 2024 Base Plans:</div> <div>- Continue Engineering Support for communication suite integration efforts</div> <div>- Continue Remote Weapons Station/Common Remotely Operated Weapons Station (CROWS) support.</div> <div>- Continue Human Systems Integration (HSI) Support.</div> <div>- Continue ACV-30 government engineering and maintenance and technical support.</div> <div>- Continue Training Devices and Coordination analyses.</div> <div>- Initiate activities for ACV-30 Logistics Demonstration.</div> <div>FY 2024 OCO Plans:</div> <div>N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement:</div> <div>- The decrease in Program Support from FY 2023 to FY 2024 is primarily attributed to efforts transitioning from RDT&amp;E to the Procurement appropriation, now that the ACV-C variant is in fielding, including the following: Command &amp; Control (C2) engineering and integration efforts and software updates/hardware technology refresh efforts necessary to maintain the ACV Command-variant Authority to Operate (ATO).</div>						
Title: Test & Evaluation		2.049	7.410	8.693	0.000	8.693
Articles:		-	-	-	-	-
Description: Governmental Developmental Test & Evaluation (DT&E), Operational Test & Evaluation (OT&E), and Live Fire Test and Evaluation (LFT&E) activities.						
FY 2023 Plans:						
<div>- Initiate ACV-30 DT&amp;E test preparation and planning activities.</div> <div>- Initiate ACV-30 OT&amp;E test preparation and planning activities.</div>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration		Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Initiate ACV-30 LFT&amp;E test preparation and planning activities.</div> <div><b>FY 2024 Base Plans:</b><div>- Continue ACV-30 DT&amp;E activities.</div><div>- Continue ACV-30 OT&amp;E activities.</div><div>- Continue ACV-30 LFT&amp;E activities.</div><div>- Initiate ACV-R DT&amp;E test preparation and planning activities.</div><div>- Initiate ACV-R OT&amp;E test preparation and planning activities.</div><div>- Initiate ACV-R LFT&amp;E test preparation and planning activities.</div></div> <div><b>FY 2024 OCO Plans:</b><div>N/A</div></div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b><div>The increase in Test &amp; Evaluation from FY 2023 to FY 2024 is primarily attributed to the completing a majority of ACV-30 DT&amp;E/LFT&amp;E in FY 2024, and starting the relatively lower levels of ACV-R test planning and preparation efforts in FY 2024.</div></div>						
<div><b>Title:</b> Management Services</div> <div><b>Articles:</b></div> <div><b>Description:</b> Contract Advisory and Assistance Services (Engineering and Technical Support, Management Support Services, and Studies and Analyses) for all variants of ACV FOV.</div> <div><b>FY 2023 Plans:</b><div>- Continue force protection modeling and simulation activities for ACV-30.</div><div>- Initiate force protection modeling and simulation activities for ACV-R.</div><div>- Initiate engineering and drafting reviews for ACV-R.</div><div>- Continue hydrodynamic support.</div></div> <div><b>FY 2024 Base Plans:</b><div>- Continue force protection modeling and simulation activities for ACV-30.</div><div>- Continue force protection modeling and simulation activities for ACV-R.</div><div>- Continue engineering and drafting reviews for ACV-R.</div><div>- Continue hydrodynamic support.</div></div> <div><b>FY 2024 OCO Plans:</b></div>		0.594 -	0.686 -	1.879 -	0.000 -	1.879 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023				
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration					Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A														
FY 2023 to FY 2024 Increase/Decrease Statement: The increase in Management Services from FY 2023 to FY 2024 is primarily attributed to increased support required for ACV-R engineering and technical reviews leading up to the Engineering Change Proposal (ECP) approval for this variant in FY 2024.														
Accomplishments/Planned Programs Subtotals										71.237	91.501	103.236	0.000	103.236
C. Other Program Funding Summary (\$ in Millions)														
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost			
• PMC/2025: Amphibious Combat Vehicle Family of Vehicles	520.697	536.678	557.544	-	557.544	856.155	844.269	91.877	60.812	Continuing	Continuing			
• PMC/7000/ACV FoV: Spares and Repair Parts ACV FoV	25.534	20.127	20.657	-	20.657	21.102	21.476	0.000	0.000	Continuing	Continuing			
Remarks														
D. Acquisition Strategy														
The program office awarded two competitive Engineering and Manufacturing Development (EMD) contracts to two vendors to build 16 vehicles each (32 total). The program entered the acquisition cycle at Milestone B in FY 2016 and down-selected to one vendor at Milestone C in 3Q FY 2018; the program entered into Low Rate Initial Production (LRIP) at Milestone C with approval for two Lots of LRIP.														
In an Acquisition Decision Memorandum (ADM) dated 8 Jan 2019, ASN(RD&A) authorized the program office to combine the ACV 1.1 and ACV 1.2 programs into a single ACV Family of Vehicles (FOV) that continues the phased development and procurement approach.														
In an ADM dated 12 Jul 2019, ASN(RD&A) authorized a third lot of LRIP consisting of 56 vehicles and directed that acquisition documentation reflecting this change shall be updated as part of the Full Rate Production (FRP) Milestone Decision approval process. LRIP Lot 3 was broken into two lots (3A for 30 vehicles/3B for 26 vehicles) due to the Continuing Resolution. The production contract included competitively priced options for the development phase through FRP Lot 1.														
Initial Operational Test and Evaluation (IOT&E) commenced 3Q FY 2020 and completed in 4Q FY 2020. The Full Rate Production (FRP) decision scheduled for 4Q FY 2020 slipped 2 months due to COVID-19 impacts and completed in 1Q FY 2021; FRP Lot 1 awarded on schedule in 1Q FY 2021. Similar to LRIP Lot 3, FRP Lot 1 was broken into two lots (1A for 36 vehicles/1B for 36 vehicles) due to the Continuing Resolution. Preliminary Design Review (PDR) for ACV-30 completed in May 2021.														

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration	Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles
Beginning in FY 2022, the program is now beyond the competitively priced options for production which ended with FRP Lot 1 and had to negotiate additional priced options for FRP Lots 2-4 with the OEM. FRP Lot 2 was broken into three lots (2A for 33 ACV-P vehicles/2B for 36 ACV-P vehicles/2C for 14 ACV-C vehicles) due to the Continuing Resolution. Critical Design Review for ACV-30 completed 2Q FY 2022. Once design completes for ACV-R, additional options will be negotiated for production for FRP Lots 5-6. FRP Lot 3 was broken into three lots (3A for 30 ACV-P vehicles, 3B for 27 ACV-P vehicles, and 3C for 17 ACV-C vehicles) due to the Continuing Resolution.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Design & Development	C/FPIF	BAE Systems : Sterling Heights, MI/ York, PA	151.990	62.973	Jan 2022	73.912	Jan 2023	88.477	Jan 2024	-		88.477	Continuing	Continuing	Continuing
Other Product Development	C/FFP	NIWC : New Jersey/ Charleston/Picatinny	9.619	2.256	Jan 2022	1.663	Jan 2023	0.143	Jan 2024	-		0.143	Continuing	Continuing	Continuing
Subtotal			161.609	65.229		75.575		88.620		-		88.620	Continuing	Continuing	N/A
Remarks															
<p>-The increase in System Design and Development from FY 2023 to FY 2024 is primarily attributed to the increase of initiating ACV-R Phase II Design activities in FY 2024 while simultaneously completing ACV-30 Phase IV efforts. The primary focus in FY 2024 for ACV-30 includes completing Phase IV design and development post Critical Design Review (CDR) and continuing prime contractor test support; for ACV-R, the primary focus is initiating Phase II design and development activities during PRTV build, including incremental funding for the order of three (3) ACV-R PRTVs which will be ordered in FY 2024 and initiating prime contractor test support efforts for test preparation and planning. FY 2024 is a critical funding year to support development and design efforts outlined above and required to stay on schedule on the production side. To avoid a production break between FY 2024 and FY 2025, full funding in FY 2024 supports the program ability to complete ACV-30 Phase IV design and development activities which are on the critical path to achieving production in FY 2025 (ACV-30 is the only variant produced that year), and initiating ACV-R Phase II efforts which are on the critical path to achieving production in FY 2026 (both ACV-30 and ACV-R are produced that year).</p> <p>- The decrease in Other Product Development from FY 2023 to FY 2024 is attributed to the completion of procurement of Government Furnished Equipment (GFE) for ACV-30 PRTVs in FY 2023. Funding in FY 2024 provides GFE test spares for ACV-R, which costs less by comparison.</p>															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	WR	Various : Various	1.517	0.000	Apr 2022	0.415	Apr 2023	0.000	Apr 2024	-		0.000	Continuing	Continuing	Continuing
Technical Data & Pubs Development	WR	NSWC CD : Carderock, MD	0.553	0.000	Apr 2022	0.066	Apr 2023	0.715	Apr 2024	-		0.715	Continuing	Continuing	Continuing
In-House Technical Support	WR	Various : Various	13.776	2.395	Apr 2022	5.505	Apr 2023	1.769	Apr 2024	-		1.769	Continuing	Continuing	Continuing
Training Devices/ Simulators	WR	NAWC : Orlando, FL	0.435	0.593	Apr 2022	1.844	Apr 2023	0.610	Apr 2024	-		0.610	Continuing	Continuing	Continuing
Travel	Various	Various : Various	2.149	0.096	Apr 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Support Equipment	Various	Various : Various	0.000	0.281	Apr 2022	0.000		0.950	Apr 2024	-		0.950	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			18.430	3.365		7.830		4.044		-		4.044	Continuing	Continuing	N/A
Remarks															
- The decrease in Integrated Logistics Support from FY 2023 to FY 2024 is attributed to decreased scope for ACV Test Program Set development															
- The increase in Pubs and Tech Data from FY 2023 to FY 2024 is primarily attributed to initiation of development activities for ACV-R Training Software & Course Content in FY 2024.															
- The decrease in In-House Technical support from FY 2023 to FY 2024 is primarily attributed to efforts transitioning from RDT&E to the Procurement appropriation, now that the ACV-C variant is in fielding, including the following: Command & Control (C2) engineering and integration efforts and software updates/hardware technology refresh efforts necessary to maintain the ACV Command-variant Authority to Operate (ATO).															
- The decrease in Training Devices and Simulators from FY 2023 to FY 2024 is primarily attributed to reduced scope for ongoing efforts.															
- The increase in Support Equipment from FY 2023 to FY 2024 is attributed to initiation of design and development activities for ACV-R unique Support Equipment and tool sets.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	Various : Various	0.000	0.385	Jan 2022	4.911	Jan 2023	4.587	Jan 2024	-		4.587	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	Various : Various	28.209	0.000		0.000		0.000		-		0.000	0.000	28.209	-
Operational Test & Evaluation (OT&E)	WR	MCOTEA : Quantico,VA	0.000	0.976	Jan 2022	0.508	Jan 2023	2.344	Jan 2024	-		2.344	Continuing	Continuing	Continuing
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	MCOTEA : Quantico,VA	14.410	0.000		0.000		0.000		-		0.000	0.000	14.410	-
Live Fire Test & Evaluation (LFT&E)	WR	Various : Various	0.000	0.688	Jan 2022	1.991	Apr 2023	1.762	Apr 2024	-		1.762	Continuing	Continuing	Continuing
Prior Year Live Fire Test & Evaluation Not Funded FYDP (PYLFT&E)	WR	Various : Various	16.317	0.000		0.000		0.000		-		0.000	0.000	16.317	-
Subtotal			58.936	2.049		7.410		8.693		-		8.693	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605611M / MC AVS Development & Demonstration				Project (Number/Name) 0025 / Amphibious Combat Vehicle Family of Vehicles					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks - The decrease in Developmental Test & Evaluation (DT&E) from FY 2023 to FY 2024 is primarily attributed to the completion of ACV-30 DT&E in FY 2024 and the relatively lower levels of ACV-R test planning and preparation efforts in FY 2024. - The increase in Operational Test & Evaluation (OT&E) from FY 2023 to FY 2024 is primarily attributed to initiation of ACV-30 OT&E and the relatively lower levels of ACV-R test planning and preparation efforts in FY 2024. - The decrease in Live Fire Test & Evaluation (LFT&E) from FY 2023 to FY 2024 is primarily attributed to the completion of ACV-30 LFT&E test efforts in FY 2024 and the relatively lower levels of ACV-R test planning and preparation efforts in FY 2024.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Technical Services	Various	Various : Various	6.765	0.339	Mar 2022	0.425	Mar 2023	1.612	Mar 2024	-		1.612	Continuing	Continuing	Continuing
Management Support Services	Various	Various : Various	10.230	0.255	Mar 2022	0.261	Mar 2023	0.267	Mar 2024	-		0.267	Continuing	Continuing	Continuing
Studies and Analyses	TBD	TBD : TBD	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			16.995	0.594		0.686		1.879		-		1.879	Continuing	Continuing	N/A
Remarks - The increase in Engineering and Technical Services from FY 2023 to FY 2024 is primarily attributed to increased support required for ACV-R engineering and technical reviews leading up to the ECP approval for this variant in FY 2024. - The increase in Management Support Services from FY 2023 to FY 2024 of is attributed to the normal rate of inflation.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			255.970	71.237		91.501		103.236		-		103.236	Continuing	Continuing	N/A
Remarks FY 2024 is a vitally important year for design efforts that are critical to achieving production as scheduled in order to avoid a production break between the end of ACV-P production in FY 2024 and the beginning of ACV-30 production in FY 2025. Full funding in FY 2024 supports the program ability to complete ACV-30 Phase IV design and development activities which are on the critical path to achieving production in FY 2025 (ACV-30 is the only variant produced that year), and continuing ACV-R Phase II efforts which are on the critical path to achieving production in FY 2026 (both ACV-30 and ACV-R are produced that year).															

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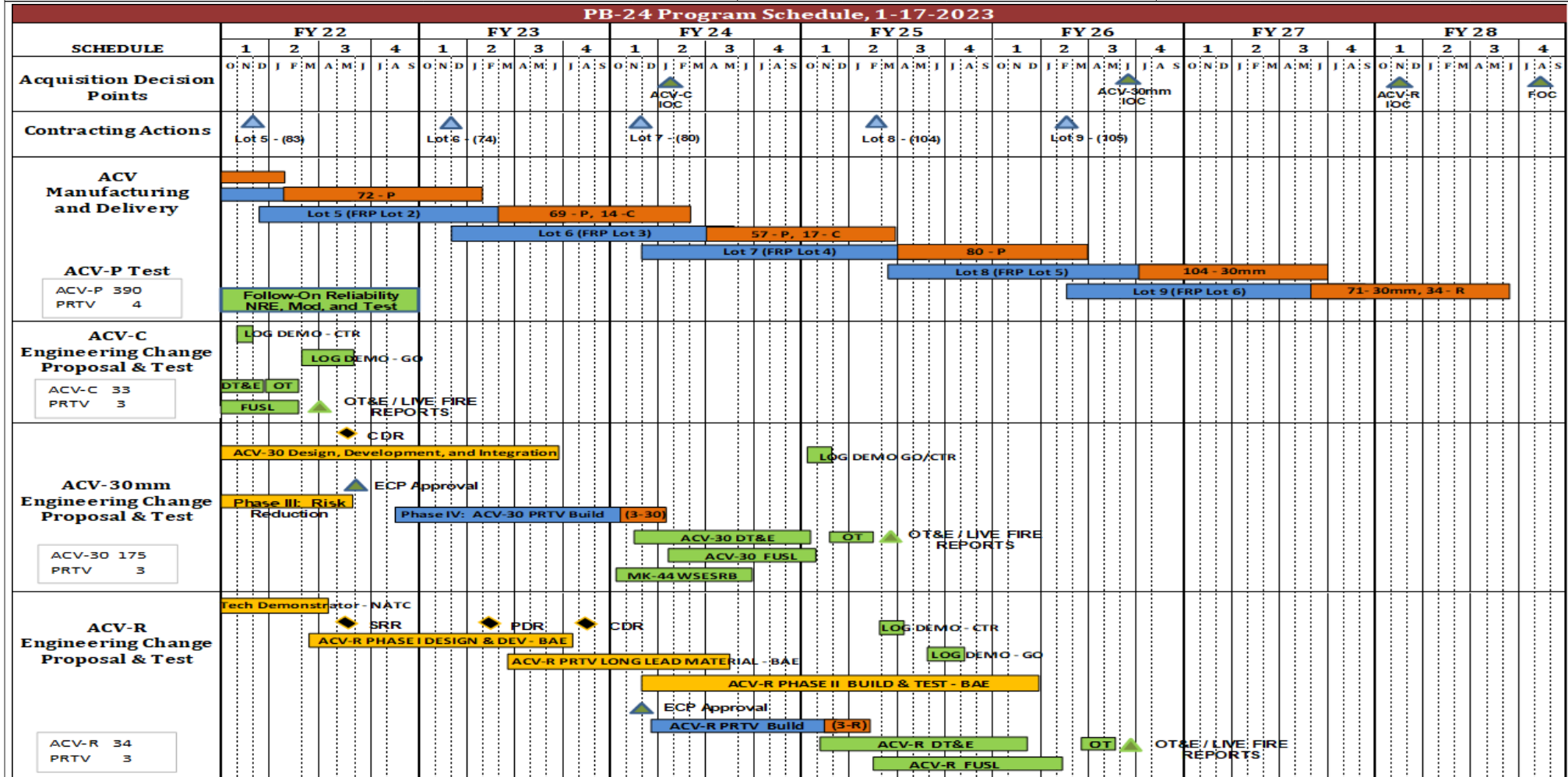
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity  
1319 / 5

R-1 Program Element (Number/Name)  
PE 0605611M / MC AVS Development & Demonstration

Project (Number/Name)  
0025 / Amphibious Combat Vehicle Family of Vehicles





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605611M / MC AVS Development & Demonstration	<b>Project (Number/Name)</b> 0025 / Amphibious Combat Vehicle Family of Vehicles	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0025</b>				
ACV-30 Phase IV: PRTV Build	4	2022	2	2024
FRP Lot 3 (overall Lot 6) Option Exercise	1	2023	1	2023
ACV-30 DT&E, OT&E and LFT&E	1	2024	2	2025
FRP Lot 4 (overall Lot 7) Option Exercise	1	2024	1	2024
ACV-30 Logistics Demo	1	2025	1	2025
ACV-R Phase I Design & Development	2	2022	4	2023
ACV-R Preliminary Design Review (PDR)	2	2023	2	2023
ACV-R Critical Design Review (CDR)	4	2023	4	2023
ACV-R Phase II PRTV Build & Test	1	2024	1	2026
ACV-R DT&E, OT&E, and LFT&E	1	2025	3	2026
ACV-R Contractor Logistics Demo	2	2025	3	2025
ACV-R Government Only Logistics Demo	3	2025	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605813M I Joint Light Tactical Veh (JLTV) Sys Dev & Dem							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	3.425	1.921	2.856	2.609	-	2.609	2.485	2.289	2.322	2.368	Continuing	Continuing
3209: Joint Light Tactical Vehicle	3.425	1.921	2.856	2.609	-	2.609	2.485	2.289	2.322	2.368	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 279												
A. Mission Description and Budget Item Justification												
<p>This is a Commandant of the Marine Corps Force Design program. Funding supports the JLTV Family of Vehicles (FoV) to include the development and testing of mechanical and Command, Control, Communications, Computers, &amp; Intelligence (C4I) for integration with the JLTV. JLTV is a joint program between the U.S. Army and the U.S. Marine Corps, of which the U.S. Army is the lead service. The JLTV FoV is capable of performing multiple mission roles designed to provide protected, sustained, and networked mobility for personnel and payloads across the full Range of Military Operations. JLTV features include increased performance, protection, and payload over the current HMMWV fleet, reducing ownership costs by maximizing commonality, fuel efficiency, and reliability. The commonality of components, maintenance procedures, and training among vehicles are inherent in FoV solutions across mission variants to minimize total ownership costs. Unique service requirements have been minimized.</p>												
<p>RDT&amp;E funding supports modernization of the JLTV Family of Vehicles by investigating technology insertions including, but not limited to: condition based maintenance plus (CBM+), vehicle electronics systems, and other emerging technologies and safety initiatives; engineering change orders (ECOs), and retrofits to maintain the configuration of the trucks being used to integrate various weapons platforms.</p>												
<p>Current mechanical and Command, Control, Communications, Computers and Intelligence Surveillance and Reconnaissance (C4ISR) integration activities include integration of systems such as: Marine Air Defense Integrated System (MADIS) and Remote Weapons System (RWS) Cannon, Network on the Move (NOTM), Ground Combat Vehicles (GCV), Operational Precision Fires - Mobile (OPF-M), Communications Emitter Sensing and Attack Systems (CESAS II), Joint Battle Command-Platform (JBC-P), Tactical Imagery Production System Next Generation (TIPS NG), Mobile Command Vehicle (MCV), and Navy Marine Expeditionary Ship Interdiction System (NMESIS) Key Leader Vehicle.</p>												
<p>FY 2024 budget activities include live fire and survivability testing, systems engineering/integration activities, Condition Based Maintenance plus (CBM+), engineering design analysis, and test efforts. Efforts will focus on energy efficiency initiatives such as anti-idle and initial analysis of a next generation powertrain that will consider a hybrid option; Cyber Scans to evaluate emerging threats and technologies; integration of the new engine into the JLTV A2; JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Force Protection and Survivability improvements; enhancing performance of C4ISR system capabilities as they relate to the JLTV; developmental efforts required for the integration of future C4ISR requirements on the JLTV; cyber security vulnerability assessments; and development/integration of associated fielded and Force Design solutions for the JLTV system and integrated capabilities and software.</p>												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		PE 0605813M I Joint Light Tactical Veh (JLTV) Sys Dev & Dem			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	2.005	2.856	2.574	-	2.574
Current President's Budget	1.921	2.856	2.609	-	2.609
Total Adjustments	-0.084	0.000	0.035	-	0.035
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.076	0.000			
• SBIR/STTR Transfer	-0.008	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.035	-	0.035
<b>Change Summary Explanation</b>					
The net decrease from FY 2023 to FY 2024 is the net result of FY 2023 procurement of test assets to be used in FY 2024 and the overall increase of test efforts in FY 2024 to include Live Fire and Survivability testing of production test asset.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605813M / Joint Light Tactical Veh (JLTV) Sys Dev & Dem				Project (Number/Name) 3209 / Joint Light Tactical Vehicle			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3209: Joint Light Tactical Vehicle	3.425	1.921	2.856	2.609	-	2.609	2.485	2.289	2.322	2.368	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 279												
A. Mission Description and Budget Item Justification												
<p>This is a Commandant of the Marine Corps Force Design program. Funding supports the JLTV Family of Vehicles (FoV) to include the development and testing of mechanical and Command, Control, Communications, Computers, &amp; Intelligence (C4I) for integration with the JLTV. JLTV is a joint program between the U.S. Army and the U.S. Marine Corps, of which the U.S. Army is the lead service. The JLTV FoV is capable of performing multiple mission roles designed to provide protected, sustained, and networked mobility for personnel and payloads across the full Range of Military Operations. JLTV features include increased performance, protection, and payload over the current HMMWV fleet, reducing ownership costs by maximizing commonality, fuel efficiency, and reliability. The commonality of components, maintenance procedures, and training among vehicles are inherent in FoV solutions across mission variants to minimize total ownership costs. Unique service requirements have been minimized.</p>												
<p>RDT&amp;E funding supports modernization of the JLTV Family of Vehicles by investigating technology insertions including, but not limited to: condition based maintenance plus (CBM+), vehicle electronics systems, and other emerging technologies and safety initiatives; engineering change orders (ECOs), and retrofits to maintain the configuration of the trucks being used to integrate various weapons platforms.</p>												
<p>Current mechanical and Command, Control, Communications, Computers and Intelligence Surveillance and Reconnaissance (C4ISR) integration activities include integration of systems such as: Marine Air Defense Integrated System (MADIS) and Remote Weapons System (RWS) Cannon, Network on the Move (NOTM), Ground Combat Vehicles (GCV), Operational Precision Fires - Mobile (OPF-M), Communications Emitter Sensing and Attack Systems (CESAS II), Joint Battle Command-Platform (JBC-P), Tactical Imagery Production System Next Generation (TIPS NG), Mobile Command Vehicle (MCV), and Navy Marine Expeditionary Ship Interdiction System (NMESIS) Key Leader Vehicle.</p>												
<p>FY 2024 budget activities include live fire and survivability testing, systems engineering/integration activities, Condition Based Maintenance plus (CBM+), engineering design analysis, and test efforts. Efforts will focus on energy efficiency initiatives such as anti-idle and initial analysis of a next generation powertrain that will consider a hybrid option; Cyber Scans to evaluate emerging threats and technologies; integration of the new engine into the JLTV A2; JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Force Protection and Survivability improvements; enhancing performance of C4ISR system capabilities as they relate to the JLTV; developmental efforts required for the integration of future C4ISR requirements on the JLTV; cyber security vulnerability assessments; and development/integration of associated fielded and Force Design solutions for the JLTV system and integrated capabilities and software.</p>												
<p>The net decrease from FY 2023 to FY 2024 of \$0.247M is a result of procurement of test assets (\$0.487) in FY 2023 to be used in FY 2024, and the overall increase of test efforts in FY 2024 to include Live Fire and Survivability testing of production test asset.</p>												

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605813M / <i>Joint Light Tactical Veh (JLTV) Sys Dev &amp; Dem</i>	<b>Project (Number/Name)</b> 3209 / <i>Joint Light Tactical Vehicle</i>	

The Marine Corps affirms with a high degree of confidence that the program in this line item is executable.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Joint Light Tactical Vehicle (JLTV)	1.921	2.856	2.609	0.000	2.609
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> - Procurement of test assets (vehicle and kits) in preparation for live fire testing of vehicle configurations, procured on the JLTV follow-on production contract awarded Feb 2023.  - Continue developmental and engineering efforts including: Initiation of design, integration and testing for the Next Generation Powertrain which will consider parallel hybrid, and series hybrid options; Cyber Scans to evaluate emerging threats and technologies; Integrated Tactical Network (ITN) rapid prototyping to support emerging characterization events; development and integration of Anti-Idle technology; and JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Protected Ambulance, and Protected Command and Control.  - Conduct evaluation and analysis of the JLTV Transportability Enhancement Kit (JTEK) in order to document the performance capabilities to support the development of a safety release.  - Continue work on the development of a methodology for Condition Based Maintenance Plus (CBM+) data architecture for the JLTV. This includes improving at-platform data collection, data transmission and storage, and development of predictive analytics.					
<b>FY 2024 Base Plans:</b> - Perform live fire and survivability testing on production test assets.  - Initiate and continue developmental and engineering efforts including: energy efficiency upgrades such as anti-idle and initial analysis of a next generation powertrain that will consider a hybrid option; Cyber Scans to evaluate emerging threats and technologies; integration of the A2 engine; JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Force Protection and Survivability improvements; enhancing performance of C4ISR system capabilities as they relate to the JLTV; developmental efforts required for the integration of future C4ISR requirements on the JLTV; and cyber security vulnerability assessments, and development/integration of associated legacy and Force Design solutions for the JLTV system and integrated capabilities and software.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy									Date: March 2023		
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0605813M / Joint Light Tactical Veh (JLTV) Sys Dev & Dem				Project (Number/Name) 3209 / Joint Light Tactical Vehicle			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>- Continue to improve military equipment operational availability and readiness of MAGTF resources with JLTV as the prime mover. Work consists of improving at-platform data diagnostics and collection, data transmission and storage, and development of predictive analytics. These continued efforts will further support emerging requirements for the Marine Corps Condition Based Maintenance+ (CBM+) enterprise data architecture, increase the JLTV CBM+ data efficiency and support development of engineering change proposals (ECP) to install CBM enabling technologies on the JLTV.</p> <p><b>FY 2024 OCO Plans:</b> N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The net decrease from FY 2023 to FY 2024 is the net result of FY23 procurement of test assets to be used in FY24 and the overall increase of test efforts in FY24 to include Live Fire and Survivability testing of production test asset.</p>											
Accomplishments/Planned Programs Subtotals							1.921	2.856	2.609	0.000	2.609
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPA/D15603: JLTV (Army)	496.122	592.225	786.946	-	786.946	769.416	743.156	742.672	746.980	14,699.052	24,382.219
• RDT&E/VU9: 0605812A - JLTV (Army)	2.470	9.376	27.243	-	27.243	26.959	43.187	43.452	42.506	104.410	793.567
• PMC/5095: JLTV (MC)	332.282	214.751	232.501	-	232.501	281.222	301.844	635.989	587.135	1,472.816	5,976.175
Remarks											
D. Acquisition Strategy											
<p>Joint Light Tactical Vehicle (JLTV) is a Joint Program Office (JPO) with the U.S. Army and U.S. Marine Corps as the two main components. The U.S. Army is the JLTV service lead. The JLTV Program entered the Production and Deployment Phase with the Acquisition Decision Memorandum authorization on 25 August 2015. With Milestone C approval, the LRIP fixed price contract was awarded to Oshkosh Defense LLC on 25 August 2015.</p> <p>This contract consists of a three year LRIP period with options for five additional years of FRP deliveries. JPO JLTV procured the Technical Data Package (TDP) with appropriate data rights to allow for future competition for production vehicles and spares. Current contract options may be exercised through 30 November 2023.</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605813M / Joint Light Tactical Veh (JLTV) Sys Dev & Dem	Project (Number/Name) 3209 / Joint Light Tactical Vehicle
<p>A competitive follow-on production contract was awarded to AM General LLC on 09 Feb 2023 as a single award five year requirements contract with five one year options. Split procurements will occur in FY23 and FY24 between the Oshkosh Defense LLC contract and the AM General LLC contract based on the approved acquisition strategy. In accordance with the JPO acquisition strategy, realized cost savings will be reapplied within the program to procure additional vehicles.</p> <p>The approved Full Rate Production (FRP) joint cost position validated the requirement for continuing RDT&amp;E for system enhancements.</p> <p>The JLTV program will continually monitor emerging technologies and capabilities through its partnerships with U.S. Army and Marine Corps science and technology organizations as well as through industry market research and partnerships. The JLTV program will look for opportunities to implement increased capabilities throughout the systems' life cycle.</p>		



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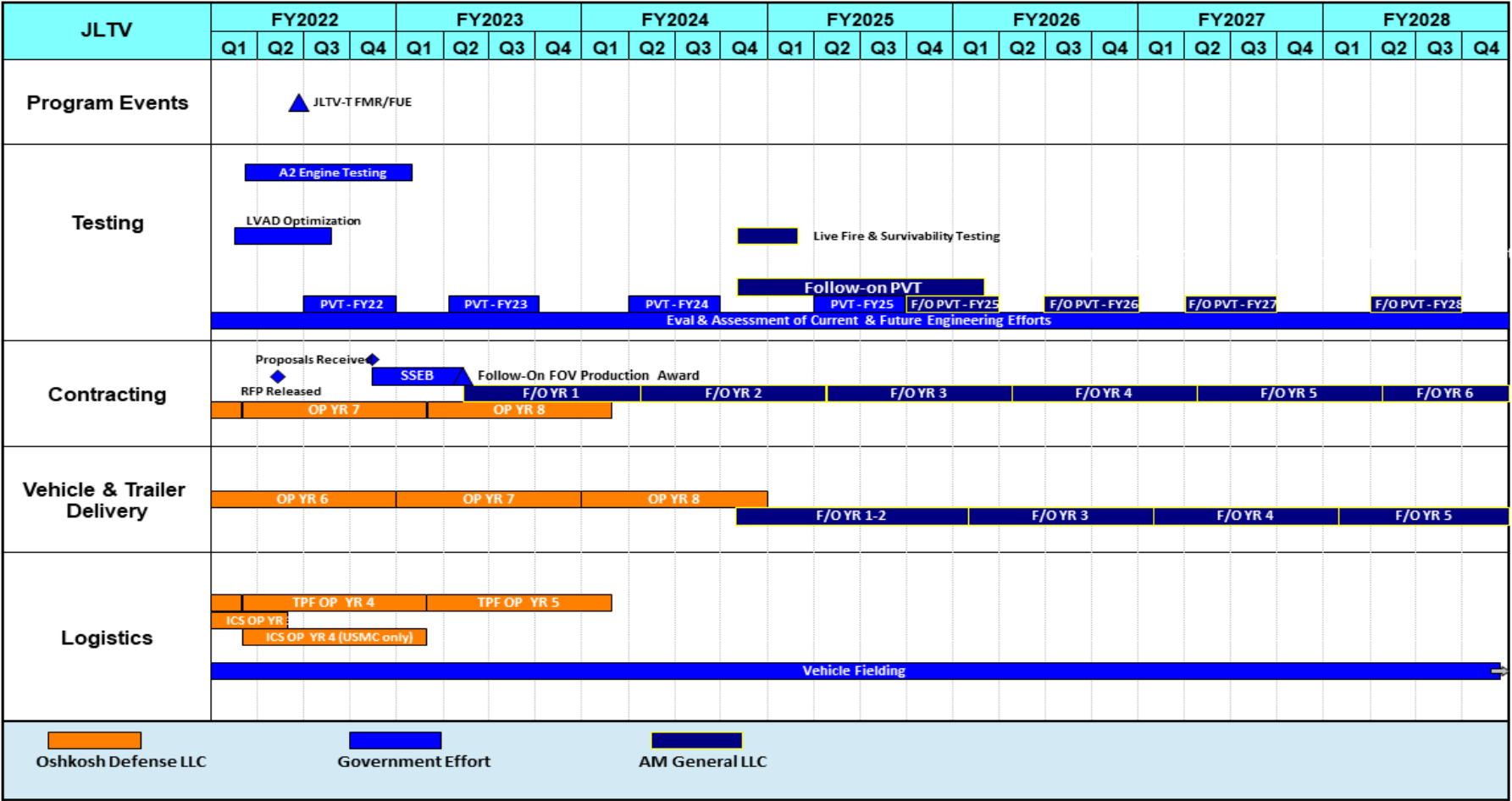
Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605813M / Joint Light Tactical Veh (JLTV) Sys Dev & Dem				Project (Number/Name) 3209 / Joint Light Tactical Vehicle					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Condition Based Maintenance	C/CPFF	Pennsylvania State University : State College, PA	0.650	0.725	Dec 2021	0.083	Dec 2023	0.090	Dec 2023	-		0.090	0.000	1.548	-
Subtotal			0.650	0.725		0.083		0.090		-		0.090	0.000	1.548	N/A
Remarks															
Continue to improve military equipment operational availability and readiness of MAGTF resources with JLTV as the prime mover. Work consists of improving at-platform data diagnostics and collection, data transmission and storage, and development of predictive analytics.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Technical Support	C/CPFF	Oshkosh Defense : Oshkosh, WI	2.775	0.353	Aug 2022	0.293	Mar 2023	0.000		-		0.000	Continuing	Continuing	Continuing
System Technical Support	C/FFP	AM General LLC : South Bend, IN	0.000	0.000		0.100	Apr 2023	0.924	Aug 2024	-		0.924	Continuing	Continuing	Continuing
Subtotal			2.775	0.353		0.393		0.924		-		0.924	Continuing	Continuing	N/A
Remarks															
Continue engineering efforts including integration of the A2 engine; JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Force Protection and Survivability improvements. Design Study and Analysis has been renamed to System Technical Support and moved from 'Test and Evaluation' to 'Support' to better align with the work being performed.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation (LFT&E)	C/FFP	AM General LLC : South Bend, IN	0.000	0.000		0.487	Feb 2023	0.000		-		0.000	0.000	0.487	-
Live Fire Test & Evaluation (LFT&E)	MIPR	Aberdeen Test Center : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.719	Jun 2024	-		0.719	0.000	0.719	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0605813M / Joint Light Tactical Veh (JLTV) Sys Dev & Dem						Project (Number/Name) 3209 / Joint Light Tactical Vehicle			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	MIPR	Ground Vehicle Systems Center : Warren, MI	0.000	0.843	Mar 2022	1.000	Apr 2023	0.876	Jun 2024	-		0.876	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	MIPR	Keweenaw Research Center : Calumet, MI	0.000	0.000		0.893	Jun 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.843		2.380		1.595		-		1.595	Continuing	Continuing	N/A
Remarks															
Perform vehicle live fire and survivability testing on production test asset procured in FY 2023 and continue developmental efforts including various energy efficiency initiatives.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3.425	1.921		2.856		2.609		-		2.609	Continuing	Continuing	N/A
Remarks															
The net decrease from FY 2023 to FY 2024 is the net result of procurement of test assets in FY 2023 to be used in FY 2024 and the overall increase of test efforts in FY 2024 to include Live Fire and Survivability testing of production test asset.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605813M / Joint Light Tactical Veh (JLTV) Sys Dev & Dem	Project (Number/Name) 3209 / Joint Light Tactical Vehicle



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605813M / Joint Light Tactical Veh (JLTV) Sys Dev & Dem	Project (Number/Name) 3209 / Joint Light Tactical Vehicle	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3209				
Request for Proposal	2	2022	2	2022
Follow-on Production Contract Award	2	2023	2	2023
Live Fire & Survivability Testing	4	2024	1	2025
Product Verification Testing	4	2024	1	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0204202N / DDG-1000							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	2,023.203	110.789	180.374	231.778	-	231.778	121.582	51.384	20.230	8.857	Continuing	Continuing
2464: DD(X) Sys Design, Dev & Integration	2,023.203	110.789	180.374	231.778	-	231.778	121.582	51.384	20.230	8.857	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 197												
A. Mission Description and Budget Item Justification												
This Program Element (PE) provides funds for the integration of Conventional Prompt Strike (CPS) into the Zumwalt class surface combatants. CPS integration is a top CNO priority that enhances the Zumwalt class's mission to provide credible independent forward presence/deterrence and operate as an integral part of Naval, Joint or Combined Maritime Forces. DDG 1000 will establish and maintain surface superiority, provide local air defense, and incorporate signature reduction to operate in all threat environments. DDG 1000 will have seamless Joint Interoperability to integrate all source information for battlespace awareness and weapons direction.												
Funding provided is for design activities necessary to integrate CPS into all three Zumwalt Class destroyers to perform the required systems engineering, analysis, modeling and simulation necessary to install the CPS capability on DDG 1000 during her first Build Yard Maintenance Period (BYMP) in FY24. The funding provides a flexible, surface combatant launched long-range strike capability through the ships' remaining service life. When combined with the low observable characteristics of the Zumwalt platform, the ships provide a compelling strike capability from a platform designed to complicate an adversaries' targeting problem. Funding enables ship modifications for installation of a CPS cold launch system common to the future Virginia Payload Module.												
B. Program Change Summary (\$ in Millions)				FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total				
Previous President's Budget				112.576	197.436	98.223	-	98.223				
Current President's Budget				110.789	180.374	231.778	-	231.778				
Total Adjustments				-1.787	-17.062	133.555	-	133.555				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-17.062							
• Congressional Rescissions				-	-							
• Congressional Adds				-	-							
• Congressional Directed Transfers				-	-							
• Reprogrammings				-	-							
• SBIR/STTR Transfer				-1.787	0.000							
• Program Adjustments				0.000	0.000	131.953	-	131.953				
• Rate/Misc Adjustments				0.000	0.000	1.602	-	1.602				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0204202N / DDG-1000	
<div>Change Summary Explanation</div> <div>The FY24 increase of \$51.404M is due to the additional funding for CPS wholeness and for planned Test and Evaluation Master Plan (TEMP) events.</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0204202N / DDG-1000				Project (Number/Name) 2464 / DD(X) Sys Design, Dev & Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2464: DD(X) Sys Design, Dev & Integration	2,023.203	110.789	180.374	231.778	-	231.778	121.582	51.384	20.230	8.857	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 197												
A. Mission Description and Budget Item Justification												
<p>The Zumwalt class destroyer (DDG 1000) program is developing the naval surface hypersonic strike capability, able to conduct independent forward deployed operations and prosecute deep-inland, time-critical, soft and medium-hardened targets in a contested environment. With the addition of surface hypersonic strike to legacy capabilities, Zumwalt will provide means to conduct Joint Surface Strike, deliver local area defense against air, surface and undersea threats, and incorporate signature reduction to operate in all threat environments. The Zumwalt class will have seamless Joint Interoperability to integrate all source information for battlespace awareness and weapons direction. The surface hypersonic strike capability, combined with the low observable characteristics of the Zumwalt platform, creates a uniquely lethal and survivable naval surface platform. The Zumwalt class supports the National Defense Strategy by supporting modernization initiatives for fielding hypersonic technologies and enabling a more lethal force. Overall, the Zumwalt class will enhance U.S. conventional power projection by providing an independent forward deployed strike platform, with longer range, shorter time of flight, and higher survivability against enemy defenses compared to current capabilities.</p>												
<p>The Acquisition Decision Memorandum signed by ASN(RDA) on Jan 19 2023 directed PEO Ships to integrate Conventional Prompt Strike (CPS) into USS Zumwalt (DDG 1000) and USS Michael Monsoor (DDG 1001) by conducting a Building Yard Modernization Period (BYMP) and into USS Lyndon B. Johnson (DDG 1002) during new construction, prior to the ship's arrival in homeport, in order to maximize its fleet availability time. Full operational capability is achieved when the Zumwalt CPS Weapon System modernizations are completed, and all the three ships are turned over to the Fleet.</p>												
<p>The Zumwalt program strategy is to leverage the development efforts for a CPS capability on Virginia submarines, using a minimal integration solution to rapidly provide a surface hypersonic strike capability to the Fleet. Funding provided is for design activities necessary to integrate CPS onto all three Zumwalt class destroyers and to perform the required systems engineering, analysis, modeling, and simulation, to modify the CPS Virginia design as necessary to install, field, and sustain CPS capability on Zumwalt class through the ships' remaining service life. Key activities to support CPS integration are:</p> <p>1. Product and Software Development: Efforts required to modernize Zumwalt class destroyers to support the CPS Weapon System and delivery of a surface hypersonic strike capability to the Fleet.</p> <p>2. Test and Evaluation: Platform level testing requirements resulting from the integration of CPS.</p> <p>3. Management Services: Modifications to Zumwalt manpower, logistics, and sustainment requirements resulting from the integration of CPS.</p>												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
Title: Product / Software Development							94.389	166.265	195.590	0.000	195.590	
Articles:							-	-	-	-	-	

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0204202N / DDG-1000	<b>Project (Number/Name)</b> 2464 / DD(X) Sys Design, Dev & Integration

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p><b>Description:</b> This funding applies to the design, systems engineering, prototype construction, and certification for the ZUMWALT Conventional Prompt Strike (CPS) Weapon System as needed to support the ZUMWALT CPS modernization schedule, flight testing, and delivery to the Fleet. This effort includes:</p> <ul style="list-style-type: none"> <li>- Large Missile Vertical Launch System (LMVLS): Modifications to ZUMWALT Class ship systems enabling Hull, Mechanical and Electrical (HM&amp;E) integration of the CPS Weapon System and other weapon systems designed for the Blk V VIRGINIA Class submarine VIRGINIA PAYLOAD MODULE (VPM).</li> <li>- Combat System: Modifications to the ZUMWALT Combat System required to support integration of the CPS Weapon System.</li> <li>- CPS Weapon System: CPS Weapon system integration and certification on ZUMWALT Class. Development of CPS Weapon System elements common to both ZUMWALT and VIRGINIA CPS Weapon Systems are separately funded by the CPS Program Office.</li> </ul> <p><b>FY 2023 Plans:</b> Specific planned design and prototyping efforts include:</p> <ul style="list-style-type: none"> <li>- Complete development of Large Missile Vertical Launch System (LMVLS) and complete Ship Interface Drawings (SIDs) for the ZUMWALT CPS Weapon System.</li> <li>- Continue development of ZUMWALT CPS Weapon Control System (WCS) and launcher system.</li> <li>- Continue development of TSCE hardware and software modifications in support of CPS integration.</li> <li>- Continue development of the Electronic Control System (ECS) hardware and software for LMVLS.</li> <li>- Commence establishment of a ZUMWALT CPS land based development integration laboratory to conduct developmental integration between CPS WCS, TSCE &amp; ECS</li> <li>- Complete virtual model of ECS to support land based developmental testing with both ZUMWALT Total Ship Computing Environment (TSCE) and CPS Weapons Control System (WCS).</li> <li>- Complete and deliver a ZUMWALT TSCE virtual twin for use by the Conventional Prompt Strike Program to support TSCE and WCS land based developmental integration testing.</li> <li>- Commence planning for execution of ZUMWALT CPS Weapon System shakedown, certification, initial fielding, and sustainment.</li> <li>- Conduct early technical demonstration of the ZUMWALT CPS WCS on DDG 1000, in conjunction with CPS Program Office's WCS development program.</li> <li>- Conduct systems engineering, model and simulation, and analysis efforts of ZUMWALT CPS WCS design performance using data from CPS / U.S. Army Joint Flight Campaign 3, an End-to-End solder executed U.S. Army hypersonic strike capability demonstration.</li> </ul>					



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0204202N / DDG-1000		Project (Number/Name) 2464 / DD(X) Sys Design, Dev & Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Conduct systems engineering, model and simulation, and analysis efforts of surface launcher design performance using data from CPS's developmental In-Air Launcher (IAL) Test program.</div> <div>- Develop technical and procurement specifications for environmental barrier and launch module shock isolation</div> <div><b>FY 2024 Base Plans:</b> Specific planned design and prototyping efforts include:<div>- Complete development of the ZUMWALT CPS WCS.</div><div>- Continue development of ZUMWALT CPS launcher system.</div><div>- Continue TSCE hardware and software modifications in support of CPS integration.</div><div>- Continue establishment of a ZUMWALT CPS land based development integration laboratory and commence developmental integration between CPS WCS, TSCE &amp; ECS.</div><div>- Complete and deliver TSCE hardware modifications kit to support CPS integration on DDG 1000.</div><div>- Complete and deliver ZUMWALT CPS WCS kit for installation on DDG 1000.</div><div>- Commence ZUMWALT CPS Build Yard Modernization Period (BYMP) integration and testing.</div><div>- Complete a ZUMWALT TSCE virtual twin for use by the Conventional Prompt Strike Program to support CPS Weapon System end-to-end land based developmental integration testing.</div><div>- Continue planning for execution of ZUMWALT CPS Weapon System shakedown, certification, flight test, initial fielding, and sustainment.</div><div>- Conduct delta developmental In-Air-Launcher testing to assess ZUMWALT CPS launcher design change to meet Surface unique platform requirements.</div><div>- Conduct systems engineering, model and simulation, and analysis efforts of the ZUMWALT CPS WCS and Launcher System design performance using data from CPS Joint Flight Campaign 4, a prototype Navy cold launched All-Up-Round hypersonic strike flight test.</div><div>- Plan to complete CPS weapon system ship installation drawings</div></div> <div><b>FY 2024 OCO Plans:</b> N/A</div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> Funding increase is due to transition from early development in FY22-23 to the completion of development efforts, delivery of initial hardware, and commencement of ZUMWALT CPS Integration and Test efforts on DDG 1000 in FY24.</div>						
Title: Test and Evaluation		9.800	12.259	33.888	0.000	33.888
Articles:		-	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0204202N / DDG-1000		Project (Number/Name) 2464 / DD(X) Sys Design, Dev & Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>Description:</b> This funding covers the ZUMWALT CPS Surface Unique platform level testing requirements. This testing is being performed concurrently with Conventional Prompt Strike led tests for the common elements of the ZUMWALT and VIRGINIA Conventional Prompt Strike Weapon Systems. This funding also covers execution of the DDG 1000 Test and Evaluation Master Plan (TEMP).</p> <p><b>FY 2023 Plans:</b> Specific CPS T&amp;E efforts include:</p> <ul style="list-style-type: none"><li>- Procure ZUMWALT specific testing material, conduct data analysis, and perform modeling and simulation updates to - understand rocket motor ignition impacts on DDG 1000 hull, in conjunction with Conventional Prompt Strike (CPS) First Stage (FS) Solid Rocket Motor (SRM) testing.</li><li>- Continue to develop plans to conduct ZUMWALT unique CPS weapons system testing and procure associated test equipment and weapon system simulators.</li><li>- Start developing plans for land-based Zumwalt test facility for integration testing of CPS Weapon System with ZUMWALT Combat System and ZUMWALT ship control system.</li><li>- Start developing plans to support the execution of first CPS flight test off DDG 1000 class, Joint Flight Campaign (JFC-6). Begin generating ZUMWALT specific test objectives and data collection plans and start conducting System of System (SoS) Technical Interchange Meetings (TIMs) to de-risk onboard DDG 1000 CPS testing and JFC-6.</li></ul> <p>Specific DDG 1000 TEMP efforts include:</p> <ul style="list-style-type: none"><li>- Continue planning for DDG 1000 TEMP events, to include Anti Air Warfare tests and Tomahawk Live Fire test - Execution, analysis and reporting of Cyber Vulnerability tests and Live Fire Test and Evaluation (LFT&amp;E) tests</li><li>- Continue Modeling and Simulation (M&amp;S) analysis to assess Probability of Raid Annihilation (PRA) of Anti-Ship Cruise Missiles (ASCM) and Aircrafts Key Performance Parameters (KPPs)</li></ul> <p><b>FY 2024 Base Plans:</b> Specific CPS T&amp;E efforts include:</p> <ul style="list-style-type: none"><li>- Continue to develop plans and start execution of ZUMWALT unique CPS weapons system testing.</li><li>- Continue developing plans and establish a land-based Zumwalt test facility for integration testing of CPS Weapon System with ZUMWALT Combat System and ZUMWALT ship control system.</li><li>- Continue developing plans to support the execution of first CPS flight test off DDG 1000 class, Joint Flight Campaign (JFC-6). Finalize ZUMWALT specific test objectives and data collection plans in support of JFC-6.</li></ul> <p>Specific DDG 1000 TEMP efforts include:</p>						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0204202N / DDG-1000		Project (Number/Name) 2464 / DD(X) Sys Design, Dev & Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Execution of DDG 1000 TEMP events, to include Anti Air Warfare and Tomahawk Live Fire tests in support of IOC for the DDG 1000 class.</div> <div>- Conduct subsequent data analysis and reporting of completed test events.</div> <div>Finish M&amp;S assessment of the PRA ASCM and PRA Aircraft KPPs.</div> <div><b>FY 2024 OCO Plans:</b></div> <div>N/A</div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></div> <div>Increase from FY23 to FY24 is a result of conducting TEMP events in FY24.</div>						
<div><b>Title:</b> Management Services</div> <div><b>Articles:</b></div> <div><b>Description:</b> This funding covers the ZUMWALT CPS Surface Unique platform level logistics and sustainment requirements. This effort focuses on requirements from ZUMWALT CPS Weapon System impacting manpower requirements for ZUMWALT Class. Data to support this analysis is being developed under DDG 1000 Surface Unique Weapon System Design and Prototyping and from related efforts by funded by Conventional Prompt Strike for ZUMWALT VIRGIA common weapon system elements.</div> <div><b>FY 2023 Plans:</b></div> <div>Specific planned design and prototyping efforts include:</div> <div>- Complete manpower Analysis study to determine manning requirements for new weapon system.</div> <div>- Complete Front End Analysis (FEA) to determine training requirements for the crew to operate weapon system and develop a model simulator to train Crew members.</div> <div>- Continue support requirements associated with Conventional Prompt Strike (CPS) on DDG 1000 Class ships.</div> <div><b>FY 2024 Base Plans:</b></div> <div>Complete support requirements associated with Conventional Prompt Strike (CPS) on DDG 1000 Class ships.</div> <div><b>FY 2024 OCO Plans:</b></div> <div>N/A</div> <div><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></div> <div>Increase from FY23 to FY24 is to continue logisitics and sustainment support</div>		6.600 -	1.850 -	2.300 -	0.000 -	2.300 -
Accomplishments/Planned Programs Subtotals		110.789	180.374	231.778	0.000	231.778

# UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0204202N / DDG-1000				Project (Number/Name) 2464 / DD(X) Sys Design, Dev & Integration			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OMN / 3B1K: Specialized Skill Training	3.175	3.258	3.347	-	3.347	3.431	3.487	3.538	3.608	0.000	751.488
• OPN / 0947: DDG 1000 Class Support Equipment	71.561	314.333	232.124	-	232.124	414.423	101.175	10.144	11.662	0.000	1,292.915
• OMN/15BUO: Life Cycle Engineering (IWS))	89.658	107.840	99.904	-	99.904	106.017	123.990	122.946	123.924	0.000	1,017.892
• OMN/15BR1: DDG 1000 Life Cycle Engineering and Sustainment	36.223	68.774	88.990	-	88.990	100.256	82.037	82.547	83.614	0.000	656.884
• SCN/2119: DDG 1000	56.597	72.976	410.400	-	410.400	32.300	0.000	0.000	0.000	0.000	13,793.234
Remarks											
D. Acquisition Strategy											
The DDG 1000 program strategy is to install CPS onto ZUMWALT Class in a Build Yard Modernization Period (BYMP) at Huntington Ingalls Industries (HII) in Pascagoula, MI. DDG 1000 will be the first ship modernized and arrive at HII in FY2023. Following DDG 1000, first DDG 1002 and then DDG 1001 will be modernized sequentially. DDG 1002 arrived at HII in January 2022 to begin its Combat System Availability (CSA) and will commence CPS modernization after CSA is complete. DDG 1001 is ordered last to maximize her operations by the fleet prior to commencing modernization.											
The modernization development strategy is to leverage the development efforts for a CPS capability on Virginia Submarines, using a minimal integration solution to rapidly provide a surface hypersonic strike capability to the Fleet. PEO Integrated Warfare System will be leveraged to modify the Zumwalt Combat System to support CPS Integration.											
Bath Iron Works has been awarded a contract as the planning yard to develop plans to remove Zumwalt forward gun mounts. Naval Surface Warfare Center (NSWC) Philadelphia is funding to develop the Large Missile Vertical Launch System (LMVLS), which include modifications to Zumwalt ship systems enabling support for weapon systems designed for the Blk V Virginia Class submarine Virginia Payload Module (VPM), allowing the installation of CPS Advanced Payload Module (APM) and All-Up-Rounds (AUR).											

## UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0204202N / DDG-1000				Project (Number/Name) 2464 / DD(X) Sys Design, Dev & Integration					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship Integration Development Software	SS/CPAF	Raytheon : Tewksbury MA	1,002.078	2.300	Dec 2021	0.000		0.000		-		0.000	0.000	1,004.378	-
Ship Integration Development (Prod Dev), TTWCS /ASIST	SS/CPFF	Various : Various	108.324	0.000		0.000		0.000		-		0.000	0.000	108.324	-
Surface Strike	Various	Various : Various	86.777	2.500	Oct 2021	0.000		0.000		-		0.000	0.000	89.277	-
Maritime Targeting Cell - Afloat	Various	Various : Various	96.444	18.366	Jan 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Alternative Weapon System Analysis	Various	Various : Various	1.312	0.000		0.000		0.000		-		0.000	0.000	1.312	-
Cybersecurity	SS/CPAF	Raytheon : Tewksbury MA	6.500	3.200	Dec 2021	0.000		0.000		-		0.000	0.000	9.700	-
Product Development for Technical Issues	Various	Various : Various	16.116	5.510	Dec 2021	0.000		0.000		-		0.000	0.000	21.626	-
Conventional Prompt Strike Design and Integration	C/CPAF	BIW : BATH, ME	8.200	28.000	Nov 2021	6.629	Dec 2022	6.697	Dec 2023	-		6.697	48.300	97.826	-
Conventional Prompt Strike Support	C/CPIF	Lockheed Martin : Denver, CO	1.000	29.513	Nov 2021	138.175	Nov 2022	171.501	Nov 2023	-		171.501	66.300	406.489	-
Conventional Prompt Strike Support	SS/CPAF	Raytheon : Tewksbury MA	0.000	0.000		9.550	Dec 2022	5.710	Dec 2023	-		5.710	0.000	15.260	-
Conventional Prompt Strike Support	SS/CPFF	PSS : Various	0.000	0.000		5.650	Dec 2022	6.467	Dec 2023	-		6.467	0.000	12.117	-
Conventional Prompt Strike Design and Integration	WR	NSWC : Dahlgren, VA	2.046	2.100	Nov 2021	1.796	Nov 2022	0.750	Nov 2023	-		0.750	9.408	16.100	-
Conventional Prompt Strike Design and Integration	WR	NSWC : Philadelphia, PA	1.851	1.900	Nov 2021	0.850	Nov 2022	0.850	Nov 2023	-		0.850	8.512	13.963	-
Conventional Prompt Strike Design and Integration	WR	NSWC : Indian Head, MD	0.000	0.000		0.959	Nov 2022	0.959	Nov 2023	-		0.959	0.000	1.918	-

## UNCLASSIFIED

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0204202N / DDG-1000	<b>Project (Number/Name)</b> 2464 / DD(X) Sys Design, Dev & Integration
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Conventional Prompt Strike Design and Integration	WR	NSWC : Bethesda, MD	0.000	0.000		1.497	Nov 2022	1.497	Nov 2023	-		1.497	0.000	2.994	-
Conventional Prompt Strike Design and Integration	Various	Various : Various	0.974	1.000	Nov 2021	1.159	Nov 2022	1.159	Nov 2023	-		1.159	4.480	8.772	-
<b>Subtotal</b>			1,331.622	94.389		166.265		195.590		-		195.590	Continuing	Continuing	N/A

**Remarks**

CPS Support: Lockheed Martin will work with the ZUMWALT-Class Combat System Integrator, ZUMWALT Shipbuilder, NAVSEA organizations, and other stakeholders to ensure the CPS Weapon System (WS) is compatible with ZUMWALT-Class DDGs and it meets threshold requirements defined in the derived requirements from the CPS Technical Objectives and Guidelines (TOG).

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	SS/CPFF	Raytheon : Portsmouth, RI	154.657	0.300	Dec 2021	0.000		4.170	Dec 2023	-		4.170	4.800	163.927	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPIF	CSC : Washington, DC	4.000	0.000		0.000		0.000		-		0.000	0.200	4.200	-
Operational Test & Evaluation (OT&E)	Various	Various : Various	138.399	6.500	Nov 2021	0.000		14.000	Nov 2023	-		14.000	5.411	164.310	-
Operational Test & Evaluation (OT&E)	C/CPIF	NSMA : Arlington, VA	23.008	0.000		0.000		0.000		-		0.000	2.400	25.408	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Dahlgren, VA	10.439	0.000		0.000		0.000		-		0.000	0.200	10.639	-
Developmental Test & Evaluation (DT&E)	WR	NSWC : Bethesda, MD	21.566	1.000	Nov 2021	0.000		0.000		-		0.000	1.825	24.391	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC : Philadelphia, PA	0.850	0.000		0.000		0.000		-		0.000	0.125	0.975	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0204202N / DDG-1000				Project (Number/Name) 2464 / DD(X) Sys Design, Dev & Integration					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	C/CPIF	NRL : Washington, DC	3.795	0.000		0.000		0.000		-		0.000	1.800	5.595	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	SCSC : Wallops, Is, VA	5.903	0.000		0.000		0.000		-		0.000	0.000	5.903	-
Prior Year Live Fire Test & Evaluation Not Funded FYDP (PYLFT&E)	C/CPIF	ROI : Mullica Hills, NJ	44.602	0.000		0.000		0.000		-		0.000	0.000	44.602	-
Operational Test & Evaluation (OT&E)	WR	COTF : Norfolk, VA.	17.961	1.000	Dec 2021	0.000		0.500	Dec 2023	-		0.500	2.634	22.095	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	Various : Various	0.747	0.000		0.000		0.000		-		0.000	0.000	0.747	-
Developmental Test & Evaluation (DT&E)	C/CPIF	NAVAIR : Not Specified	8.307	0.000		0.000		3.130	Dec 2023	-		3.130	3.600	15.037	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	TBD	NAVAIR : Not Specified	0.300	0.000		0.000		0.000		-		0.000	0.650	0.950	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPIF	BAE : Minneapolis, MN	54.064	0.000		0.000		0.000		-		0.000	0.000	54.064	-
Developmental Test & Evaluation (DT&E)	C/CPIF	Raytheon : Tucson, AZ	39.538	0.000		0.000		0.000		-		0.000	0.000	39.538	-
Developmental Test & Evaluation (DT&E)	WR	NUWC : Various	23.801	1.000	Oct 2021	0.000		0.000		-		0.000	1.657	26.458	-
Prior Year Live Fire Test & Evaluation Not Funded FYDP (PYLFT&E)	WR	Various : Various	44.000	0.000		0.000		0.000		-		0.000	21.000	65.000	-
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	Various	PEO IWS : Washington, DC	81.704	0.000		0.000		0.000		-		0.000	9.298	91.002	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC : Panama City, FL	7.485	0.000		0.000		0.000		-		0.000	9.200	16.685	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0204202N / DDG-1000	<b>Project (Number/Name)</b> 2464 / DD(X) Sys Design, Dev & Integration
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPIF	Lockheed Martin : Denver, CO	0.000	0.000		10.000	Nov 2022	10.688	Nov 2023	-		10.688	31.100	51.788	-
Developmental Test & Evaluation (DT&E)	WR	Various : Various	0.000	0.000		0.216	Nov 2022	0.350	Nov 2023	-		0.350	0.000	0.566	-
Developmental Test & Evaluation (DT&E)	WR	NSWC (CPS) : Dahlgren, VA	0.000	0.000		0.328	Nov 2022	1.050	Nov 2023	-		1.050	0.000	1.378	-
Developmental Test & Evaluation (DT&E)	SS/CPFF	APL/JHU : Baltimore, MD	0.000	0.000		1.715	Jan 2023	0.000	Jan 2024	-		0.000	0.000	1.715	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	NAVSEA : Washington, DC	6.455	0.000		0.000		0.000		-		0.000	0.000	6.455	-
<b>Subtotal</b>			691.581	9.800		12.259		33.888		-		33.888	95.900	843.428	N/A

**Remarks**

This funding covers the ZUMWALT CPS Surface Unique platform level testing requirements. This testing is being performed concurrently with Conventional Prompt Strike led tests for the common elements of the ZUMWALT and VIRGINIA Conventional Prompt Strike Weapon Systems. This funding also covers execution of the DDG 1000 Test and Evaluation Master Plan (TEMP).

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Conventional Prompt Strike Training and Curriculum Development	Various	Various : Various	0.000	6.600	Nov 2021	1.850	Nov 2022	2.300	Nov 2023	-		2.300	0.000	10.750	-
<b>Subtotal</b>			0.000	6.600		1.850		2.300		-		2.300	0.000	10.750	N/A

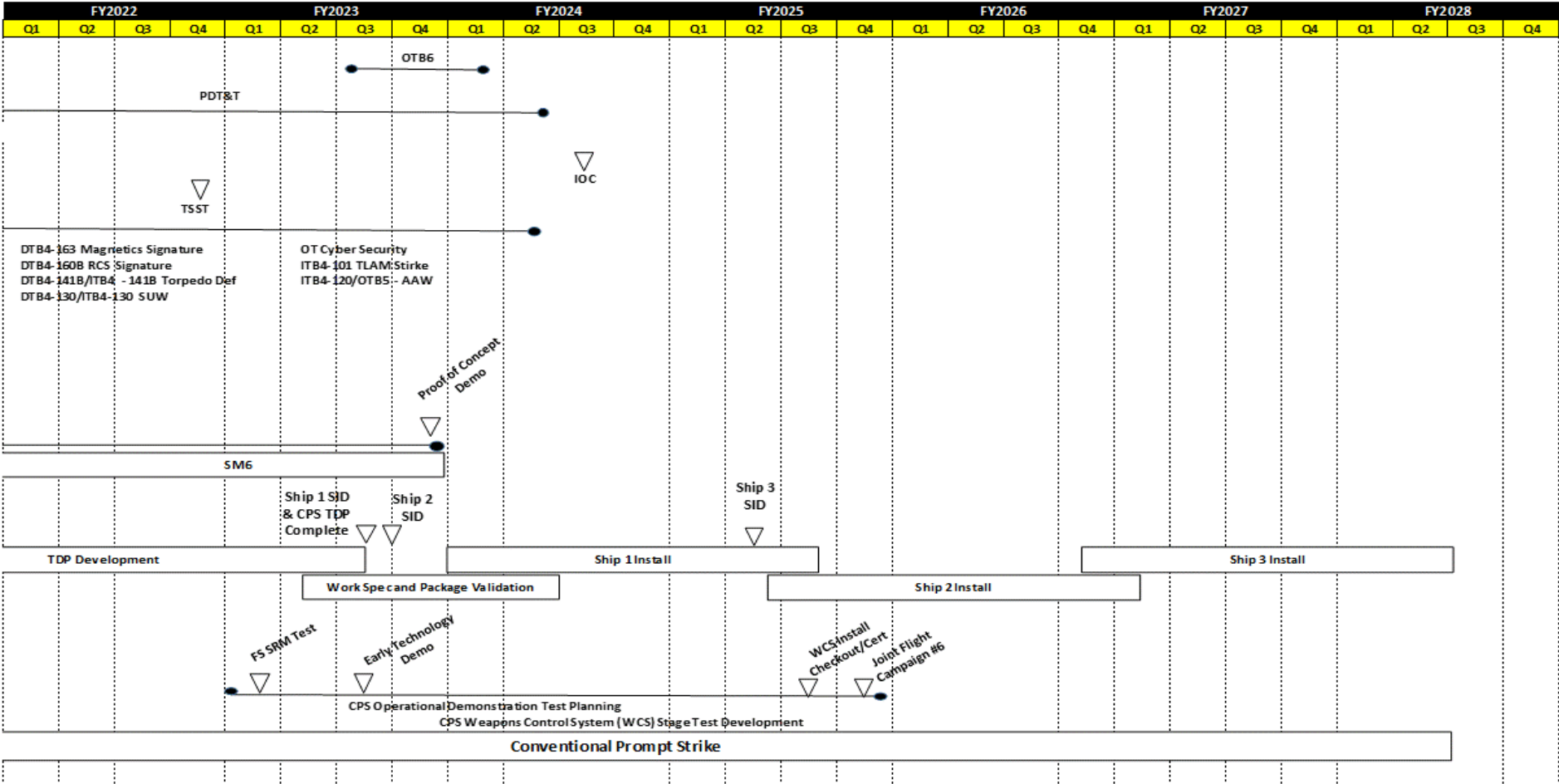
			Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			2,023.203	110.789	180.374	231.778	-	231.778	Continuing	Continuing	N/A

**Remarks**



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
1319 / 5								PE 0204202N / DDG-1000								2464 / DD(X) Sys Design, Dev & Integration			



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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0204202N / DDG-1000

Project (Number/Name)

2464 / DD(X) Sys Design, Dev &amp; Integration

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2464</b>				
Post Delivery Test & Trials	3	2022	2	2024
Initial Operational Capability (IOC)	3	2024	3	2024
Operational Test (OTB6)	3	2023	1	2024
Total Ship Survivability Test (TSST)	4	2022	4	2022
DTB4-141 A/B Torpedo Def, DTB4-130 SUW	2	2022	2	2022
Test Events (DTB4-130/ITB4-130 SUW, DTB4-141B/ITB4-141B Torp Def, DTB4-163 Magnetics, DTB4-160B RCS, ITB4-120/OTB5 AAW, OT Cyber Security, ITB4-101 Strike)	1	2022	2	2024
Standard Missile (SM6) Operational Demonstration	1	2022	4	2023
Conventional Prompt Strike	1	2022	2	2028
CPS Operational Demonstration Test Planning	1	2023	4	2025
First Stage Solid Rocket Motor Test Plume Analysis	1	2023	1	2023
USS ZUMWALT Early Technology Demonstration	3	2023	3	2023
CPS Weapons Control System (WCS) Stage Test Development	3	2024	4	2025
WCS Installation Checkout/Certification	3	2025	3	2025
Joint Flight Campaign #6	4	2025	4	2025

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)					PE 0301377N I (U)Countering Advanced Conventional Weapons (CACW)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	12.341	17.531	-	17.531	19.688	20.837	20.095	20.497	Continuing	Continuing
3103: Intelligence Engineering	0.000	0.000	12.341	17.531	-	17.531	19.688	20.837	20.095	20.497	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	0.000	12.341	17.516	-	17.516
Current President's Budget	0.000	12.341	17.531	-	17.531
Total Adjustments	0.000	0.000	0.015	-	0.015
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	0.015	-	0.015

**Change Summary Explanation**

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0301377N / (U)Countering Advanced C onventional Weapons (CACW)				Project (Number/Name) 3103 / Intelligence Engineering			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3103: <i>Intelligence Engineering</i>	0.000	0.000	12.341	17.531	-	17.531	19.688	20.837	20.095	20.497	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
<b>A. Mission Description and Budget Item Justification</b> The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.												
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>							FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	
<b>Title:</b> CACW  <div style="text-align: right;"><b>Articles:</b></div>							0.000	12.341	17.531	0.000	17.531	
							-	-	-	-	-	
<b>FY 2023 Plans:</b> The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.												
<b>FY 2024 Base Plans:</b> The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.												
<b>FY 2024 OCO Plans:</b> N/A												
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.												
<b>Accomplishments/Planned Programs Subtotals</b>							0.000	12.341	17.531	0.000	17.531	
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A												
<b>Remarks</b>												
<b>D. Acquisition Strategy</b> The details of this program element are classified and are submitted annually to Congress in the classified budget justification books.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0301377N / (U)Countering Advanced C onventional Weapons (CACW)					Project (Number/Name) 3103 / Intelligence Engineering				
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	Various	Various : Various	0.000	0.000		12.341	Jan 2023	17.531	Jan 2024	-		17.531	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		12.341		17.531		-		17.531	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		12.341		17.531		-		17.531	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
1319 / 5		PE 0301377N / (U)Countering Advanced Conventional Weapons (CACW)		3103 / Intelligence Engineering	

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3103																												
Classified																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0301377N / (U)Countering Advanced Conventional Weapons (CACW)	Project (Number/Name) 3103 / Intelligence Engineering

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3103				
Classified	1	2023	4	2028

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	585.027	135.538	135.252	174.271	-	174.271	179.713	168.220	163.655	164.827	Continuing	Continuing
2134: <i>Shipboard IW Exploit</i>	483.399	72.947	78.293	103.829	-	103.829	108.832	97.845	92.581	92.297	Continuing	Continuing
2174: <i>Intelligence Carry-On Program (ICOP)</i>	1.175	0.645	0.663	0.681	-	0.681	0.682	0.694	0.707	0.722	Continuing	Continuing
2227: <i>Distributed Common Ground System (DCGS-N) Inc 2</i>	65.166	30.748	29.339	31.322	-	31.322	31.290	31.810	32.371	33.022	327.060	612.128
2351: <i>MDA</i>	4.000	3.846	3.217	3.269	-	3.269	3.105	3.154	3.190	3.255	Continuing	Continuing
2363: <i>Remote Sensing Capability Development</i>	0.000	0.000	0.000	4.801	-	4.801	4.696	4.772	4.856	4.953	Continuing	Continuing
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	9.125	4.386	4.853	8.109	-	8.109	8.221	8.518	8.913	9.117	Continuing	Continuing
3786: <i>Tactical Edge Targeting</i>	22.162	22.966	18.887	22.260	-	22.260	22.887	21.427	21.037	21.461	Continuing	Continuing

<b>Program MDAP/MAIS Code:</b> <b>Project MDAP/MAIS Code(s):</b> M464
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**A. Mission Description and Budget Item Justification**

The Tactical Cryptologic Systems in this budget will implement digital system-of-systems engineering by using tools such as Model Based System Engineering (MBSE) and Digital Twins to create adaptable digital models to optimize system engineering from design, development and testing to operations and sustainment. Programs will use Development, Security and Operations (DevSecOps) processes for continuous development, integration, testing and deployment, along with common platform services such as Agile Core Services (ACS), for faster fielding of capability. Overall program development efforts include the investigation of emerging technologies through study, development and associated testing for feasibility of program insertion.

The Shipboard Information Warfare (IW) Exploit project consists of the Ship's Signal Exploitation Equipment (SSEE) Family of Systems (FoS) Increment F (and variants), Spectral, SSEE Modifications, Integrated Communications and Data Systems (ICADS) Increment II, Horizon and Distributed Operations (DO). These programs are classified Information Warfare/Electronic Warfare (IW/EW) tactical cryptologic systems supporting Command and Control, Battlespace Awareness, Electromagnetic Maneuver Warfare/Integrated Fires (EMW/IF) modes of global engagement. The systems enable power projection at the strategic level and operate in any environment including communications challenged situations across the globe. They provide maritime Signals Intelligence (SIGINT) and offensive Electronic Warfare (EW) capabilities at the tactical level, ensuring surface vessels' ability to disrupt, deny, degrade and defeat adversary (state and non-state) use of the radio frequency spectrum while simultaneously providing advanced Information Related Capabilities (IRC) to maritime warfighters. SSEE FoS detects adversary radio frequency emissions and uses them to provide critical tactical and strategic intelligence, situational awareness, and hostile threat assessment depriving the adversary of enhanced signals exploitation capability and limiting their ability to counterstrike. The systems are managed as incremental acquisition programs designed to pace

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>
<p>adversary communications technology development by using Research, Development, Test and Evaluation (RDT&amp;E) funding to rapidly develop and transition new technologies and to provide new capabilities as Pre-Planned Product Improvement (P3I) upgrades to the systems' hardware/software configuration. These upgrades focus on developing and delivering expanded offensive IW/EW and future Cyberspace capabilities in accordance with Presidential direction and in support of multiple Operational Plans (OPLANS).</p> <p>The details of the ICADS and Horizon sub-projects are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p>Distributed Common Ground System (DCGS) is a cooperative effort between the services, agencies, and the DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS - Navy (DCGS-N) is the Navy instance of the Under Secretary of Defense, Intelligence (USD (I)) DCGS FoS. DCGS-N system fulfills a critical mission set Afloat and Ashore. DCGS-N processes and exploits tactical and Imagery Intelligence (IMINT) and SIGINT, facilitates precision target geopositioning, mensuration, and imagery capabilities, integrates national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA), and shares Intelligence, Surveillance, Reconnaissance, and Targeting (ISR&amp;T) and Command and Control information via the DCGS Integration Backbone (DIB), Defense Intelligence Information Enterprise (DI2E), and Net-Centric Enterprise Services (NCES) standards with a wide range of customers. The DCGS-N program conducts research and assessments of tactically relevant, emerging technologies program insertion to ensure superiority in the intelligence domain.</p> <p>Intelligence Carry-On Program (ICOP) provides Indications and Warnings (I&amp;W), battlespace awareness/visualization, pattern of life analysis, Full-Motion Video (FMV) and Intelligence Surveillance and Reconnaissance (ISR) Processing, Exploitation and Dissemination (PED) capabilities in support of Unit-Level Navy surface (CG, DDG, and LPD classes) and expeditionary operations. The ICOP system includes a three-eyed ruggedized workstation that serves as a powerful afloat edge computing device that is capable of operating on all three security domains (NIPR, SIPR and JWICs) and an antenna/receiver set (called Communications Module 3 - CM3) that is used to ingest, process and exploit airborne sensor data. In addition to supporting multi-intelligence capabilities, ICOP/CM3 provides an end-to-end ISR PED architecture that includes processing organic shipboard camera systems to support Navy-wide Operational Task (OPTASK) Visual Information (Strategic Communications - "First to the Truth," pattern of life analysis and use of force/rules of engagement decisions).</p> <p>The Maritime Domain Awareness (MDA) project is a portfolio of partnerships that leverages the investments of other agencies in MDA tools and data, and funds the enhancement of those tools to meet Navy requirements for worldwide over-the-horizon vessel tracking and vessel data in support of DCGS-N, Navy Tactical Data Manager (NTDM) and Automated Information System (AIS) program. The MDA project manages the partnership with the Department of Transportation to leverage the Maritime Safety and Security Information System (MSSIS) and SeaVision, a non-Public Key Infrastructure (PKI) information sharing tool used by United States Indo-Pacific Command (INDOPACOM), European Command (EUCOM), Africa Command (AFRICOM), other USG agencies, and foreign partner nations to increase maritime security by sharing information. SeaVision is primarily accessed through a web front end where users can visualize tracks and run a growing set of analytics. SeaVision also has Application Programming Interfaces (APIs) for machine-to-machine data exchange with authorized systems including the Navy's AIS. The MDA project manages the partnership with the National Reconnaissance Office (NRO) to leverage the THRESHER system, which provides over-the-horizon vessel tracking and analysis tools. The MDA project is working with NRO to enhance THRESHER Maritime capabilities to improve the correlated and fused track feed over the Integrated Broadcast Service, which provides a track picture to IC systems including Fusion Analysis and Development Effort (FADE) Multi-Intelligence Spatial Temporal (MIST) and to improve the analytics provided by the THRESHER web front end on both JWICS and SIPR net.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				
Remote Sensing Capability Development (RSCD) project provides enhanced remote sensing capability to the Fleet to discriminate oceanographic phenomenon from the natural environment. This is achieved by automating tools for tasking, analysis, and dissemination of oceanographic data to increase coverage area, reduce timelines, and decrease analyst workload.						
The Cryptologic Carry-on Program (CCOP) rapidly develops augmented SIGINT capabilities in response to Combatant Command requirements by fielding quick-reaction surface, subsurface, and airborne cryptologic carry-on capabilities. There are ~124 cryptologic capable surface ships and shore sites in the current Navy inventory; each of these is a potential user of this carry-on equipment, depending on deployment schedules and tempo of operations. In addition, numerous other Naval and Coast Guard platforms serve as other potential users.						
The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		136.134	135.366	147.457	-	147.457
Current President's Budget		135.538	135.252	174.271	-	174.271
Total Adjustments		-0.596	-0.114	26.814	-	26.814
• Congressional General Reductions		-	-0.114			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-	-			
• Program Adjustments		-0.596	0.000	23.899	-	23.899
• Rate/Misc Adjustments		0.000	0.000	2.915	-	2.915
Change Summary Explanation						
The FY 2024 funding request was reduced by \$7.338 million to account for the availability of prior year execution balances.						
TECHNICAL:						
- Remote Sensing Capability Development (RSCD) Program (Project 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24; RSCD is a Military Intelligence Program (MIP), which aligns to PE 0304785N.						
SCHEDULE:						

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>
<p>Project 2134: SSEE INC-F            - Removed FY24 SSEE Inc F (all variants) FRP in accordance with the schedule.</p> <p>Project 2134: Spectral            - Spectral MS-B shifted from Q3FY22 to Q2FY23 in accordance with the schedule.            - PRA 4 shifted from Q3FY24 to Q2FY24 in accordance with the schedule.            - PRA IT shifted from Q2FY24 to Q3FY24 in accordance with the schedule.</p> <p>Project 2134: ICADS            - The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p>Project 2134: Horizon and Distributed Ops            - The details of the Horizon sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p>FUNDING:</p> <p>Program Element 0304785N funding increased (\$39.019M) from FY 2023 to FY 2024; Major increases/decreases noted below:</p> <p>Project 2134: SSEE INC-F (-\$1.564M)            - FY 2024 decrease is due to completion of development of the Medusa Increment B SIGINT and EW capability.</p> <p>Project 2134: Spectral (+\$4.100M)            - FY 2024 increase supports Developmental Testing (DT) and Operational Assessment (OA), including cybersecurity testing, of PRA systems to support a Limited Deployment Decision/Milestone C.</p> <p>Project 2134: SSEE Modifications (-\$0.481M)            - FY 2024 decrease due to the completion of development of the High Gain Information Operations (HGIO) antenna duplexing improvement capability.</p> <p>Project 2134: ICADS Inc II (+\$23.827M)            - The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p> <p>Project 2134: Horizon and Distributed Operations (DO) (-\$0.346)            - The details of the Horizon and Distributed Ops sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS	
<div>Project 2174: ICOP (+\$0.018M) - No significant changes from FY 2023 to FY 2024.</div> <div>Project 2227: DCGS-N Inc 2 (+\$1.983M) - FY 2024 increase is attributed to the development and integration of applications which deliver various capabilities to the Fleet.</div> <div>Project 2351: MDA (+\$0.052M) - No significant changes from FY 2023 to FY 2024.</div> <div>Project 2363: RSCD (+\$4.801M) - FY 2024 increase within this PE due to movement of project from PE 0604231N to PE 0304785N.</div> <div>Project 3091: CCOP (+\$3.256M) - FY 2024 increase is attributed to conducting Limited Objective Experiments (LOEs) for SWAMPDONKEY and VIKING VESPER.</div> <div>Project 3786: TET (+\$3.373M) - The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2134 / Shipboard IW Exploit			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2134: Shipboard IW Exploit	483.399	72.947	78.293	103.829	-	103.829	108.832	97.845	92.581	92.297	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Shipboard Information Warfare (IW) programs are classified Information Warfare/Electronic Warfare (IW/EW) tactical cryptologic systems supporting all facets of Assured Command and Control, Battlespace Awareness, and Electromagnetic Maneuver Warfare/Integrated Fires (EMW/IF) modes of global engagement. These programs provide both Carrier and Expeditionary Strike Group combatant commanders with real-time indications and warnings (I&W) through acquisition ("Find") and localization ("Fix") of Signals of Interest (SOIs) as well as the Surface Fleet's only EW non-kinetic capabilities ("Finish"). As incremental acquisition programs, Research, Development, Test and Evaluation (RDT&E) funding is required to: rapidly develop and integrate new technologies and associated new operational capabilities to pace both known and future signal threats and transition Pre-Planned Product Improvement (P3I) upgrades to the systems' hardware/software configuration; and deliver upgrades to fielded systems to satisfy Fleet requirements. Program funding incorporates P3I, new Commercial-Off-The-Shelf (COTS) or Government-Off-the-Shelf (GOTS) based technologies and software into the existing systems to address Fleet priorities and capability gaps or to combat known threats. Funding focuses on developing and delivering expanded non-kinetic EW capabilities and net-centric Service Oriented Architecture (SOA) to meet intended interoperability objectives through Fleet defined Common Core Architectures (CCA) to enable application hosting services. Capability development is in accordance with Presidential direction and strategic objectives while also supporting multiple Operational Plans (OPLANS), Concepts of Operations (CONOPS), and communications challenged or Anti-Access Area Denial (A2AD) scenarios (further details held at a higher classification level). Ship's Signal Exploitation Equipment (SSEE) Family of Systems (FoS) will continue development and integration of capabilities which can operate in communication challenged environments for the SSEE Increment F, SSEE Modifications, and Spectral systems. Funding will bring enhanced signals exploitation and expanded SOIs processing capabilities to fielded systems and supports development and integration efforts to fuse data produced and distributed by Shipboard IW/Information Operations (IO) systems with other intelligence data at multiple classification levels to provide data to shipboard combat systems to support kinetic and non-kinetic fires. Data fusion can also be used to enable a more complete understanding and more agile and effective exploitation within the electromagnetic spectrum.

SSEE Increment F (and its variants) is the primary, currently fielded system providing full-scope, simultaneous capability, while system variants bring a new dimension of afloat Signals Intelligence (SIGINT) capabilities with advanced scalability and modularity for mission planners to execute.

SSEE Modifications is a classified tactical signals intelligence frequency extension capability integrating and interoperating with the SSEE Increment F host system and is broken into two major components: Paragon, which provides simultaneous detection, collection, processing, IO, and display of communication intelligence data from hostile, high threat, and adversary platforms in select frequency ranges not prosecuted or countered with the host system; and the Graywing subsystem which is an advanced common data link system with SSEE Increment F systems.

Spectral is the Navy's next-generation SIGINT, EMW, and IO weapons system enabling both maritime IW/EW for both Naval Carrier and Expeditionary Strike Group operations. Spectral's primary objective is to provide our Navy's operators with the most capable Radio Frequency (RF) Signals Intelligence (SIGINT) collection and exploitation weapons system available to support the widest range of maritime strategic and tactical mission areas, including I&W, Targeting, and Ship's Self

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS	Project (Number/Name) 2134 / Shipboard IW Exploit		
Defense. Spectral provides scalable, mission configurable, and modular capabilities using a common user interface through an open software architecture to allow rapid integration and deployment of special use capabilities satisfying Navy and Joint maritime intelligence requirements beyond what existing systems can provide.					
The details of the ICADS and Horizon sub-projects are classified SECRET and are submitted annually to Congress in the classified budget justification books.					
In FY 2024, SSEE Increment F will continue P3I and software development to provide enhanced capabilities into the SSEE Increment F system and its variants by continuing to develop, refine, and test new, unexplored and unexploited cyber capabilities in alignment with Joint and service level cryptologic requirements. These include, but are not limited to future Medusa increments and techniques, signal collection and exploitation capabilities through added signal processing capacity and data flows (details held at higher classification), capability drop packages to deliver capability to the Fleet. Develop and deliver SIGINT and EW capabilities based upon the warfighter identified FY 2024 SOIs threats (updated annually) for integration into the SSEE Increment F systems (including its variants) and deliver as required to meet Fleet requirements. Continue the architecture, network performance specifications, and hosting environment to bring NSAnet afloat to all Naval platforms by deploying Navy Tactical Data Network (NTDN) while applying national cybersecurity standards and initiatives to bring advanced inter-strike group network capabilities able to operate in any environment while continuing to integrate cryptologic systems with shipboard combat systems for tightly coupled mission execution across the Navy.					
In FY 2024, Spectral will complete development of two PRA systems (Ashore and Afloat) in support of testing events and system certification and continue the delivery of capability drops to SSEE FoS. Continue development efforts to update and deliver new mission modules (including Combat System Integration modules) to capture modern signal sets (e.g., complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) which will be incrementally delivered to the Fleet through capability drops. Continue development efforts updating enhanced mission modules designed to capture modern signal sets (e.g., more complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) to be incrementally delivered to the Fleet through capability drops. Continue to build the CI/CD pipeline to improve modularity, automation, and remote delivery for future Capability Drops which will improve overall installation efficiency. Continue virtual software development environment for enhanced configuration management through Web-based services and applications for a robust, open, modular software development environment. Continue development and engineering for Spectral's Advanced RF aperture solutions and AESA topside and execute engineering design in topside maritime antennas to enable execution of full functionality and scope of Spectral requirements. Complete development activities to support combat systems integration with the Surface Electronic Warfare Improvement Program (SEWIP). Commence Developmental Testing (DT) and Operational Assessment (OA), including cybersecurity testing, of PRA systems to support a Limited Deployment Decision/Milestone C in FY25.					
In FY 2024, SSEE Modifications will continue hardware and software development to bring advanced capabilities to the Fleet for simultaneous detection, collection, processing, electronic warfare and display of communication intelligence data from hostile, high threat and adversary platforms in select extended frequency ranges not prosecuted today.					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2022	FY 2023	FY 2024 Base
Title: Ship's Signal Exploitation Equipment Inc F (SSEE Inc F)			7.019	6.496	4.932
Articles:			-	-	-
					FY 2024 OCO
					0.000
					FY 2024 Total
					4.932
					-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 2134 / Shipboard IW Exploit		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><b>FY 2023 Plans:</b></p> <p>- Continue Pre-Planned Product Improvement (P3I) and software development to provide enhanced capabilities into the Ship's Signal Exploitation Equipment (SSEE) Increment F system and its variants by continuing to develop, refine, and test new, unexplored and unexploited cyber capabilities in alignment with Joint and service level cryptologic requirements. These include, but are not limited to advanced Medusa applications and techniques, signal collection and exploitation capabilities through added signal processing capacity and data flows (details held at higher classification), capability drop packages to deliver capability to the Fleet.</p> <p>-Develop and deliver Signals Intelligence (SIGINT) and Electronic Warfare (EW) capabilities based upon the warfighter identified FY 2023 Signals of Interest (SOI) threats (updated annually) for integration into the SSEE Increment F systems (including its variants) and deliver as required to meet Fleet requirements.</p> <p>- Continue the architecture, network performance specifications, and hosting environment to bring NSAnet afloat to all Naval platforms, after completing NSAnet afloat on large deck platforms in FY22, by deploying Navy Tactical Data Network (NTDN) while applying national cybersecurity standards and initiatives to bring advanced inter-strike group network capabilities able to operate in any environment while continuing to integrate cryptologic systems with shipboard combat systems for tightly coupled mission execution across the Navy.</p> <p><b>FY 2024 Base Plans:</b></p> <p>- Continue P3I and software development to provide enhanced capabilities into the SSEE Increment F system and its variants by continuing to develop, refine, and test new, unexplored and unexploited cyber capabilities in alignment with Joint and service level cryptologic requirements. These include, but are not limited to future Medusa increments and techniques, signal collection and exploitation capabilities through added signal processing capacity and data flows (details held at higher classification), capability drop packages to deliver capability to the Fleet.</p> <p>- Develop and deliver SIGINT and EW capabilities based upon the warfighter identified FY 2024 SOIs threats (updated annually) for integration into the SSEE Increment F systems (including its variants) and deliver as required to meet Fleet requirements.</p> <p>- Continue the architecture, network performance specifications, and hosting environment to bring NSAnet afloat to all Naval platforms by deploying NTDN while applying national cybersecurity standards and initiatives to bring advanced inter-strike group network capabilities able to operate in any environment while continuing to integrate cryptologic systems with shipboard combat systems for tightly coupled mission execution across the Navy.</p> <p><b>FY 2024 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></p>						



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 2134 / Shipboard IW Exploit		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Ship's Signal Exploitation Equipment Inc F (SSEE Inc F) FY 2023 to FY 2024 decrease (-\$1.564M) due to completion of development of the Medusa Increment B SIGNIT and EW capability.						
Title: Spectral		43.724	44.921	49.021	0.000	49.021
Articles:		-	-	-	-	-
FY 2023 Plans:						
- Continue development of two Production Representative Articles (PRA) systems (Ashore and Afloat) in support of testing events and system certification and will commence the delivery of capability drops to Ship's Signal Exploitation Equipment (SSEE) Family of Systems (FoS) .						
- Continue development efforts to update and deliver new mission modules (including Combat System Integration modules) to capture modern signal sets (e.g., complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) which will be incrementally delivered to the Fleet through capability drops.						
- Continue development efforts updating enhanced mission modules designed to capture modern signal sets (e.g., more complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) to be incrementally delivered to the Fleet through capability drops.						
- Continue to build the Continuous Integration/Continuous Deliver (CI/CD) pipeline to improve modularity, automation, and remote delivery for future Capability Drops which will improve overall installation efficiency.						
- Continue virtual software development environment for enhanced configuration management through Web-based services and applications for a robust, open, modular software development environment.						
- Continue development and engineering for Spectral's Advanced Radio Frequency (RF) aperture solutions and Active Electronically Steered Array (AESA) topside and execute engineering design in topside maritime antennas to enable execution of full functionality and scope of Spectral requirements.						
- Conduct development activities to support combat systems integration with the Surface Electronic Warfare Improvement Program (SEWIP).						
FY 2024 Base Plans:						
- Complete development of two PRA systems (Ashore and Afloat) in support of testing events and system certification and continue the delivery of capability drops to SSEE FoS.						
- Continue development efforts to update and deliver new mission modules (including Combat System Integration modules) to capture modern signal sets (e.g., complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) which will be incrementally delivered to the Fleet through capability drops.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 2134 / Shipboard IW Exploit		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<div>- Continue development efforts updating enhanced mission modules designed to capture modern signal sets (e.g., more complex wider bandwidth, shorter duration, low probability of detect/low probability of intercept) to be incrementally delivered to the Fleet through capability drops.</div> <div>- Continue to build the CI/CD pipeline to improve modularity, automation, and remote delivery for future Capability Drops which will improve overall installation efficiency.</div> <div>- Continue virtual software development environment for enhanced configuration management through Web-based services and applications for a robust, open, modular software development environment.</div> <div>- Continue development and engineering for Spectral's Advanced RF aperture solutions and AESA topside and execute engineering design in topside maritime antennas to enable execution of full functionality and scope of Spectral requirements.</div> <div>- Complete development activities to support combat systems integration with the Surface Electronic Warfare Improvement Program (SEWIP).</div> <div>- Commence Developmental Testing (DT) and Operational Assessment (OA), including cybersecurity testing, of PRA systems to support a Limited Deployment Decision/Milestone C in FY25.</div> <div>FY 2024 OCO Plans: N/A</div> <div>FY 2023 to FY 2024 Increase/Decrease Statement: Spectral FY 2023 to FY 2024 increase (+\$4.100M) to conduct Developmental Testing (DT) and Operational Assessment (OA), including cybersecurity testing, of PRA systems to support a Limited Deployment Decision/ Milestone C.</div>						
<div>Title: Ship's Signal Exploitation Equipment Modifications (SSEE Modifications)</div> <div>Articles:</div> <div>FY 2023 Plans: - Continue hardware and software development to bring advanced capabilities to the Fleet for simultaneous detection, collection, processing, electronic warfare and display of communication intelligence data from hostile, high threat and adversary platforms in select extended frequency ranges not prosecuted today.</div> <div>FY 2024 Base Plans: - Continue hardware and software development to bring advanced capabilities to the Fleet for simultaneous detection, collection, processing, electronic warfare and display of communication intelligence data from hostile, high threat and adversary platforms in select extended frequency ranges not prosecuted today.</div> <div>FY 2024 OCO Plans:</div>		1.956 -	1.016 -	0.535 -	0.000 -	0.535 -

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 2134 / Shipboard IW Exploit		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: Ship's Signal Exploitation Equipment Modifications (SSEE Modifications) FY 2023 to FY 2024 decrease of -\$0.481M is due to completion of development of the High Gain Information Operations (HGIO) antenna duplexing improvement capability.						
Title: Horizon and Distributed Operations (DO)  Articles:		18.700 -	24.780 -	24.434 -	0.000 -	24.434 -
FY 2023 Plans: The details of the Horizon and Distributed Operations (DO) sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.						
FY 2024 Base Plans: The details of the Horizon and Distributed Operations (DO) sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The details of the Horizon and Distributed Operations (DO) sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.						
Title: Integrated Communications and Data Systems Increment II (ICADS Inc II)  Articles:		1.548 -	1.080 -	24.907 -	0.000 -	24.907 -
FY 2023 Plans: The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.						
FY 2024 Base Plans: The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>		<b>Project (Number/Name)</b> 2134 / <i>Shipboard IW Exploit</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>				<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.								
<b>Accomplishments/Planned Programs Subtotals</b>				72.947	78.293	103.829	0.000	103.829

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN / 2360: <i>Shipboard IW Exploit</i>	261.735	289.974	379.230	-	379.230	368.023	397.560	418.278	429.876	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The Shipboard Information Warfare (IW) family of systems are incremental acquisition programs, which are required to rapidly develop and integrate new technologies and associated new operational capabilities to pace both known and future signal threats and transition as Pre-Planned Product Improvement (P3I) upgrades into the system's open systems architecture hardware/software configurations and deliver to fielded systems as required to satisfy Fleet needs. Program funding incorporates P3I, new Commercial-Off-The-Shelf (COTS) or Government-Off-the-Shelf (GOTS) based technologies, and software into the existing systems to address Fleet needed priorities, capability gaps or combat known threats and utilizes various competitive multiple award and single source contract activities including Prime Mission Product to develop third-party hardware and software solutions.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2134 / Shipboard IW Exploit					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development Prior Years	Various	Various : Various	291.496	0.000		0.000		0.000		-		0.000	0.000	291.496	-
Software Development SSEE	C/CPFF	Classified Contracts : Classified Contracts	15.522	4.978	Dec 2021	4.661	Dec 2022	3.223	Dec 2023	-		3.223	Continuing	Continuing	Continuing
System Engineering SSEE	C/CPFF	Classified Contracts : Classified Contracts	1.810	0.719	Dec 2021	0.683	Dec 2022	0.525	Dec 2023	-		0.525	Continuing	Continuing	Continuing
Software Development SSEE	WR	NIWC PAC : San Diego, CA	1.223	0.405	Oct 2021	0.384	Oct 2022	0.349	Oct 2023	-		0.349	Continuing	Continuing	Continuing
Hardware Development SSEE	WR	NIWC PAC : San Diego, CA	0.942	0.310	Oct 2021	0.295	Oct 2022	0.227	Oct 2023	-		0.227	Continuing	Continuing	Continuing
Software Development SSEE	WR	NRL : Washington, DC	4.250	1.337	Oct 2021	1.269	Oct 2022	0.975	Oct 2023	-		0.975	Continuing	Continuing	Continuing
Hardware Development Spectral	C/CPFF	Classified Contracts : Classified Contracts	26.909	24.670	Dec 2021	25.038	Dec 2022	25.683	Dec 2023	-		25.683	Continuing	Continuing	Continuing
Software Development Spectral	C/CPAF	Classified Contracts : Classified Contracts	5.278	8.087	Dec 2021	7.792	Dec 2022	7.919	Dec 2023	-		7.919	Continuing	Continuing	Continuing
System Engineering Spectral	WR	NIWC PAC : San Diego, CA	7.606	4.550	Oct 2021	4.598	Oct 2022	5.213	Oct 2023	-		5.213	Continuing	Continuing	Continuing
Requirements Analysis Spectral	C/CPFF	Classified Contracts : Classified Contracts	0.862	0.471	Dec 2021	0.493	Dec 2022	0.501	Dec 2023	-		0.501	Continuing	Continuing	Continuing
System Engineering Spectral	C/CPFF	Classified Contracts : Classified Contracts	7.823	4.287	Dec 2021	4.483	Dec 2022	4.556	Dec 2023	-		4.556	Continuing	Continuing	Continuing
ICADS-Classified	Various	Not Specified : Not Specified	13.657	1.461	Dec 2021	1.019	Dec 2022	24.907	Dec 2023	-		24.907	Continuing	Continuing	Continuing
Horizon - Classified	Various	Not Specified : Not Specified	0.000	18.700	Dec 2021	24.780	Dec 2022	24.434	Dec 2023	-		24.434	Continuing	Continuing	Continuing
Subtotal			377.378	69.975		75.495		98.512		-		98.512	Continuing	Continuing	N/A
Remarks FY2024 funding increase due to ICADS. The details of the ICADS sub-project are classified SECRET and are submitted annually to Congress in the classified budget justification books.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2134 / Shipboard IW Exploit					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Prior Years	Various	Various : Various	29.574	0.000		0.000		0.000		-		0.000	0.000	29.574	-
System Eng Mgmt SSEE	C/CPFF	NIWC LANT/PAC : Various	0.575	0.232	Oct 2021	0.220	Oct 2022	0.169	Oct 2023	-		0.169	Continuing	Continuing	Continuing
Subtotal			30.149	0.232		0.220		0.169		-		0.169	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	27.582	0.000		0.000		0.000		-		0.000	0.000	27.582	-
Developmental Test & Evaluation (DT&E)	C/CPFF	Classified Contracts : Classified Contracts	1.271	0.394	Dec 2021	0.391	Dec 2022	1.660	Dec 2023	-		1.660	0.000	3.716	-
Developmental Test & Evaluation (DT&E)	WR	NIWC LANT/PAC : Various	1.934	0.600	Oct 2021	0.391	Oct 2022	1.666	Oct 2023	-		1.666	0.000	4.591	-
Developmental Test & Evaluation (DT&E)	Various	Classified : Classified	0.738	0.087	Oct 2021	0.061	Oct 2022	0.000	Oct 2023	-		0.000	Continuing	Continuing	Continuing
Subtotal			31.525	1.081		0.843		3.326		-		3.326	Continuing	Continuing	N/A
Remarks															
FY2024 funding increase due to Spectral Developmental Testing (DT) and Operational Assessment (OA), including cybersecurity testing, of PRA systems to support a Limited Deployment Decision/Milestone C.															
Each Line Represents (by sort order): 1) Test & Evaluation Prior Years (All Programs); 2) Developmental Test & Evaluation SSEE and Spectral; 3) Developmental Test & Evaluation SSEE and Spectral; 4) ICADS-Classified.															
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Prior Years	Various	Various : Various	41.312	0.000		0.000		0.000		-		0.000	0.000	41.312	-
Acquisition Management Spectral	C/CPFF	BAH : San Diego, CA	3.035	1.659	Oct 2021	1.735	Oct 2022	1.822	Oct 2023	-		1.822	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2134 / Shipboard IW Exploit					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			44.347	1.659		1.735		1.822		-		1.822	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			483.399	72.947		78.293		103.829		-		103.829	Continuing	Continuing	N/A
Remarks															
- The details of the ICADS and Horizon sub-projects are classified SECRET and are submitted annually to Congress in the classified budget justification books.															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

**Appropriation/Budget Activity**

1319 / 5

**R-1 Program Element (Number/Name)**

PE 0304785N / *ISR & INFO OPERATIONS*

**Project (Number/Name)**

2134 / *Shipboard IW Exploit*

**SSEE Inc F (all variants)**

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Software Development</b>	Baseline Software Development																											
SSEE Inc F																												
Baseline SW Development & Capability Drops			▲	Capability Drop			△	Capability Drop			△	Capability Drop			△	Capability Drop			△	Capability Drop			△	Capability Drop			△	Capability Drop
Pre-Planned Product Improvement (P3I)	FY22 SOI Dev				FY23 SOI Dev				FY24 SOI Dev				FY25 SOI Dev				FY26 SOI Dev				FY27 SOI Dev				FY28 SOI Dev			
A2AD Capability Development																												
Joint Interface Dev																												
NSA Afloat (Large Deck Dev)																												
	NSA Afloat Capability Development																											
<b>Test &amp; Evaluation</b>																												
Follow-on Operational Test & Evaluation																												
Joint Interoperability Test Command Certification																												
<b>Production</b>																												
SSEE Inc F (all variants)																												
FRP		▲					▲																					
		FY 22					FY 23																					
<b>Installation</b>																												
Installs																												
		FY22					FY23						FY24				FY25											

Remarks:

- 1) Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Inc F)
- 2) Production milestones reflect contract award dates.
- 3) FY22-FY23 Production reflects SSEE Inc F (V)7/8 units only



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0304785N / ISR & INFO OPERATIONS

Project (Number/Name)

2134 / Shipboard IW Exploit

## Spectral

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																												
<b>Milestones</b>																												
Milestone B																												
Limited Deployment Decision / Milestone C																												
Full Rate Production																												
<b>System Development</b>																												
Capability Drop & PRA Development																												
Production Representative Articles (PRA)																												
Requirements Development Package 1																												
Fleet Capability Release 1																												
Requirements Development Package - 2																												
Fleet Capability Release 2																												
Requirements Development Package - 3																												
Fleet Capability Release 3																												
Topside Antenna Development																												
<b>Test and Evaluation</b>																												
PRA IT																												
Operational Assessment (OA)																												
FCR-1 (IT)																												
IOT&E																												
<b>Production Milestones</b>																												
LRIP																												
FRP																												
Remarks:																												
Shipboard Information Warfare (IW) Exploit / 2134 (Spectral)																												

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0304785N / ISR &amp; INFO OPERATIONS

Project (Number/Name)

2134 / Shipboard IW Exploit

## SSEE Modifications

Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Installation</b>																												
FRP																												
<b>Software Development</b>																												
Baseline SW Development																												
Capability Drops																												
Pre-Planned Product Improvement (P3I)																												
Joint Interoperability Test Command Certification																												
<b>Production</b>																												
SSEE Modifications FRP																												

Remarks:

- 1) Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Mods)
- 2) Production Milestones reflect contract award dates
- 3) SSEE Mods software development integrated and tested in conjunction with SSEE Inc F software builds

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>	<b>Project (Number/Name)</b> 2134 / <i>Shipboard IW Exploit</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>SSEE Inc F</b>				
Production: Inc F - FY22 FRP Production Milestone	2	2022	2	2022
Production: Inc F - FY23 FRP Production Milestone	2	2023	2	2023
Software Development: Inc F - FY22 Capability Drop	3	2022	3	2022
Software Development: Inc F - FY23 Capability Drop	3	2023	3	2023
Software Development: Inc F - FY24 Capability Drop	3	2024	3	2024
Software Development: Inc F - FY25 Capability Drop	3	2025	3	2025
Software Development: Inc F - FY26 Capability Drop	3	2026	3	2026
Software Development: Inc F - FY27 Capability Drop	3	2027	3	2027
Software Development: Inc F - FY28 Capability Drop	3	2028	3	2028
Software Development: Inc F - FY22 SOI Development	1	2022	4	2022
Software Development: Inc F - FY23 SOI Development	1	2023	4	2023
Software Development: Inc F - FY24 SOI Development	1	2024	4	2024
Software Development: Inc F - FY25 SOI Development	1	2025	4	2025
Software Development: Inc F - FY26 SOI Development	1	2026	4	2026
Software Development: Inc F - FY27 SOI Development	1	2027	4	2027
Software Development: Inc F - FY28 SOI Development	1	2028	4	2028
Software Development: Inc F - A2AD Capability Development	1	2022	2	2022
Software Development: Inc F - Joint Interface Development	1	2022	3	2022
Software Development: Inc F - NSA Afloat (Large Deck Development)	1	2022	1	2023
Software Development: Inc F - NSA Afloat Capability Development	1	2023	4	2025
Installation: Inc F - FRP Installation FY21	1	2022	1	2022
Installation: Inc F - FRP Installation FY22	2	2022	1	2023

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0304785N / ISR &amp; INFO OPERATIONS

## Project (Number/Name)

2134 / Shipboard IW Exploit

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Installation: Inc F - FRP Installation FY23	2	2023	1	2024
Installation: Inc F - FRP Installation FY24	2	2024	1	2025
Installation: Inc F - FRP Installation FY25	2	2025	1	2026
<b>Spectral</b>				
Spectral - Milestone B	2	2023	2	2023
Spectral - Limited Deployment Decision (LDD)/ Milestone C	3	2025	3	2025
Spectral - Full Rate Production	4	2027	4	2027
Spectral - Production Representative Articles (PRA) Ashore	1	2024	1	2024
Spectral - Production Representative Articles (PRA) Afloat	2	2024	2	2024
Spectral - EDM Development /PRA Development	1	2022	2	2024
Spectral - Advanced RF Aperture Development	1	2022	4	2025
Spectral - Fleet Capability Release 1	4	2024	2	2026
Spectral - Requirements Development Package (RDP) - 1	4	2024	4	2024
Spectral - Fleet Capability Release 2	1	2027	4	2028
Spectral - Requirements Development Package (RDP) - 2	1	2027	1	2027
Spectral - FCR-1 (IT)	4	2026	4	2026
Spectral - PRA IT	3	2024	3	2024
Spectral - Initial Operational Test & Evaluation (IOT&E)	1	2027	3	2027
Spectral - Operational Assessment (OA)	4	2024	2	2025
Spectral - Low Rate Initial Production (LRIP)	3	2025	3	2027
Spectral - Full Rate Production (FRP)	3	2027	4	2028
<b>SSEE Modifications</b>				
SSEE Modifications - FRP Installation FY21	1	2022	1	2022
SSEE Modifications - FRP Installation FY22	2	2022	1	2023
SSEE Modifications - FRP Installation FY23	2	2023	1	2024
SSEE Modifications - FRP Installation FY24	2	2024	1	2025

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2024 Navy

Date: March 2023

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0304785N / ISR &amp; INFO OPERATIONS

## Project (Number/Name)

2134 / Shipboard IW Exploit

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSEE Modifications - FRP Installation FY25	2	2025	1	2026
SSEE Modifications - Baseline Software Development	1	2022	2	2027
SSEE Modifications - FY22 Capability Drop	3	2022	3	2022
SSEE Modifications - FY23 Capability Drop	3	2023	3	2023
SSEE Modifications - FY24 Capability Drop	3	2024	3	2024
SSEE Modifications - FY25 Capability Drop	3	2025	3	2025
SSEE Modifications - FY26 Capability Drop	3	2026	3	2026
SSEE Modifications - FY27 Capability Drop	3	2027	3	2027
SSEE Modifications - Next Generation - Graywing Development	1	2022	4	2022
SSEE Modifications - FY22 FRP Production Modification	2	2022	2	2022
SSEE Modifications - FY23 FRP Production Modification	2	2023	2	2023
SSEE Modifications - FY24 FRP Production Modification	2	2024	2	2024
<b>ICADS Inc II</b>				
Classified	1	2022	1	2028
<b>Horizon and Distributed Operations (DO)</b>				
Classified	1	2022	1	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2174 / Intelligence Carry-On Program (ICOP)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2174: Intelligence Carry-On Program (ICOP)	1.175	0.645	0.663	0.681	-	0.681	0.682	0.694	0.707	0.722	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Intelligence Carry-On Program (ICOP) provides Indications and Warnings (I&W), battlespace awareness/visualization, pattern of life analysis, Full-Motion Video (FMV) and Intelligence Surveillance and Reconnaissance (ISR) Processing, Exploitation and Dissemination (PED) capabilities in support of Unit-Level Navy surface (CG, DDG, and LPD classes) and expeditionary operations. The ICOP system includes a three-eyed ruggedized workstation that serves as a powerful afloat edge computing device that is capable of operating on all three security domains (NIPR, SIPR, and JWICs) and an antenna/receiver set (called Communications Module 3 - CM3) that is used to ingest, process and exploit airborne sensor data. In addition to supporting multi-intelligence capabilities, ICOP/CM3 provides an end-to-end ISR PED architecture that includes processing organic shipboard camera systems to support Navy-wide Operational Task (OPTASK) Visual Information (Strategic Communications - "First to the Truth," pattern of life analysis and use of force/rules of engagement decisions).

In FY 2024, ICOP will continue to conduct a formal system engineering assessment of the system design for the Sensitive Compartmented Information (SCI) ICOP Mission Module. This will lead into the development and testing of the mission module. In addition, the ICOP engineering team will continue the containerization of the ICOP software stack, which will allow an additional variant to be employed on platforms that have severe space constraints such as LCS and DDG 1000 platforms.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Intelligence Carry-On Program (ICOP)	0.645	0.663	0.681	0.000	0.681
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> <ul style="list-style-type: none"> <li>- Commence a formal system engineering assessment of the Sensitive Compartmented Information (SCI) ICOP Mission Module system design.</li> <li>- Commence SCI ICOP Mission Module development and testing.</li> <li>- Continue system engineering efforts to containerize the ICOP software stack.</li> <li>- Continue integration testing with NAVAIR-sponsored manned and unmanned platforms to allow ICOP to establish data links for access to the aircrafts' full-motion video and targeting data. Supports DWO-sponsored Information Warfare Family of Systems initiative.</li> <li>- Continue Fusion Analysis and Development Effort (FADE) Desktop integration into the SCI ICOP Mission module baseline. FADE capability will support TIFE efforts (renamed to High Side Fusion-Afloat (HSF-A)).</li> </ul>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy								Date: March 2023				
Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2174 / Intelligence Carry-On Program (ICOP)				
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>								<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<p>- Continue to leverage Condition-Based Maintenance Plus (CBM+) SBIR Phase III contract with Charles River Analytics to mature a proactive sustainment approach to ICOP hardware deployed aboard afloat units.</p> <p><b>FY 2024 Base Plans:</b></p> <p>- Continue a formal system engineering assessment of the Sensitive Compartmented Information (SCI) ICOP Mission Module system design.</p> <p>- Continue system engineering efforts to containerize the ICOP software stack.</p> <p>- Continue integration testing with NAVAIR-sponsored manned and unmanned platforms to allow ICOP to establish data links for access to the aircrafts' full-motion video and targeting data. Supports DWO-sponsored Information Warfare Family of Systems initiative.</p> <p>- Finalize Fusion Analysis and Development Effort (FADE) Desktop integration into the SCI ICOP Mission module baseline and conduct sea test. FADE capability will support High Side Fusion-Afloat (HSF-A)) and Over-the-Horizon Targeting (OTH-T), a CNO priority.</p> <p><b>FY 2024 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b></p> <p>No significant changes from FY 2023 to FY 2024.</p>												
<b>Accomplishments/Planned Programs Subtotals</b>								0.645	0.663	0.681	0.000	0.681
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>	
• OPN/2914: Distributed Common Ground System-Navy (DCGS-N)	16.691	15.606	16.579	-	16.579	16.452	16.881	17.249	17.631	318.640	761.693	
<b>Remarks</b>												
<b>D. Acquisition Strategy</b>												
ICOP will continue to implement a cross-decking methodology that incorporates a two phased delivery, a permanent foundation kit which supports carry-on equipment (rotatable pool of assets) to include workstation and Communications Module 3 (CM3) antenna / receiver set. This methodology supports speed-to-fleet principles. SCI ICOP Mission Module will employ the same cross-decking methodology.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2174 / Intelligence Carry-On Program (ICOP)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ICOP Development	WR	NIWC PAC : San Diego, CA	0.901	0.645	Oct 2021	0.663	Oct 2022	0.681	Oct 2023	-		0.681	Continuing	Continuing	Continuing
DCGS-N (Inc 1) Development	Various	Various : Various	0.274	0.000		0.000		0.000		-		0.000	0.000	0.274	-
Subtotal			1.175	0.645		0.663		0.681		-		0.681	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.175	0.645		0.663		0.681		-		0.681	Continuing	Continuing	N/A
Remarks															



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**Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy**

**Date:** March 2023

### Appropriation/Budget Activity

1319 / 5

### R-1 Program Element (Number/Name)

PE 0304785N / ISR &amp; INFO OPERATIONS

Project (Number/Name)

2174 I Intelligence Carry-On Program  
(ICOP)

[illegible]

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS	Project (Number/Name) 2174 / Intelligence Carry-On Program (ICOP)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2174				
ICOP Systems Engineering and Test Activities	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2227: Distributed Common Ground System (DCGS-N) Inc 2	65.166	30.748	29.339	31.322	-	31.322	31.290	31.810	32.371	33.022	327.060	612.128
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: M464												

**A. Mission Description and Budget Item Justification**

DCGS-N Inc 2 is the Navy Service component version of the DCGS Family of Systems (FoS) and is deployed on force level platforms and ashore nodes to include Maritime Operations Centers (MOCs), delivering Intelligence, Surveillance, Reconnaissance, and Targeting (ISR&T) capabilities to the warfighter. DCGS-N Inc 2 is also a critical component of the Intelligence, Surveillance, and Reconnaissance (ISR) FoS, which is comprised of DCGS-N, Intelligence Carry-On Program (ICOP), Maritime Domain Awareness (MDA), Tactical Edge Targeting (TET), and Remote Sensing Capability Development (RSCD). The Programs within the ISR FoS deliver a robust suite of complimentary ISR capabilities to the Navy and Marine Corps. DCGS-N operates during peacetime, crisis, and war in afloat and shore-based operational configurations, sharing information and intelligence between the Navy, DoD, and IC. It serves as a tactical gateway to share Navy-unique sensor data (e.g., MQ-25, RAQ-35, MQ-4, and P-8, etc.) across the IC. DCGS-N will enable users to identify, locate, and confirm threats and targets using the all-source data store, support Intelligence Preparation of the Operational Environment, battle management, target nomination, and execute collection planning and requests. The program integrates this data with available Command and Control systems, weapons, combat, and Meteorological and Oceanographic forecast and sensor data. DCGS-N provides situational awareness to the operational decision-maker.

As a Software Acquisition Program (SWP), DCGS-N Inc 2 decomposes the validated Information Systems Capability Development Document (IS-CDD) requirements into six modular capability areas (CA), further defined in the DCGS-N Capabilities Need Statement (CNS), and implement agile development processes to incrementally deliver capability through the entire life cycle of the program. In alignment with the DCGS-N User Agreement (UA), requirements are prioritized through the DCGS-N Requirements Governance Board (DRGB). The Capability Needs Statement (CNS) is reviewed annually and scopes DCGS-N Inc 2 development priorities and inform near-term programmatic planning aligned to the program roadmap. User feedback informs each Iterative Release (IR) through a robust requirements process characterized by annual Fleet User Symposiums and consistent action officer coordination.

DCGS-N Inc 2 maximizes use of government off-the-shelf (GOTS) and commercial software tools and standards. DCGS-N uses an enduring Adopt-Buy-Create (ABC) methodology to identify and integrate mature GOTS and commercial items currently in use with the Defense Intelligence Security Enterprise, the DCGS FoS, broader IC Information Technology Enterprise, and existing Joint and Navy Science and Technology efforts. The program employs an agile approach to requirements management, new software development, commercial items, GOTS integration, testing, and delivery of incremental functionality aligned to user priorities. Features will be completed within the financial resources allocated to the program, with less important features deferred and prioritized based on user requirements

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2		
FY 2024 continues software integration and improvements resulting in IRs that are ready for testing/fielding. Additionally, DCGS-N will leverage the development and integration of applications which deliver Over the Horizon Targeting (OTH-T) and Command, Control, Communications, Computers and Counter-Intelligence (C5) ISR capabilities to the fleet.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Distributed Common Ground System-Navy (DCGS-N) Increment 2		30.748	29.339	31.322	0.000	31.322
Articles:		-	-	-	-	-
FY 2023 Plans:						
- Begin to leverage the development and integration of applications which deliver Over the Horizon Targeting (OTH-T) and Command, Control, Communications, Computers and Counter-Intelligence (C5) ISR capabilities to the fleet.						
- Continue software integration and improvements resulting in IRs that are ready for testing/fielding.						
- Begin optimization of Development, Security and Operations (DevSecOps) processes and environments to increase the rate of release for the fielding of Iterative Releases (IRs) by using the Enterprise infrastructure.						
- Commence the design and development of mission modules based systems for accelerated deployment.						
- Continue to design architecture which supports Denied, Disconnected, Intermittent and Limited (D-DIL) operations and development of the fundamental infrastructure delivering capability at the tactical edge.						
- Commence the enhancement and expansion of the Knowledge Base (KB) to support new Joint and maritime data sets such as Machine-assisted Analytic Rapid repository System (MARS).						
- Continue to assess developing technologies for incorporation into future baselines in support of emerging fleet capability gaps. Continue to work closely with governmental and non-governmental agencies and organizations in order to align fleet requirements with capabilities across various Technology Readiness Levels (TRLs).						
- Continue to target a Fleet demonstration/exercise (TRIDENT WARRIOR, Enterprise Challenge and other Fleet exercises) to test system in a large-scale, at-sea experiment.						
- Commence DCGS Enterprise Node (DEN) implementation of Common Data Fabric (CDF) for data sharing.						
FY 2024 Base Plans:						
- Leverage the development and integration of Counter-Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting (C-C5ISR) capabilities for the Fleet.						
- Leverage the development and integration of Real-Time Spectrum Operations (RTSO) capabilities for the Fleet.						
- Leverage the development and integration of Minotaur capabilities for the Fleet.						
- Continue modernization of targeting hardware.						
- Continue software integration and improvements resulting in IRs that are ready for testing/fielding.						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>		<b>Project (Number/Name)</b> 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<ul style="list-style-type: none"> <li>- Continue optimization of DevSecOps processes and environments to increase the rate of release for the fielding of IRs by using the Enterprise infrastructure.</li> <li>- Commence the design and development of mission modules based systems for accelerated deployment.</li> <li>- Continue deployment of DCGS-N Ashore System (DAS) across Maritime Operations Centers (MOCs) and training sites.</li> <li>- Continue the enhancement and expansion of the KB to support new Joint and maritime data sets such as MARS.</li> <li>- Continue to assess developing technologies for incorporation into future baselines in support of emerging Fleet capability gaps.</li> <li>- Continue to work closely with governmental and non-governmental agencies and organizations in order to align Fleet requirements with capabilities across various Technology Readiness Levels (TRLs).</li> <li>- Continue to target a Fleet demonstration/exercise (TRIDENT WARRIOR, Enterprise Challenge and other Fleet exercises) to test system in a large-scale, at-sea experiment.</li> <li>- Continue DCGS Enterprise Node (DEN) implementation of Common Data Fabric (CDF) for data sharing.</li> </ul> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase of \$1.983M from FY 2023 to FY 2024 is attributed to the development and integration of applications which deliver various capabilities to the Fleet.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	30.748	29.339	31.322	0.000	31.322

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2914: <i>Distributed Common Ground System-Navy (DCGS-N)</i>	16.691	15.606	16.579	-	16.579	16.452	16.881	17.249	17.631	318.640	761.693

**Remarks**

**D. Acquisition Strategy**

The DCGS-N Inc 2 acquisition strategy (AS) will follow the Software Acquisition Pathway (SWP) to incrementally deliver capability through the entire lifecycle of the program. The evolutionary approach will consist of multiple, iterative releases (IR) that collectively update the system to meet or exceed all Capability Needs Statement

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>	<b>Project (Number/Name)</b> <i>2227 / Distributed Common Ground System (DCGS-N) Inc 2</i>
<p>(CNS) and Information Systems Capability Development Document (IS-CDD), Key Performance Parameter (KPP) / Key System Attribute (KSA) threshold requirements. Each product line will be integrated and adapted to ensure viability and effectiveness of capabilities for operational use. The approach incorporates test and evaluation and cyber hardening requirements in an integrated Development, Security and Operations (DevSecOps) environment and is integral to the program's IR delivery methodology.</p> <p>Key elements of the DCGS-N Inc 2 AS include frequent iterative releases (IR), maximum leverage of mature capabilities through a multi-faceted ABC methodology, a robust Open System Architecture (OSA) centered on a core knowledge base with common Application Programming Interfaces (APIs), flexible contracting, tailored test and evaluation (T&amp;E) strategy, and release authorizations informed by demonstrations and user acceptance. In accordance with DoDI 5000.02 requirements, DCGS-N Inc 2 IRs will incrementally deliver major capability releases when the system meets user defined Minimum Viable Product (MVP), Minimum Viable Capability Release (MVCR), and a culminating Operational Release (OR). The Adopt-Buy-Create (ABC) methodology shall incorporate new product functionality and on-ramp new Capability Area (CA) informed by a Continuous Technology Assessment (CTA) throughout the lifecycle of the program. Industry standards for agile development will be implemented to increase speed and consistencies of deliveries, enabling the program office to rapidly respond to Fleet requirements.</p>		

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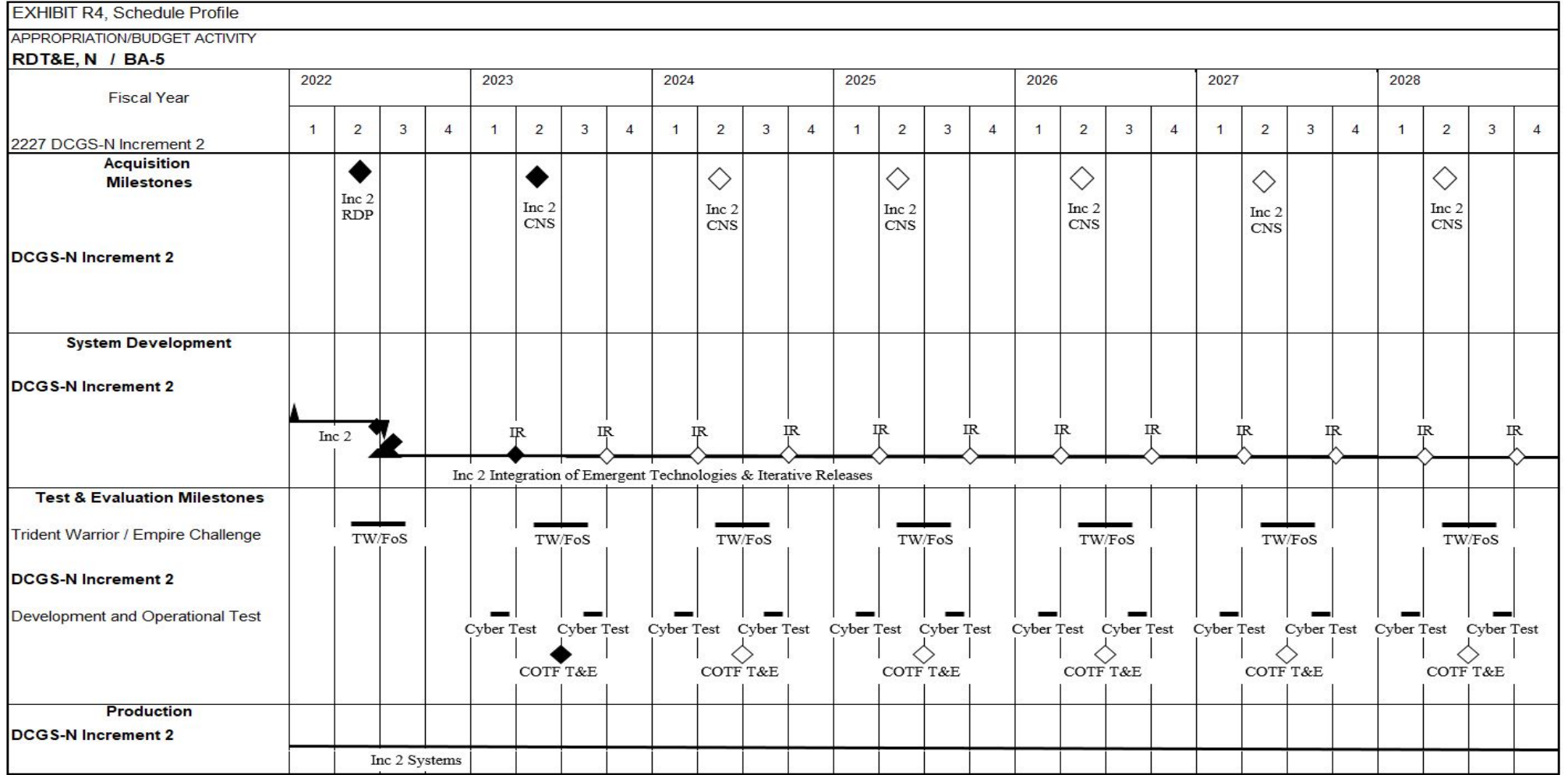
Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development	C/CPFF	TBD : TBD	0.000	0.000		6.055	Nov 2022	6.340	Nov 2023	-		6.340	0.000	12.395	-
Primary Software Development	C/CPFF	LEIDOS : Reston, VA	33.246	13.797	Nov 2021	4.826	Nov 2022	5.053	Nov 2023	-		5.053	0.000	56.922	-
Primary Software Development	MIPR	Classified Contracts : Classified Contracts	0.000	0.000		3.396	Dec 2022	3.555	Dec 2023	-		3.555	0.000	6.951	-
Primary Software Development	C/CPFF	Various : Various	0.000	0.000		2.923	Dec 2022	3.060	Dec 2023	-		3.060	0.000	5.983	-
Primary Software Development	C/CPFF	BAE : Arlington, VA	0.000	0.000		1.317	Dec 2022	1.379	Dec 2023	-		1.379	0.000	2.696	-
Integration Assembly & Test	WR	NIWC PAC : San Diego, CA	12.181	7.857	Oct 2021	3.448	Oct 2022	3.610	Oct 2023	-		3.610	0.000	27.096	-
Integration Assembly & Test	C/CPFF	KAB : San Diego, CA	3.222	1.738	Nov 2021	0.550	Nov 2022	0.576	Nov 2023	-		0.576	0.000	6.086	-
Government Technical Oversight (Dev)	WR	NIWC LANT : Charleston, SC	3.350	1.865	Oct 2021	1.083	Oct 2022	1.738	Oct 2023	-		1.738	0.000	8.036	-
Government Technical Oversight(Dev)	WR	NIWC PAC : San Diego, CA	0.543	0.298	Oct 2021	0.307	Oct 2022	0.321	Oct 2023	-		0.321	0.000	1.469	-
Product Development Prior Years	Various	Various : Various	2.727	0.000		0.000		0.000		-		0.000	0.000	2.727	-
Subtotal			55.269	25.555		23.905		25.632		-		25.632	0.000	130.361	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	SAIC : Columbia, MD	3.010	1.449	Feb 2022	1.438	Dec 2022	1.506	Dec 2023	-		1.506	0.000	7.403	-
Logistics Engineering	Various	Various : Various	1.438	0.815	Oct 2021	0.839	Oct 2022	0.878	Oct 2023	-		0.878	0.000	3.970	-
Subtotal			4.448	2.264		2.277		2.384		-		2.384	0.000	11.373	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NIWC LANT : Charleston, SC	0.937	0.579	Oct 2021	0.696	Dec 2022	0.729	Dec 2023	-		0.729	0.000	2.941	-
Developmental Test & Evaluation (DT&E)	WR	NIWC PAC : San Diego, CA	1.162	0.700	Oct 2021	0.700	Dec 2022	0.733	Dec 2023	-		0.733	0.000	3.295	-
Developmental Test & Evaluation (DT&E)	C/CPFF	Various : Various	0.740	0.500	Dec 2021	0.512	Dec 2022	0.536	Dec 2023	-		0.536	0.000	2.288	-
Subtotal			2.839	1.779		1.908		1.998		-		1.998	0.000	8.524	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Management	C/CPFF	BAH : San Diego, CA	2.109	0.950	Nov 2021	0.979	Feb 2023	1.025	Feb 2024	-		1.025	0.000	5.063	-
Travel	Allot	NAVWAR : San Diego, CA	0.501	0.200	Nov 2021	0.270	Nov 2022	0.283	Nov 2023	-		0.283	0.000	1.254	-
Subtotal			2.610	1.150		1.249		1.308		-		1.308	0.000	6.317	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			65.166	30.748		29.339		31.322		-		31.322	0.000	156.575	N/A
Remarks															



Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS	Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>	<b>Project (Number/Name)</b> 2227 / <i>Distributed Common Ground System (DCGS-N) Inc 2</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2227</b>				
Software Acquisition Pathway (SWAP) Acquisition Decision Memorandum (ADM)	3	2022	3	2022
DCGS-N Inc 2 Requirements Definition Package (RDP)	2	2022	2	2022
DCGS-N Inc 2 Capability Needs Statement (CNS) FY22	2	2022	2	2022
DCGS-N Inc 2 Capability Needs Statement (CNS) FY23	2	2023	2	2023
DCGS-N Inc 2 Capability Needs Statement (CNS) FY24	2	2024	2	2024
DCGS-N Inc 2 Capability Needs Statement (CNS) FY25	2	2025	2	2025
DCGS-N Inc 2 Capability Needs Statement (CNS) FY26	2	2026	2	2026
DCGS-N Inc 2 Capability Needs Statement (CNS) FY27	2	2027	2	2027
DCGS-N Inc 2 Capability Needs Statement (CNS) FY28	2	2028	2	2028
DCGS-N Inc 2 Fleet Capability Release (FCR) Development FY22	1	2022	2	2022
DCGS-N Inc 2 Integration of Emergent Technologies & Iterative Releases	3	2022	4	2028
Iterative Release (IR) FY23Q2	2	2023	2	2023
Iterative Release (IR) FY23Q4	4	2023	4	2023
Iterative Release (IR) FY24Q2	2	2024	2	2024
Iterative Release (IR) FY24Q4	4	2024	4	2024
Iterative Release (IR) FY25Q2	2	2025	2	2025
Iterative Release (IR) FY25Q4	4	2025	4	2025
Iterative Release (IR) FY26Q2	2	2026	2	2026
Iterative Release (IR) FY26Q4	4	2026	4	2026
Iterative Release (IR) FY27Q2	2	2027	2	2027
Iterative Release (IR) FY27Q4	4	2027	4	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Iterative Release (IR) FY28Q2		2	2028	2	2028
Iterative Release (IR) FY28Q4		4	2028	4	2028
Trident Warrior/DCGS Family of Systems (FoS) 2022		2	2022	3	2022
Trident Warrior/DCGS Family of Systems (FoS) 2023		2	2023	3	2023
Trident Warrior/DCGS Family of Systems (FoS) 2024		2	2024	3	2024
Trident Warrior/DCGS Family of Systems (FoS) 2025		2	2025	3	2025
Trident Warrior/DCGS Family of Systems (FoS) 2026		2	2026	3	2026
Trident Warrior/DCGS Family of Systems (FoS) 2027		2	2027	3	2027
Trident Warrior/DCGS Family of Systems (FoS) 2028		2	2028	3	2028
Cyber Test FY23 Q1		1	2023	1	2023
Cyber Test FY23 Q3		3	2023	3	2023
Cyber Test FY24 Q1		1	2024	1	2024
Cyber Test FY24 Q3		3	2024	3	2024
Cyber Test FY25 Q1		1	2025	1	2025
Cyber TestFY25 Q3		3	2025	3	2025
Cyber Test FY26 Q1		1	2026	1	2026
Cyber TestFY26 Q3		3	2026	3	2026
Cyber Test FY27 Q1		1	2027	1	2027
Cyber Test FY27 Q3		3	2027	3	2027
Cyber Test FY28 Q1		1	2028	1	2028
Cyber Test FY28 Q3		3	2028	3	2028
COTF T&E FY23		2	2023	2	2023
COTF T&E FY24		2	2024	2	2024
COTF T&E FY25		2	2025	2	2025
COTF T&E FY26		2	2026	2	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 2227 / Distributed Common Ground System (DCGS-N) Inc 2	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
COTF T&E FY27		2	2027	2	2027
COTF T&E FY28		2	2028	2	2028
DCGS-N Inc 2 Procurement		1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2351 / MDA			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2351: MDA	4.000	3.846	3.217	3.269	-	3.269	3.105	3.154	3.190	3.255	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Maritime Domain Awareness (MDA) project is a portfolio of partnerships that leverages the investments of other agencies in MDA tools and data, and funds the enhancement of those tools to meet Navy requirements for worldwide over-the-horizon vessel tracking and other MDA data in support of Distributed Common Ground System-Navy (DCGS-N), Automated Identification System (AIS) program of record, MDA analysts at Fleet Maritime Operations Centers, and at the Office of Naval Intelligence. The MDA project manages the partnership with the Department of Transportation to leverage the Maritime Safety and Security Information System (MSSIS) and SeaVision, an unclassified non-Public Key Infrastructure (PKI) information-sharing tool used by United States Indo-Pacific Command (INDOPACOM), European Command (EUCOM), Africa Command (AFRICOM), Southern Command (SOUTHCOM), other USG agencies, and foreign partner nations to increase maritime security by sharing information. SeaVision produces a track picture based data contributed by MSSIS partners such as costal AIS and costal radar and augmented with commercially procured data. SeaVision is a cloud-based system where users can visualize vessel tracks, access vessel information and run a growing set of analytics. SeaVision also has Application Programming Interfaces (APIs) for machine-to-machine data exchange with authorized systems including the Navy's AIS program of record.

The MDA project manages the partnership with the National Reconnaissance Office (NRO) to leverage the THRESHER system. THRESHER is a cloud-based system that provides over-the-horizon vessel tracking and analysis tools enhanced by Artificial Intelligence/Machine Learning (AI/ML). The MDA project is working with NRO to enhance THRESHER capabilities to improve the correlated and fused track feed provided over the Integrated Broadcast Service and improve THRESHER analytics on both JWICS and SIPR net.

FY 2024 efforts for MDA SeaVision include user driven and prioritized feature enhancements documented in the System Requirements Specification 8.0, which was developed with the stakeholder community in 2023. Major capabilities include the integration with AI/ML platforms to improve analysis, and enhanced interoperability with Office of Naval Intelligence Authoritative Maritime Services. These efforts also include back-end enhancements to the MSSIS to facilitate better data throughput and conditioning. Efforts for THRESHER include user driven feature enhancements to analytics and improved correlation and fusion algorithms.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Maritime Domain Awareness (MDA)	3.846	3.217	3.269	0.000	3.269
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b>					
- Continue improvement of SeaVision analytics through enhancements that were documented in the System Requirements Specification 7.0					
- Continue integration of additional data sources into SeaVision					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>		<b>Project (Number/Name)</b> 2351 / MDA		
<b><u>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</u></b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<ul style="list-style-type: none"> <li>- Continue improvements to Maritime Safety Security Information System (MSSIS) to increase data throughput capacity and conditioning</li> <li>- Continue improvements to THRESHER analytics based on direct Fleet input</li> <li>- Continue enhancement of THRESHER algorithms to improve correlation and fusion of tracks</li> </ul> <p><b><i>FY 2024 Base Plans:</i></b></p> <ul style="list-style-type: none"> <li>- Continue improvement of SeaVision analytics through enhancements that were documented in the System Requirements Specification 8.0</li> <li>- Continue integration of additional data sources into SeaVision</li> <li>- Continue improvements to Maritime Safety Security Information System (MSSIS) to increase data throughput capacity and conditioning</li> <li>- Continue improvements to THRESHER analytics based on direct Fleet input</li> <li>- Continue enhancement of THRESHER algorithms to improve correlation and fusion of tracks</li> </ul> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> No significant changes from FY 2023 to FY 2024.</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		3.846	3.217	3.269	0.000	3.269
<b><u>C. Other Program Funding Summary (\$ in Millions)</u></b> N/A						
<b><u>Remarks</u></b>						
<b><u>D. Acquisition Strategy</u></b> MDA is governed under the Program Executive Office for Command, Control, Communications, Computers, Intelligence, and Space (PEO C4I and Space) instruction for non-ACAT projects. MDA will fund partner agencies for the enhancement of existing tools to satisfy Navy requirements.						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2351 / MDA					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NIWC PAC : San Diego, CA	1.316	1.326	Oct 2021	1.333	Oct 2022	1.397	Oct 2023	-		1.397	Continuing	Continuing	Continuing
Software Development	MIPR	DOT Volpe Center : Cambridge, MA	0.769	0.874	Oct 2021	0.706	Oct 2022	0.702	Oct 2023	-		0.702	Continuing	Continuing	Continuing
Software Development	MIPR	Classified Contracts : Classified Contracts	1.915	1.646	Oct 2021	1.178	Oct 2022	1.170	Oct 2023	-		1.170	Continuing	Continuing	Continuing
Subtotal			4.000	3.846		3.217		3.269		-		3.269	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4.000	3.846		3.217		3.269		-		3.269	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																		Date: March 2023										
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS								Project (Number/Name) 2351 / MDA								
Proj 2351	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	MDA Engineering and Development																											



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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS	Project (Number/Name) 2351 / MDA

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 2351</i>				
MDA Engineering and Development	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2363 / Remote Sensing Capability Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2363: Remote Sensing Capability Development	0.000	0.000	0.000	4.801	-	4.801	4.696	4.772	4.856	4.953	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

Remote Sensing Capability Development (RSCD) Program (Project 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24; RSCD is a Military Intelligence Program (MIP), which aligns to PE 0304785N.

**A. Mission Description and Budget Item Justification**

The RSCD project integrates and fields capabilities to enhance maritime domain awareness using non-organic sensors under the Top Secret / Sensitive Compartmented Information (TS/SCI) SEAHORSE process. The system addresses Fleet Integrated Prioritized Capability List (IPCL) and capabilities gaps for increasing Battlespace Awareness and Intelligence Surveillance and Reconnaissance (ISR) capabilities to support Fleet Tasking, Collections, Processing, Exploitation, and Dissemination (TCPED) processes. RSCD employs automation concepts to produce intelligence with significantly less Fleet manpower than traditional processes. The project is also working to shorten and streamline the SEAHORSE TCPED cycle to meet speed of service and accuracy requirements. RSCD incorporates state of the art software in the form of machine/continuous learning technologies to achieve a significant reduction of false alarm rates. SEAHORSE is relied upon by INDOPACOM, CENTCOM, and EUCOM to provide intelligence solutions (detail held at a higher classification). RSCD supporting the transition of SEAHORSE to a fully integrated, cloud-based, operational system.

FY 2024 funding will continue the planned data collection, algorithm enhancement, algorithm performance assessment, and system integration activities

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Remote Sensing Capability Development (RSCD)	0.000	0.000	4.801	0.000	4.801
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> FY23 Plans captured under PE 0604231N in FY23. The Remote Sensing Capability Development (RSCD) program has been realigned from PE 0604231N to PE 0304785N starting in FY24.					
<b>FY 2024 Base Plans:</b> - Continue to collect data in various weather and sea states to broaden the range of environmental conditions, reduce uncertainty in environmental prediction, and generate training data sets for Machine Learning.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023	
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>		<b>Project (Number/Name)</b> 2363 / <i>Remote Sensing Capability Development</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>					
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<ul style="list-style-type: none"> <li>- Continue to conduct software algorithm performance analysis and enhancements to automatically detect oceanographic phenomena and data repository to test and evaluate, create performance metrics, and understand computational performance of algorithms and technologies that enhance the fleet's battle space awareness.</li> <li>- Continue to conduct software algorithm enhancements to address improvements identified through performance analysis.</li> <li>- Continue to integrate software algorithm enhancements.</li> <li>- Continue to coordinate Tasking, Collections, Processing, Exploitation, and Dissemination (TCPED) process amongst inter-agencies to support Navy Missions.</li> </ul> <p><b><i>FY 2024 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase of \$4.801M from FY 2023 to FY 2024 is attributed to realignment of Proj 2363 from PE 0604231N to PE 0304785N starting in FY24.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	4.801	0.000	4.801
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b> The Remote Sensing Capabilities Development (RSCD) acquisition strategy is being managed by the Program Executive Office Command, Control, Communications, Computers and Intelligence (PEO C4I) and Space, via a Project Definition Document (PDD) construct for acquisition rigor and oversight.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 2363 / Remote Sensing Capability Development					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RSCD Software Development	C/FFP	SAIC : Reston, VA	0.000	0.000		0.000		0.518	Feb 2024	-		0.518	Continuing	Continuing	Continuing
RSCD Software Development	WR	NRL : Various	0.000	0.000		0.000		0.614	Nov 2023	-		0.614	Continuing	Continuing	Continuing
RSCD Software Development	C/FFP	Cubic/Valiant : San Diego, CA	0.000	0.000		0.000		1.089	Apr 2024	-		1.089	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		2.221		-		2.221	Continuing	Continuing	N/A
Remarks FY22/FY23 cost captured under PE 0604231N. The Remote Sensing Capability Development (RSCD) program has been realigned from PE 0604231N to PE 0304785N starting in FY24.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RSCD Architecture	WR	NIWC PAC : San Diego, CA	0.000	0.000		0.000		0.774	Nov 2023	-		0.774	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.774		-		0.774	Continuing	Continuing	N/A
Remarks FY22/FY23 cost captured under PE 0604231N. The Remote Sensing Capability Development (RSCD) program has been realigned from PE 0604231N to PE 0304785N starting in FY24.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	SNL (DOE) : Albuquerque, NM	0.000	0.000		0.000		0.774	Nov 2023	-		0.774	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/FFP	Cubic/Valiant : San Diego, CA	0.000	0.000		0.000		1.032	Apr 2024	-		1.032	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS						Project (Number/Name) 2363 / Remote Sensing Capability Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Subtotal			0.000	0.000		0.000		1.806		-		1.806	Continuing	Continuing	N/A		
Remarks																	
FY22/FY23 cost captured under PE 0604231N. The Remote Sensing Capability Development (RSCD) program has been realigned from PE 0604231N to PE 0304785N starting in FY24.																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.000	0.000		0.000		4.801		-		4.801	Continuing	Continuing	N/A		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy										Date: March 2023																			
Appropriation/Budget Activity 1319 / 5										R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS										Project (Number/Name) 2363 / Remote Sensing Capability Development									
Fiscal Year	2022				2023				2024				2025				2026				2027				2028				
Remote Sensing Capability Development (RSCD)	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Data Collection																													
Algorithm Enhancements																													
Algorithm Decision (AD)																													
System Integration Decision (ID)																													
System Integration																													
Testing																													
Systems Engineering																													
System Fielding Decision (FD)																													
Algorithm Performance Analysis																													
Notes: RSCD Program (Project 2363) has been realigned from PE 0604231N to PE 0304785N starting in FY24; RSCD is a Military Intelligence Program (MIP), which aligns to PE 0304785N.																													

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>	<b>Project (Number/Name)</b> 2363 / <i>Remote Sensing Capability Development</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2363</b>				
Data Collection	1	2024	4	2028
Algorithm Enhancements	1	2024	4	2028
Algorithm Decision (AD) 2.5.1	3	2024	3	2024
Algorithm Decision (AD) 2.6.1	3	2025	3	2025
Algorithm Decision (AD) 2.7.1	3	2026	3	2026
Algorithm Decision (AD) 2.8	3	2027	3	2027
Algorithm Decision (AD) 2.9	3	2028	3	2028
System Integration Decision (ID) 2.4	2	2024	2	2024
System Integration Decision (ID) 2.5	2	2025	2	2025
System Integration Decision (ID) 2.6	2	2026	2	2026
System Integration Decision (ID) 2.7	2	2027	2	2027
System Integration Decision (ID) 2.8	2	2028	2	2028
System Integration	1	2024	4	2028
Testing	1	2024	4	2028
System Engineering	1	2024	4	2028
System Fielding Decision (FD) 2.3	2	2024	2	2024
System Fielding Decision (FD) 2.4	2	2025	2	2025
System Fielding Decision (FD) 2.5	2	2026	2	2026
System Fielding Decision (FD) 2.6	2	2027	2	2027
System Fielding Decision (FD) 2.7	2	2028	2	2028
Algorithm Performance Analysis	1	2024	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 3091 / Advanced Cryptological Sys Eng (CCOP)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3091: Advanced Cryptological Sys Eng (CCOP)	9.125	4.386	4.853	8.109	-	8.109	8.221	8.518	8.913	9.117	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program (CCOP) rapidly develops and fields state-of-the-art signal acquisition capabilities in response to Combatant Command requirements to provide augmentable, quick-reaction surface, subsurface and airborne cryptologic carry-on capabilities. There are approximately 124 cryptologic capable surface ships and shore sites in the current Naval inventory; a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, there are other numerous Naval platforms (including U.S. Coast Guard, Patrol Craft and USNS) that could serve as potential users. This funding line provides resources to enable rapid transition of available Commercial Off-The-Shelf (COTS) and Government Off - The-Shelf (GOTS) technologies that apply to Fleet requirements for carry-on system functionalities. These technologies typically require various levels of integration to leverage on-board systems providing system and mission management, product reporting, and data analysis. COTS / GOTS system documentation and training materials require adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Prior to operational deployment, systems must be systematically tested to ensure suitable and reliable operation, tested for network vulnerabilities if connected to shipboard Local Area Networks, and tested relative to interoperability requirements. Certification testing is conducted to meet Office of Naval Intelligence security requirements, and network testing is conducted in accordance with Information Technology (IT) requirements to allow connection to Navy networks. Funding will also provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of all other carry-on subsystems to meet emergent requirements. Funding will support development and integration efforts to fuse data produced and distributed by Shipboard Information Warfare (IW) / Information Operations (IO) systems with other intelligence data at multiple classification levels which is then provided to shipboard combat systems to support kinetic (bombs, mortars, missiles, bullets, etc.) and non-kinetic fires (electronic attack, lasers, cyber) in order to enable a more agile, effective and complete exploitation of the electromagnetic spectrum.

In FY 2024, the Advanced Cryptologic Systems Engineering - CCOP program will integrate, test, and document identified COTS and GOTS augmentable technologies and subsystems to meet emergent Fleet requirements as specified in the Signal of Interest (SOI) and target threat lists. CCOP will develop upgrades to existing systems and subsystems according to Fleet requirements and Integrated Fleet Priority lists. CCOP will develop new signal processing algorithms and software based solutions to continue enabling rapid transition of capability to permanently installed Ship's Signal Exploitation Space (SSES) systems, including SSEE Family of Systems (FoS) and its variants. CCOP will conduct research and development of Adaptive Mission Modules for rapid insertion to counter specific threats or provide intelligence in specific areas of operation. More details are available at higher classification. CCOP will conduct a Limited Objective Experiments (LOEs) for SWAMPDONKEY which will provide shipboard operators to conduct electronic countermeasures against a specific class of signals and for VIKING VESPER which will provide SSES operators with capability to provide collection and recording on high data rate signals.



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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 3091 / Advanced Cryptological Sys Eng (CCOP)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Advanced Cryptological Sys Eng - Cryptologic Carry On Program (CCOP)		4.386	4.853	8.109	0.000	8.109
Articles:		-	-	-	-	-
FY 2023 Plans:						
<div>- Continue to integrate, test, and document identified Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) augmentable technologies and subsystems to meet emergent Fleet requirements as specified in the Signal of Interest (SOI) and target threat lists.</div> <div>- Continue to develop upgrades to existing systems and subsystems according to Fleet requirements and Integrated Fleet Priority lists.</div> <div>- Continue to develop new signal processing algorithms and software based solutions to continue enabling rapid transition of capability to permanently installed Ship's Signal Exploitation Space (SSES) systems, including SSEE Family of Systems (FoS)and its variants.</div> <div>- Continue to conduct research and development of Adaptive Mission Modules for rapid insertion to counter specific threats or provide intelligence in specific areas of operation. More details are available at higher classification.</div> <div>- Completed Limited Objective Experiment (LOE) for the BLUEKRYPTONITE tool suite which provides the ability to track, collect, and exploit a critical SOI.</div>						
FY 2024 Base Plans:						
<div>- Begin LOE for SWAMPDONKEY which will allow shipboard operators to conduct electronic countermeasures against a specific class of signals (details held at higher classification).</div> <div>- Begin LOE for VIKING VESPER which will provide SSES operators with capability to provide collection and recording on high data rate signals (details held at higher classification).</div> <div>- Continue to integrate, test, and document identified COTS and GOTS augmentable technologies and subsystems to meet emergent Fleet requirements as specified in the SOI and target threat lists.</div> <div>- Continue to develop upgrades to existing systems and subsystems according to Fleet requirements and Integrated Fleet Priority lists.</div> <div>- Continue to develop new signal processing algorithms and software based solutions to continue enabling rapid transition of capability to permanently installed SSES systems, including SSEE FoS and its variants.</div> <div>- Continue to conduct research and development of Adaptive Mission Modules for rapid insertion to counter specific threats or provide intelligence in specific areas of operation. More details are available at higher classification.</div>						
FY 2024 OCO Plans:						

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023							
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>		<b>Project (Number/Name)</b> 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>							
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>						
N/A											
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Advanced Cryptological Sys Eng - Cryptologic Carry On Program (CCOP) FY 2023 to FY 2024 increase (+ \$3.256M) is attributed to beginning new Limited Objective Experiments (LOEs) for SWAMPDONKEY and VIKING VESPER (details held at higher classification).											
<b>Accomplishments/Planned Programs Subtotals</b>	4.386	4.853	8.109	0.000	8.109						
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/3501: <i>Cryptologic Communications Equip</i>	17.809	28.832	17.483	-	17.483	15.642	15.844	15.875	16.226	Continuing	Continuing
<b>Remarks</b> OPN BLI 3501 includes multiple programs; CCOP is only a portion of that budget											
<b>D. Acquisition Strategy</b> The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program (CCOP) program delivers state-of-the-art signal acquisition software for CCOP systems in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 3091 / Advanced Cryptological Sys Eng (CCOP)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	Classified Contract : Classified Contract	5.727	2.649	Jan 2022	2.713	Jan 2023	4.487	Jan 2024	-		4.487	Continuing	Continuing	Continuing
Software Development	WR	NIWC PAC : San Diego, CA	1.128	0.577	Nov 2021	0.573	Nov 2022	0.980	Nov 2023	-		0.980	Continuing	Continuing	Continuing
Software Development	WR	NIWC LANT : Charleston, SC	0.582	0.298	Nov 2021	0.322	Nov 2022	0.550	Nov 2023	-		0.550	Continuing	Continuing	Continuing
Subtotal			7.437	3.524		3.608		6.017		-		6.017	Continuing	Continuing	N/A
Remarks FY2024 funding increase reflects the start of new Limited Objective Experiments SWAMPDONKEY and VIKING VESPER.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	Classified Contract : Classified Contract	0.891	0.454	Jan 2022	0.491	Jan 2023	0.803	Jan 2024	-		0.803	Continuing	Continuing	Continuing
Govt Tech Oversight	WR	NIWC PAC : San Diego	0.428	0.219	Nov 2021	0.237	Nov 2022	0.405	Nov 2023	-		0.405	Continuing	Continuing	Continuing
Subtotal			1.319	0.673		0.728		1.208		-		1.208	Continuing	Continuing	N/A
Remarks FY2024 funding increase reflects the start of new Limited Objective Experiments SWAMPDONKEY and VIKING VESPER.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NIWC LANT : Charleston, SC	0.369	0.189	Nov 2021	0.517	Nov 2022	0.884	Nov 2023	-		0.884	Continuing	Continuing	Continuing
Subtotal			0.369	0.189		0.517		0.884		-		0.884	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023					
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS						Project (Number/Name) 3091 / Advanced Cryptological Sys Eng (CCOP)					
Test and Evaluation (\$ in Millions)						FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks																	
FY2024 funding increase reflects the start of new Limited Objective Experiments SWAMPDONKEY and VIKING VESPER. Each Line Represents (by sort order): 5) Developmental Test & Evaluation CCOP.																	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			9.125	4.386		4.853		8.109		-		8.109	Continuing	Continuing	N/A		
Remarks																	
FY2024 funding increase to Product Development, Support, Test and Evaluation and Management Services reflects the start of new Limited Objective Experiments for SWAMPDONKEY and VIKING VESPER.																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy																Date: March 2023												
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 3091 / Advanced Cryptological Sys Eng (CCOP)												
Fiscal Year	2022				2023				2024				2025				2026				2027				2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prototype Phase	<div></div>				<div></div>				<div></div>				<div></div>				<div></div>				<div></div>				<div></div>			
System Development	<div>▲ SDR</div>				<div>▲ SDR</div>				<div>▲ SDR</div>				<div>▲ SDR</div>				<div>▲ SDR</div>				<div>▲ SDR</div>				<div>▲ SDR</div>			
Software Delivery			<div>▲</div>			<div>▲</div>				<div>▲</div>			<div>▲</div>			<div>▲</div>				<div>▲</div>			<div>▲</div>				<div>▲</div>	
T&E Milestones			<div>OA ▲</div>			<div>OA ▲</div>				<div>OA ▲</div>			<div>OA ▲</div>			<div>OA ▲</div>				<div>OA ▲</div>			<div>OA ▲</div>				<div>OA ▲</div>	
Operational Assessment																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Navy			<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0304785N / <i>ISR &amp; INFO OPERATIONS</i>	<b>Project (Number/Name)</b> 3091 / <i>Advanced Cryptological Sys Eng (CCOP)</i>	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 3091</i></b>				
Prototype Phase - 2022	1	2022	4	2022
Prototype Phase - 2023	1	2023	4	2023
Prototype Phase -2024	1	2024	4	2024
Prototype Phase -2025	1	2025	4	2025
Prototype Phase -2026	1	2026	4	2026
Prototype Phase -2027	1	2027	4	2027
Prototype Phase - 2028	1	2028	4	2028
System Design Review (SDR) - 2022	2	2022	2	2022
System Design Review (SDR) - 2023	2	2023	2	2023
System Design Review (SDR) - 2024	2	2024	2	2024
System Design Review (SDR) - 2025	2	2025	2	2025
System Design Review (SDR) - 2026	2	2026	2	2026
System Design Review (SDR) - 2027	2	2027	2	2027
System Design Review (SDR) - 2028	2	2028	2	2028
Software Delivery - 2022	3	2022	4	2022
Software Delivery - 2023	3	2023	4	2023
Software Delivery - 2024	3	2024	4	2024
Software Delivery - 2025	3	2025	4	2025
Software Delivery - 2026	3	2026	4	2026
Software Delivery - 2027	3	2027	4	2027
Software Delivery - 2028	3	2028	4	2028

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy			Date: March 2023	
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS		Project (Number/Name) 3091 / Advanced Cryptological Sys Eng (CCOP)
		Start		End
Events by Sub Project		Quarter	Year	Quarter Year
Operational Assessment (OA) - 2022		4	2022	4 2022
Operational Assessment (OA) - 2023		4	2023	4 2023
Operational Assessment (OA) - 2024		4	2024	4 2024
Operational Assessment (OA) - 2025		4	2025	4 2025
Operational Assessment (OA) - 2026		4	2026	4 2026
Operational Assessment (OA) - 2027		4	2027	4 2027
Operational Assessment (OA) - 2028		4	2028	4 2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 3786 / Tactical Edge Targeting			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3786: Tactical Edge Targeting	22.162	22.966	18.887	22.260	-	22.260	22.887	21.427	21.037	21.461	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Tactical Edge Targeting (TET)	22.966	18.887	22.260	0.000	22.260
<b>Articles:</b>	-	-	-	-	-
<b>FY 2023 Plans:</b> The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.					
<b>FY 2024 Base Plans:</b> The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.					
<b>FY 2024 OCO Plans:</b> N/A					
<b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.					
<b>Accomplishments/Planned Programs Subtotals</b>	22.966	18.887	22.260	0.000	22.260

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks****D. Acquisition Strategy**

The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS				Project (Number/Name) 3786 / Tactical Edge Targeting					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Classified	Various	Classified : Classified	22.162	22.966	Jan 2022	18.887	Jan 2023	22.260	Jan 2024	-		22.260	Continuing	Continuing	Continuing
Subtotal			22.162	22.966		18.887		22.260		-		22.260	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			22.162	22.966		18.887		22.260		-		22.260	Continuing	Continuing	N/A
Remarks															
The details of the TET project are classified SECRET and are submitted annually to Congress in the classified budget justification books.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity			R-1 Program Element (Number/Name)		
1319 / 5			PE 0304785N / ISR & INFO OPERATIONS		
			Project (Number/Name)		
			3786 / Tactical Edge Targeting		

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3786																												
Classified																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0304785N / ISR & INFO OPERATIONS	Project (Number/Name) 3786 / Tactical Edge Targeting

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3786				
Classified	1	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	53.154	23.299	37.038	2.068	-	2.068	13.447	11.589	8.423	8.591	Continuing	Continuing
2952: Cyber Mission Force	0.000	0.000	22.037	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	22.037
2958: Cyberspace Activities	53.154	23.299	15.001	2.068	-	2.068	13.447	11.589	8.423	8.591	Continuing	Continuing

## A. Mission Description and Budget Item Justification

MARFORCYBER provides advanced cyber warfare capabilities in direct support of US Cyber Command (USCYBERCOM), Marine Corps Commanders, and national agencies to enable and accomplish global operations. Activities within the project deliver cyberspace superiority capabilities through the research, development, testing, evaluation, and integration of cyber technologies. The project enables Commanders to disrupt, deny, degrade, or destroy targets. Research and develop software constructed cyber weapons disrupt rising advanced peer and near-peer threats, as well as violent extremist organizations seeking to do harm to the United States. The software constructed cyber weapons are target specific and require high quality, rapid adjustments to achieve desired effects at acceptable levels of risk. The specific details and aspects of these cyber activities are held at a higher classification level.

Adversarial Cyber Developmental Test and Evaluation: Provides adversarial penetration testing services to Marine Corps Systems Command (MCSC) programs of record (PoRs) via Marine Corps Tactical Systems Support Activity (MCTSSA). MCTSSA serves as the Marine Corps Enterprise Network (MCEN) Cyber Developmental Test and Evaluation (DT&E) agent in accordance with NDAA 1640, PL-113 -283, DODI 8510. 01, DODI 5000.2, CNSS-1253, NIST-SP-800-53, and the DoD Cyber Security Test and Evaluation Guidebook. MCTSSA also serves as the USMC Cyber Developmental Test (DT) Center of Excellence, conducting mission-based cyber vulnerability assessments in accordance with policy-directed taskings. Assessments include, but are not limited to, (1) zero-day discoveries, (2) target maintenance resources to prove vulnerabilities vs. false positives, (3) informing Operational Commanders and Enterprise Leadership of mission critical Cyber security issues, (3) informing prioritization of cyber security threat investment decisions, (4) informing USMC DCO staff on advanced cyber threats to increase their skill set in detecting advanced cyber attacks and threats, and (5) ensuring Command & Control (C2) enhances the resiliency of the Marine Air-Ground Task Force (MAGTF) in a cyber-denied environment.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0306250M / Cyber Operations Technology Development			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	23.768	37.038	10.397	-	10.397
Current President's Budget	23.299	37.038	2.068	-	2.068
Total Adjustments	-0.469	0.000	-8.329	-	-8.329
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.469	0.000			
• Program Adjustments	0.000	0.000	-6.858	-	-6.858
• Rate/Misc Adjustments	0.000	0.000	-1.471	-	-1.471
<b>Change Summary Explanation</b>					
The majority of the decrease of \$34.970M from FY 2023 to FY 2024 is reflective of the realignment of all funding supporting Cyber Operations support and the transfer of Cyber development to USCYBERCOM.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development				Project (Number/Name) 2952 / Cyber Mission Force			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2952: Cyber Mission Force	0.000	0.000	22.037	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	22.037
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Note Beginning in FY 2023, project 2952, Cyber Mission Force, was created in order to provide transparency for funding that transferred to U.S. Cyber Command in FY 2024. Specifically, in FY 2023 \$22.037M was transferred from project 2958 Joint Cyber Weapons into project 2952 Cyber Mission Forces to support a functional transfer to U.S. Cyber Command in support of Enhanced Budget Controls in FY 2024.												
A. Mission Description and Budget Item Justification MARFORCYBER: Funding enables highly skilled software engineers, exploit developers, integrators, testers, evaluators, and systems to develop joint cyberspace tools. The software engineers are highly skilled contractors who are software developers with a 12-month period of performance, associated to a standard twenty-six (26) pay period burn rate for services rendered. The tools will deter rising and near-peer threats, as well as violent extremist organizations who are actively seeking to harm the United States by attacking logistics and distribution systems, disrupting critical infrastructure, and purloining advanced U.S. technology. The specific details and aspects of these cyberspace activities are available at a higher classification level.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Joint Cyberspace Weapons  Articles:  FY 2023 Plans: Funding enables highly skilled software engineers, exploit developers, integrators, testers, evaluators, and systems to develop joint cyberspace tools. The software engineers are highly skilled contractors who are software developers with a 12-month period of performance, associated to a standard twenty-six (26) pay period burn rate for services rendered. The tools will deter rising and near-peer threats, as well as violent extremist organizations who are actively seeking to harm the United States by attacking logistics and distribution systems, disrupting critical infrastructure, and purloining advanced U.S. technology. The specific details and aspects of these cyberspace activities are available at a higher classification level.  FY 2024 Base Plans: Beginning in FY 2024 funding was transferred to USCYBERCOM.  FY 2024 OCO Plans:								0.000	22.037	0.000	0.000	0.000
								-	-	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy				<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0306250M / <i>Cyber Operations Technology Development</i>		<b>Project (Number/Name)</b> 2952 / <i>Cyber Mission Force</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>						
		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A						
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Decrease of \$22.037M in FY 2024 is due to the transfer to USCYBERCOM.						
<b>Accomplishments/Planned Programs Subtotals</b>		0.000	22.037	0.000	0.000	0.000
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A						
<b>Remarks</b>						
<b>D. Acquisition Strategy</b> MARFORCYBER: The contract period of performance is 12 months, associated to a standard twenty-six (26) pay period burn rate for services rendered with options into future fiscal years. The contract place of performance will be located at Fort Meade, Maryland. The contracting authority will be Naval Information Warfare Center (NIWC) Pacific and Air Force Research Laboratory (AFRL).						



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development						Project (Number/Name) 2952 / Cyber Mission Force			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	0.000	0.000		22.037	Jan 2023	0.000		-		0.000	0.000	22.037	-
Subtotal			0.000	0.000		22.037		0.000		-		0.000	0.000	22.037	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		22.037		0.000		-		0.000	0.000	22.037	N/A
Remarks															

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**Appropriation/Budget Activity**  
1319 / 5

**R-1 Program Element (Number/Name)**  
PE 0306250M / *Cyber Operations Technol  
ogy Development*

**Project (Number/Name)**  
2952 / Cyber Mission Force

Proj 2952	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
						Joint Cyberspace Weapons Enhancements																								

2024DON - 0306250M - 2952

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development	Project (Number/Name) 2952 / Cyber Mission Force

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2952				
Joint Cyberspace Weapons Enhancements	2	2023	2	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0306250M / <i>Cyber Operations Technology Development</i>				Project (Number/Name) 2958 / <i>Cyberspace Activities</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2958: <i>Cyberspace Activities</i>	53.154	23.299	15.001	2.068	-	2.068	13.447	11.589	8.423	8.591	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Commander, Marine Forces Cyber Command (COMMARFORCYBERCOM), as the Marine Corps service component commander for the Commander, U.S. Cyber Command (CDRUSCYBERCOM), represents Marine Corps capabilities and interests; advises CDRUSCYBERCOM on the proper employment and support of Marine Corps forces; and coordinates deployment, employment, and redeployment planning and execution of attached forces. MARFORCYBER provides highly skilled software engineers with critical certification that support the implementation and creation of capabilities that enable automation of key system attributes and components. In addition, these personnel provide support to Department of Defense Information Network systems, Defensive Cyberspace Operations systems, and global operations in support of US Cyber Command. These software engineers are developing automation capabilities to identify and mitigate common vulnerabilities and exposures (CVEs) to ensure security of our network, to include our cloud migration, enable our cyber mission force operators to increase lethality against current operational threats, and provide for increased response times to adversary threats to our friendly networks.

Adversarial Cyber Developmental Test and Evaluation: Provides adversarial penetration testing services to Marine Corps Systems Command (MCSC) programs of record (PoRs) via Marine Corps Tactical Systems Support Activity (MCTSSA). MCTSSA serves as the Marine Corps Enterprise Network (MCEN) Cyber Developmental Test and Evaluation (DT&E) agent in accordance with NDAA 1640, PL-113 -283, DODI 8510. 01, DODI 5000.2, CNSS-1253, NIST-SP-800-53, and the DoD Cyber Security Test and Evaluation Guidebook. MCTSSA also serves as the USMC Cyber Developmental Test (DT) Center of Excellence, conducting mission-based cyber vulnerability assessments in accordance with policy-directed taskings. Assessments include, but are not limited to, (1) zero-day discoveries, (2) target maintenance resources to prove vulnerabilities vs. false positives, (3) informing Operational Commanders and Enterprise Leadership of mission critical Cyber security issues, (3) informing prioritization of cyber security threat investment decisions, (4) informing USMC DCO staff on advanced cyber threats to increase their skill set in detecting advanced cyber attacks and threats, and (5) ensuring Command & Control (C2) enhances the resiliency of the Marine Air-Ground Task Force (MAGTF) in a cyber-denied environment.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
<b>Title:</b> Combat Support Team	5.277	9.916	0.319	0.000	0.319
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Combat Support Team supports existing cyber mission teams with cyber weapons developers.					
<b>FY 2023 Plans:</b> During FY 2023 MARFORCYBER's mission will grow by increasing operations focused on Great Power Competition and Integrated Deterrence. Funding will continue to enable cyber support teams (CST), which					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023			
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development		Project (Number/Name) 2958 / Cyberspace Activities		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
are manned with highly skilled software engineers, exploit developers, integrators, testers, evaluators and systems that support weapon creation. The software engineers are highly skilled contractors who are software developers with a 12-month period of performance, associated to a standard twenty-six (26) pay period burn rate for services rendered. The CSTs will continue to develop prototypes for testing new cyber tools to outpace modernized defenses used by peer adversaries and enhance the lethality and relevance of software constructed cyber tools that disrupt near peer, violent extremist organizations, and adversaries to the United States. MARFORCYBER provides these tools to the Joint Force to target specific threats that require high quality, rapid adjustments to achieve desired effects at acceptable levels of risk. The specific details and aspects of these cyberspace activities are held at a higher classification level.						
FY 2024 Base Plans: FY 2024 funding will continue to enable cyber support teams (CST), which are manned with highly skilled software engineers, exploit developers, integrators, testers, evaluators and systems that support weapon creation. The software engineers are highly skilled contractors who are software developers with a 12-month period of performance, associated to a standard twenty-six (26) pay period burn rate for services rendered. The CSTs will continue to develop prototypes for testing new cyber tools to outpace modernized defenses used by peer adversaries and enhance the lethality and relevance of software constructed cyber tools that disrupt near peer, violent extremist organizations, and adversaries to the United States. MARFORCYBER provides these tools to the Joint Force to target specific threats that require high quality, rapid adjustments to achieve desired effects at acceptable levels of risk. The specific details and aspects of these cyberspace activities are held at a higher classification level.						
FY 2024 OCO Plans: N/A						
FY 2023 to FY 2024 Increase/Decrease Statement: The decrease from FY 2023 to FY 2024 reflects a program adjustment due to the availability of prior year funds.						
Title: Joint Cyberspace Weapons		15.632	0.000	0.000	0.000	0.000
Articles:		-	-	-	-	-
Description: Develop new and specialized cyber weapons targeted at advanced threats in cyberspace.						
FY 2023 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy				Date: March 2023		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development		Project (Number/Name) 2958 / Cyberspace Activities		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A						
FY 2024 Base Plans:						
N/A						
FY 2024 OCO Plans:						
N/A						
Title: Cybersecurity Engineering Analysis		2.390	0.000	0.000	0.000	0.000
Articles:		-	-	-	-	-
FY 2023 Plans:						
N/A						
FY 2024 Base Plans:						
N/A						
FY 2024 OCO Plans:						
N/A						
Title: Enterprise IT Security & Compliance		0.000	5.085	1.749	0.000	1.749
Articles:		-	-	-	-	-
FY 2023 Plans:						
Cyber Developmental Test (DT) was established at Marine Corps Tactical System Support Agency (MCTSSA) in response to the NDAA 1647 and 1637 directives. In addition to the NDAA directives, Cyber DT is required by public law 113-283, DODI 8510.01m, DODI 5000.02, DoD Cybersecurity Test and Evaluation Guidebook, Cyber Survivability Endorsement Implementation Guide. Funding will be used to execute adversarial cyber developmental test services in support of programs of record.						
FY 2024 Base Plans:						
Funding will continue to be used to execute adversarial cyber developmental test services in support of programs of record.						
FY 2024 OCO Plans:						
N/A						
FY 2023 to FY 2024 Increase/Decrease Statement:						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development			Project (Number/Name) 2958 / Cyberspace Activities			
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>											
					FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total		
The decrease in funding from FY23 to FY24 is due to the need to realign resources to other high priority efforts.											
Accomplishments/Planned Programs Subtotals					23.299	15.001	2.068	0.000	2.068		
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• PMC/4645: MARFORCYBER	28.086	17.759	27.583	-	27.583	19.840	20.195	20.573	24.248	0.000	229.901
Remarks											
<b>D. Acquisition Strategy</b>											
The contract period of performance will be 12 months, associated to a standard twenty-six (26) pay period burn rate for services rendered with options into future fiscal years. The contract place of performance will be located at Fort Meade, Maryland. The contracting authority will be Naval Information Warfare Center (NIWC) Pacific and Air Force Research Laboratory (AFRL).											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0306250M / Cyber Operations Technology Development						Project (Number/Name) 2958 / Cyberspace Activities			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Combat Support Team	Various	NIWC PACIFIC : Fort Meade, MD	20.658	5.277	Jan 2022	9.916	Jan 2023	0.319	Jan 2024	-		0.319	Continuing	Continuing	Continuing
Subtotal			20.658	5.277		9.916		0.319		-		0.319	Continuing	Continuing	N/A
Remarks The decrease from FY 2023 to FY 2024 reflects program adjustment for under-execution due to the inability to fill staffing positions that require TS/SCI security clearances.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	Various	Various : Various	2.347	2.390	Mar 2022	0.000	Jan 2023	0.000	Jan 2024	-		0.000	0.000	4.737	-
Developmental Test & Evaluation (DT&E)	Various	Various : Various	30.149	15.632	Jan 2022	0.000	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	Various	Various : Various	0.000	0.000		5.085	Jan 2023	1.749	Jan 2024	-		1.749	0.000	6.834	-
Subtotal			32.496	18.022		5.085		1.749		-		1.749	Continuing	Continuing	N/A
Remarks The decrease in funding from FY23 to FY24 is due a Marine Corps decision to realign resources to other high priority effort.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			53.154	23.299		15.001		2.068		-		2.068	Continuing	Continuing	N/A
Remarks															



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PE 0306250M: *Cyber Operations Technology Development*  
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0306250M / <i>Cyber Operations Technology Development</i>	Project (Number/Name) 2958 / <i>Cyberspace Activities</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Cyberspace Activities</b>				
Enterprise IT Security & Compliance: Enterprise IT Security & Compliance: Enterprise IT Security & Compliance	2	2023	4	2026
Combat Support Team: Combat Support Team: Combat Support Team	2	2023	4	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605030N / Joint Tactical Network Center (JTNC)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	0.000	-	0.000	5.112	5.221	5.317	5.423	Continuing	Continuing
3077: Joint Tactical Networking Center (JTNC)	0.000	0.000	0.000	0.000	-	0.000	5.112	5.221	5.317	5.423	Continuing	Continuing

## Note

Joint Tactical Networking Center (JTNC) is funded utilizing a Joint budget strategy. Each Military Department (MILDEP) budgets for approximately one-third of the total program RDT&E requirements for Joint efforts. FY22 through FY24 was zero funding due to the decision to realign funding to Army for execution. FY25 and beyond reflects the Navy one-third share of total program RDT&E funds. Out-year funding is programmed in PE 0605030N by the Navy, PE 0605030A by the Army, and PE 0605030F by the Air Force.

## A. Mission Description and Budget Item Justification

The Joint Tactical Networking Center (JTNC) is chartered to enable the Department of Defense (DoD)'s rapid identification, characterization, procurement, fielding, and sustainment of modular, innovative tactical communications products that ensure secure, interoperable, and resilient Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities. The JTNC provides technical expertise to facilitate tactical communications management, innovation, and standardization. The JTNC: (1) maintains a cyber-hardened DoD Information Repository (IR), (2) provides Technical Analyses/Capability Characterizations on tactical communications products, (3) provides Open Systems Architecture Standards, (4) provides exportability analysis and licensing reviews, and (5) serves as Technical Advisor to the Communications, Command, and Control Leadership Board (C3LB) and Tactical Communications Senior Steering Group (TCSSG).

JTNC mission is executed in coordination with key government stakeholders to include: C3LB, TCSSG, Communications Technologies and Waveforms Working Group (CTWWG), Resiliency Sub-Working Group (RSWG), the Department of Defense (DoD) Chief Information Officer (CIO), Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)), Joint Staff J6 (JS J6), The Under Secretary of Defense for Research and Engineering, abbreviated USD(R&E), and the Services. Particular attention is paid to ensuring that interagency work is collaborative and eliminates duplicative capability. The JTNC enables a common software baseline that is hardware agnostic leading to increased competition for Software Defined Radios (SDR).

Current JTNC directed requirements, outlined by the C3LB, consist of the CTWWG, Joint All-Domain Command and Control (JADC2) support, development/maturation of the DoD IR framework & Cloud migration, and development of the Joint Communications Marketplace (JCM) to meet DoD and Industry requirements in conjunction with DoD Instruction 4630.09. Through collaboration with USD R&E (INSS) and industry partners, JTNC is in the process of capturing information on resilient waveform technologies and portfolio products. The ultimate goal is to expedite market research activities by collecting, analyzing, and making data available in support of emerging Government waveform acquisitions. The JTNC and JITC co-chair the High-Frequency Interoperability and Architecture Sub-Working Group (HF I&A SWG) to resolve HF 3G and 4G interoperability issues, thus facilitating next-generation HF systems. The JTNC HF team is also pathfinding for a new tactical MIL-STD to provide more resilient communications. Additionally, the JTNC is engaged in the analysis of software artifacts involving high assurance devices, such as software defined radios ported with specific waveforms to support National Security Agency (NSA) efforts. The JTNC participates in Standards-related activities such as the Interface Control

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy			Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0605030N / Joint Tactical Network Center (JTNC)			
Working Group (ICWG) and has been collaborating with the Army on the development of C4ISR/Electronic Warfare Modular Open Suite of Standards (CMOSS) specifications. Finally, the JTNC continues evolving its Waveform Assessment and Milestone Review (WASMR) and Capability Characterization processes.					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.000	0.000	4.996	-	4.996
Current President's Budget	0.000	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	-4.996	-	-4.996
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-5.018	-	-5.018
• Rate/Misc Adjustments	0.000	0.000	0.022	-	0.022
Change Summary Explanation					
Zero balance in FY22 through FY24 due to a realignment of Navy (PE 0605030N) and Air Force (PE 0605030F) funds to Army (0605030A) as per the Joint Budget Strategy.					

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605031N / JNT Tactical Network (JTN)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	0.000	-	0.000	2.578	2.628	2.676	2.730	Continuing	Continuing
3397: Joint Tactical Networking (JTN), Joint Enterprise Network Manager (JENM)	0.000	0.000	0.000	0.000	-	0.000	2.578	2.628	2.676	2.730	Continuing	Continuing

**Note**

Responsibility for the development and sustainment of JENM was assigned to the PM Joint Tactical Networks (JTN) by the Joint Tactical Networking Center (JTNC) Acquisition Decision Memorandum (ADM) of 20 Jan 2014. The Army Program Executive Office (PEO) Command Control Communications Tactical (C3T) Memos of 25 Jun 2015 transferred all program, development, and configuration control of JENM by Product Manager (PdM) JENM under PM JTN to PdM Tactical Cyber Network Operations (TCNO) under PM Tactical Network (formally PM WIN-T) when Army became the Lead Service for JENM under the ADM's provisions.

Joint Enterprise Network Manager (JENM) is funded using a Joint budget strategy. Each Military Department (MILDEP) budgets for approximately one-third of the total program RDT&E requirements for joint efforts. Fiscal Year (FY) 2022 to FY 2023 funding reflects post transfers to JENM Army PE from Navy, while FY 2024 and beyond reflects the Navy one-third portion of total program RDT&E funds. Out-year funding is programmed in PE 0605031A by the Army, PE 0605031N by the Navy and PE 0605031F by the Air Force. USMC funding will be provided on an annual basis via Military Interdepartmental Purchase Request (MIPR). Prior to submission of the President's Budget, the funding from Navy PE 0605031N and Air Force PE 0605031F is consolidated with Army PE 0605031A for execution.

JENM, funded in project EF5, is a software only program.

**A. Mission Description and Budget Item Justification**

EF5 project: This funding line is a key enabler of the Army Modernization Priorities in support of the network. This funding line supports the Army Network Modernization strategy (LOE 1), Unified Network and Joint Interoperability/Coalition Accessible (LOE 3). Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve the network modernization strategy.

The Joint Enterprise Network Manager (JENM) software provides a single, converged network management tool allowing the Warfighter to plan, configure, load, and manage the Joint Services' Tactical Radios and their networks in the field - a capability not available in legacy planning systems. JENM funding supports several types of tactical radios, such as the ManPack and Rifleman, enabling them to utilize Mobile Ad Hoc Networking (MANET) and other waveforms to include: Mobile User Objective System (MUOS) waveform, Satellite Communications (SATCOM) Demand Assigned Multiple Access (DAMA), Integrated Waveform (IW), and Single Channel Ground and Airborne Radio System (SINCGARS) waveform. Using its Over-the-Air-Management (OTAM) functionality, JENM provides the Commander the ability to quickly reconfigure critical networks. JENM enhances the S6's ability to conduct Course of Action (COA) Analysis and the Military Decision Making Process (MDMP), providing commanders critical information regarding their ability to communicate.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2024 Navy	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605031N / <i>JNT Tactical Network (JTN)</i>
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FY 2024 radio planner prototyping efforts via Atom development will design, engineer, integrate and test of planning and management capabilities for the Tactical Radio network in support of the TrellisWare Scalable Manet (TSM), and the Warrior Robust Enhanced Network (WREN) waveforms. Atom development aligns with the Unified Network Operations (UNO) vision to provide further integration of the Integrated Tactical Network (ITN) and Network Management of its emerging systems to enable Soldiers the ability to effectively manage the ITN. The Atom radio planner prototyping efforts will also support MUOS Waveform Planning Continuing System Improvements and rapid provisioning of MUOS end-user terminals, as well as HF Waveform planning in support of HF modernization.

JENM planning applications and radio planner prototyping efforts are deployed on, and critically tied to the Ruggedized Application Platform - Tactical Radios (RAP-TR) hardware from Division to the Company level.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	0.000	0.000	2.528	-	2.528
Current President's Budget	0.000	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	-2.528	-	-2.528
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-2.539	-	-2.539
• Rate/Misc Adjustments	0.000	0.000	0.011	-	0.011

**Change Summary Explanation**

Zero balance in FY 2022 to FY 2024 is attributed to a realignment from Navy (PE 0605031N) and Air Force (PE 0605031F) to Army (PE 0605031A) as per the JTN (JENM) Acquisition Program Baseline (APB) and Tri-Service Funding agreement.