Appendix B.2: Appropriations Subgroup Report

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This is a sample appendix that we are considering for inclusion as supporting information in the final report. The information in this appendix was developed based on feedback and analysis performed by members of a working group that included subject matter experts (SMEs) within the Department who provided input for consideration to the SWAP study. The working group was asked to: (1) distill the feedback received from case studies, interviews, literature reviews, and feedback from the Board members into main issue points; (2) as SMEs identify the statutory, regulatory, and cultural obstacles to achieving the Board's vision for a desired end state; and (3) provide suggested language to remove the barriers.

The Department's current Planning, Programming, Budgeting and Execution (PPBE) system framework and process uses defined Program Elements (PEs), is categorized by lifecycle-phased appropriations, and requires two years or more in lead time from plan to execution. This approach was designed and structured for traditional waterfall acquisition used to deliver monolithic platforms such as aircraft, ships, and vehicles. The PPBE framework and process is challenging when leveraging agile and iterative acquisition methodologies to deliver software-intensive, information-enabling capabilities through a continuous engineering process. The current process limits the ability to quickly adapt systems against rapidly changing threats and increases the barriers for integrating advancements in digital technology in a timely and effective manner.

Pain points and Obstacles

Appropriation methods were intended for hardware systems and platforms. DoD continues to acquire and fund information-centric systems using processes designed for hardware-centric platforms. Current funding decision processes and data structures do not effectively support leading software development practices. As a result, the DoD is not effective in leveraging and adapting to the pace of innovation seen in industry. Differentiating continuous iteration and continuous delivery of software workload as Research, Development, Test & Evaluation (RDT&E), Procurement, or Operations and Maintenance (O&M) is meaningless as software is never done, and there should be no final fielding or sustainment element in continuous engineering. System defined program elements hinder the ability to deliver holistic capabilities and services and do not enable real-time resource, requirements, performance, and schedule trades across systems without significant work.

Establishing a culture of experimentation, adaptation and risk-taking is difficult. The Department requires a process that supports early adoption of the most modern information-centric technologies and enables continuous process improvement. The Deputy Secretary of Defense directed aggressive steps "…to ensure we are employing emerging technologies to meet warfighter needs; and to increase speed and agility in technology development and procurement." The current cycle of planning, budgeting, and executing across appropriation categories slows acquisition, development, and execution to a pace that is not sustainable for mission success.

Example. An Information & Technology project using an agile approach to continuous development and integration may still require funding from more than one appropriation. The underlying purpose of each discrete task within the software system determines the correct appropriation for budgeting of that task. This drives significant complexities into the program management, budgeting, review, and oversight of every software-intensive system, and causes insufferable delays in funding awards and delivery of continuous improvements.

Desired state. The desired state for the Department would be one in which continuous engineering throughout a software program's lifecycle is possible, and the lengthy two-plus year lead times for programming and budgeting is removed. This would provide flexibility to execute desired features with the speed and agility necessary to meet the rapid changes in threats, information technologies, processes, and services. The single appropriation across the lifecycle of a capability will enable continuous development, security, and operations (DevSecOps); allow for minimum viable product delivery at a relevant speed; support the use of managed services; provide for greater transparency for information-centric capabilities; and provide the flexibility to pursue the most effective solution available at the time of acquisition without current restrictions of appropriations.

Ideas for change. *A new multi-year appropriation for Digital Technology needs to be established for each Military Department and the Fourth Estate.* This appropriation fund would provide a single two-year appropriation for the lifecycle management of software-intensive and infrastructure-technology capabilities. This could be a stand-alone appropriation, or fall under the umbrella of an already established appropriation, with the appropriate caveats that allow it to behave as the single source of funding across the lifecycle. The Department would seek to couple this new appropriation with the movement to a capability or service portfolio management construct. A project framework within each capability PE (i.e., logistics or intelligence) would represent the systems and key investments supporting the delivery of information-centric capabilities such as data conditioning and process reengineering. Capability portfolio management would better enable agile/iterative force development and management decisions to include realignment of resources from one system to another system or process reengineering effort within the portfolio to increase the velocity of minimum viable product output and overall capability delivery. PPBE decision making would be adjusted to allow for less detail in the programming process and greater specificity in the budgeting process – as close to execution as possible – to realize the benefits of agile/iterative development.

- The Components will program, budget, and execute for information and technology capabilities from one appropriation throughout the lifecycle rather than using RDT&E, procurement, or O&M appropriations, which are often applied inconsistently and inaccurately. This will allow for continuous engineering.
- Within each Component-unique Budget Activity (BA), Budget Line Items (BLINs) align by functional or operational portfolios. The BLINs may be further broken into specific projects to provide an even greater level of fidelity. These projects would represent key systems and supporting activities, such as mission engineering.

- By taking a portfolio approach for obtaining software intensive capabilities, the Components can better manage the range of requirements, balance priorities, and develop portfolio approaches to enable the transition of data to information in their own portfolios and data integration across portfolios to achieve mission effects, optimize the value of cloud technology, and leverage and transition to the concept of acquisition of whole data services vice individual systems.
- This fund will be apportioned to each of the Military Departments and OSD for Fourth Estate execution.
- Governance: management execution, performance assessment, and reporting would be aligned to the portfolio framework—BA, BLI, project.

DRAFT Proposed Legislative/Regulatory Language

DRAFT Proposed Language for New Appropriation

DIGITAL TECHNOLOGY MANAGEMENT APPROPRIATION (INCLUDING TRANSFER OF FUNDS)

For expenses necessary for the continuous lifecycle management (requirements, research, development, test and evaluation, procurement, production, modification, and operation and maintenance) of software, software-based services and supporting technologies to include requisite hardware for Department of Defense business and information warfare capabilities, as authorized by law. [$000,000,000] to remain available for obligation until [September 30, 2022**]**: *Provided*, that the funds are available for software, and electronic tools, systems, applications, resources, or an applicable emerging technology, acquisition of services, business process re-engineering activities, functional requirements development, technical evaluations, and other activities in direct support of acquiring, developing, deploying, sustaining, enhancing, and modernizing software and information technology capabilities.

DRAFT Proposed Language for Authorization Bill

DIGITAL TECHNOLOGY MANAGEMENT APPROPRIATION

To further enable HR 2810's intent of streamlining and improving the efficiency and effectiveness of software acquisition in order to maintain defense technology advantage, funds are hereby authorized to be appropriated for fiscal year 2021 for use by the Armed Forces and other activities and agencies of the Department of Defense for expenses, not otherwise provided for, for a new Department of Defense appropriation within the **[**TBD if this resides under an established appropriation, or new**]** family of appropriations called Digital Technology Management, as specified in the funding table in section **[**???**]**. This appropriation replaces all other appropriation types used in executing lifecycle management of software, software-based services, and supporting technologies to include requisite hardware for Department of Defense business and information warfare capabilities. The Department of Navy Information Warfare Capabilities and Department of Air Force Business Operations Capabilities will pilot the effort, and if successful will be expanded in 2022 to all information centric capability areas across the Department of Defense. The Department of Navy and the Department of Air Force shall identify the affected programs and transition all existing funds—RDT&E, Procurement, and O&M to the new appropriation for execution in FY 2021. Reporting to Congress continues using the existing [TBD or new] budget display. Baseline and Progress reporting on the effectiveness of the appropriation structure in executing shall be reported semi-annually to the Defense Appropriations Committees.

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