

**DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH PROGRAM
COMMERCIAL SOLUTIONS OPENING (CSO)
DIRECT-TO-PHASE-II X23.4
AMENDMENT 2
10 NOVEMBER 2022**

1. This Amendment modifies the subject solicitation as follows:
 - a. All solicitation references to topic “AF234-ODCSO20” are deleted and replaced with “AFX234-DCSO2”. These deletions and replacements take place on pages 33, 49, 50, 77, and 82. Deletions are labeled with a ~~strikethrough and red text~~, and additions are highlighted yellow.
 - b. The page numbers in the table associated with Amendment 1 are updated as a result of this Amendment.
2. All other solicitation terms and provisions remain unchanged as a result of this Amendment.

**DEPARTMENT OF THE AIR FORCE (DAF)
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AMENDMENT 1
27 OCTOBER 2022**

3. This Amendment modifies the subject solicitations in accordance with the table below. Deletions are labeled with a ~~strikethrough and red text~~, and additions are highlighted **yellow**.

Page	Section/Subsection	Modification
5	Cover Page	“AF” changed to “DAF”
8	2(a)	US Air Force S&T Strategy hyperlink URL is modified.
9	2(c)	Phase II description of basis is revised to read Phase II awards will be made to firms on the basis of results of their Phase I effort and/or the scientific merit, technical merit, and commercialization potential of the Phase II proposal.
13	2(d)	“Principal Investigator”- language is adding indicating that deviations from Principal Investigator employment requirements must be approved prior to proposal submission . Language regarding Phase I and STTR submissions deleted from this subsection.
18	3(c)	The following language is added: However, based on a rare and unique circumstance, the DAF may approve a particular portion of the R/R&D work to be performed or obtained in a country outside of the United States, for example, if a supply or material or other item or project requirement is not available in the United States.
21	4(b)(x)	Revised to reflect the DAF’s new automated proposal feedback regime.
22-23	4(b)(xii)(1)	The following language is added: The Government currently anticipates approximately 104 awards as a result of this solicitation.
23	4(b)(xiii)(3)	The following language is deleted: Refer to the Component-specific instructions given at the beginning of that Component's topics for help with an administrative question.
25	4(b)(xvii) and (4)(b)(xviii)	Both sections are deleted.
27	5(a)	An asterisk (*) is added before “NOTE”.
28	5(b)(vi)	“Regulatory Activities Attachment” is deleted.
30	5(f)(ii)(b) and 5(f)(ii)(c)	Renaming from “Focus Areas” to “Strategic Capabilities” and adding AND/OR
32	5(f)(ii)(g)	“Compliance and Regulatory Activities” is added from the former Appendix A.
33	5(f)(ii)(3)(h)(vi)	Subsections describing “Final Report”, “Status Reports”, “Phase II Summary Report”, and “Safety-Related Deliverables” become

		subsections to 5(f)(ii)(3)(h)(vi), and are numbered 5(f)(ii)(3)(h)(vi)(1) through 5(f)(ii)(3)(h)(vi)(4)
40	5(g)	The following language is added for clarification: Proposals submitted that exceed the maximum specified SBIR funding amount will not be considered for award.
43	5(i)	The following language is deleted: (Refer to section 9.4.1 to determine applicability.)
44	5(i)(iv)(5)	The total is changed to one-half.
46-47	5(j)	The following language is deleted: The Fraud, Waste and Abuse (FWA) training is required. The training provides information on what represents FWA in the SBIR/STTR Programs, the most common mistakes leading to FWA, and the penalties and ways to prevent FWA. This training material must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline.
47	5(j)	The following language is added: The Fraud, Waste and Abuse (FWA) training is required for Phase I and Direct to Phase II proposals. FWA training provides information on what represents FWA in the SBIR/STTR program, the most common mistakes that lead to FWA, as well as the penalties and ways to prevent FWA in your firm. This training material can be found in the Volume 6 section of the proposal submission module in DSIP and must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline. FWA training must be completed by one DSIP firm user with read/write access (Proposal Owner, Corporate Official or Firm Admin) on behalf of the firm.
50	6(2)	“DAF TPOC” is deleted and replaced with “end-user and customer”.
54	7(e)	The following language is added: As detailed in DFARS 252.227-7018(b)(1), the Government shall have unlimited rights in specific technical data or computer software generated under SBIR/STTR contracts, to include form, fit, and function data and data necessary for installation, operation, maintenance, and training purposes. Aside from the unlimited rights afforded under DFARS 252.227-7018(b)(1), the Government shall have SBIR data rights in all other technical data or computer software generated under this contract for a period of 20 years, commencing upon contract award.
54	7(e)	The following language is deleted: The Government obtains a royalty free license to use such technical data only for Government purposes during the period commencing with contract/Other Transaction award and ending after 20 years.

55	8(a)(i)	Subsection deleted
58, 59		Topic Numbers are changed to AFX234-DCSO1 and AFX234-DCSO2
59	Phase III	Revised to read: PHASE III DUAL USE APPLICATIONS: Some solutions may go from Phase II to Phase III as soon as the product-market fit is verified. Potential Phase III awardees will transition the adapted non-Defense commercial solution to provide expanded mission capability for a broad range of potential Governmental and civilian users and alternate mission applications.
64	Appendix A	Appendix is deleted in its entirety. Read Subsection 5(b) for an authoritative accounting of required proposal contents
72	Appendix B, Para 2	Reference changed from Section 3.22 to Section 2(d)
72	Appendix B, Para 4	The following language is deleted: If the firm is 50% or more owned or managed by a corporate entity that is not a small business, the proposal will be disqualified.
72	Appendix B, Para 5	Deleted reference to Phase I Performance of Work Requirements; reference changed from Section 4.2 to Section 3(c)
72	Appendix B, Para 5	Reference changed from Section 4.2 to Section 2(d)
72	Appendix B, Para 6	The following language is deleted: If primary employment of the Principal Investigator for this project is NOT with the firm at award and throughout performance, the proposal will be disqualified.
73	Appendix B, Para 9	Reference changed from Section 3.1 to Section 2(d)
75	Appendix B, Para 20	The following language is deleted: except that the Government obtains a royalty free license to use such technical data only for Government purposes during the period commencing with contract award and ending 20 years later. This data should be marked with the restrictive legend specified in DFARS 252.227-7018.
75	Appendix B, Para 20	The following language is added: As detailed in DFARS 252.227-7018(b)(1), the Government shall have unlimited rights in specific technical data or computer software generated under SBIR/STTR contracts, to include form, fit, and function data and data necessary for installation, operation, maintenance, and training purposes. Aside from the unlimited rights afforded under DFARS 252.227-7018(b)(1), the Government shall have SBIR data rights in all other technical data or computer software generated under this contract for a period of 20 years, commencing upon contract award.

4. All other solicitation terms and provisions remain unchanged as a result of this Amendment.

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Proposal Submission Timelines

- **25 Oct. 2022:** DAF begins accepting proposals
- **22 Nov. 2022:** Full proposals due **no later than 12:00 p.m. ET**
- **Deadline for Receipt:** No exceptions will be made to the above submission deadline. DAF recommends early submission, as computer traffic intensifies near announcement closing. **Do not wait until the end of the submission period to submit proposal materials.** DAF is not responsible for missed proposal submission due to system lag or inaccessibility.

Proposal Submission Overview

- All proposals must be prepared and submitted through the Department of Defense (DOD) SBIR/STTR Innovation Portal (DSIP), <https://www.dodsbirsttr.mil/>.
- Ensure applicant email address is accurate. DAF is not responsible for missed notifications due to applicants changing mailing addresses/email addresses/company points of contact after submission without notifying the **DAF**.
- DSIP is the official portal for DoD SBIR/STTR proposal submission. Applicants are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Applicants submitting through this site for the first time will be asked to register. Applicants are required to register for a Login.gov account and link it to their DSIP account.
- **Classified proposals are NOT accepted.**

SBIR/STTR Help Desk: For AF SBIR/STTR Program questions, contact the USAF SBIR/STTR One Help Desk at 1-855-855- 5360 or usaf.team@afsbirsttr.us.

DSIP Support Desk:

- Refer to the DSIP Customer Support Document for general information regarding the DoD SBIR/STTR process in DSIP. For additional assistance with the DSIP application, please visit the Learning & Support section of the DSIP at <https://www.dodsbirsttr.mil/submissions/learning-support/>.
- Email DSIP Support at DoDSBIRSupport@reisystems.com only for further assistance with issues pertaining directly to the DSIP application. Questions submitted to DSIP Support will be addressed in the order received during normal operating hours (Monday through Friday, 9:00 a.m. to 5:00 p.m. ET).
- Applicants are responsible for following ALL troubleshooting guidance provided by DSIP Support. Applicants are responsible for following up with DSIP Support in case provided troubleshooting tips do not resolve applicant proposal submission issues. Applicant proposal submission failure is virtually never attributable to DSIP performance issues.

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1. Introduction

The Department of the Air Force (DAF) invites small business firms to submit proposals under this CSO for the Small Business Innovation Research (SBIR) Program. The DAF encourages firms with the capability to conduct research and development (R&D) and to commercialize results in accordance with the DAF-related topics described in Section 13 to apply to this solicitation.

The 2014 Quadrennial Defense Review (QDR) established innovation as a central line of effort in the United States' (US') national Defense strategy. The US' decisive military advantage over its adversaries and peer competitors is steadily eroding. Consequently, under section 879 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2017 (Pub. L. 114-328) Contracting Officers may acquire innovative commercial items, technologies, or services using a competitive procedure called a Commercial Solutions Opening (CSO). Under the CSO, DoD may competitively select proposals received in response to a general solicitation, similar to a Broad Agency Announcement, based on proposal review by Government scientific, technological, or other subject-matter experts. CSO use in accordance with Class Deviation 2022-O0007 is considered competitive for the purposes of 10 U.S.C. chapter 127 and FAR 6.102. Contracting officers shall treat items, technologies, and services acquired under a CSO as commercial items. The full definition of commercial items, i.e., products and services, under FAR 2.101 applies. This CSO includes no requirement for a commercial product or service to be an already-developed, off-the-shelf item.

This CSO seeks innovative, commercial technologies proposed to create new DAF solutions or potential new capabilities fulfilling requirements, closing capability gaps, or providing potential technological advancements. This CSO may result in the award of prototype projects, which include not only commercially available technologies fueled by commercial or strategic investment, but also concept demonstrations, pilots, and agile development activities improving commercial technologies, existing Government-owned capabilities, or concepts for broad Defense application(s). The Government reserves the right to award a contract or an Other Transaction for any purpose, to include a prototype, under this CSO. The DAF also reserves the right to award all, part, or none of the proposals received. The Federal Government is not responsible for any monies expended by the applicant before award. The SBIR/STTR Programs are not substitutes for existing unsolicited proposal mechanisms. Unsolicited proposals are not accepted under the AF SBIR/STTR Programs for Phases I or II.

Information related to the AF Small Business Program is found at <http://www.airforcesmallbiz.af.mil/>. The site contains contracting opportunities within the DAF, as well as business information and upcoming outreach/conference events. Other informative sites include the Small Business Administration (SBA), www.sba.gov, the DoD Office of Small Business Programs, <https://business.defense.gov/>, and Procurement Technical Assistance Centers, <http://www.aptac-us.us.org>. These centers provide Government contracting assistance and guidance to small businesses, typically at no cost.

2. Program Description

a. Objectives

The DAF SBIR Program's objectives include stimulating technological innovation, strengthening the small business role in meeting DoD research, development, test, and evaluation (RDT&E) needs, fostering and encouraging minority and disadvantaged

persons-owned small businesses in technological innovation, and increasing commercial application of DoD-supported RDT&E results.

The United States Air Force has identified 6 Strategic Capabilities: Air Superiority; Intelligence, Surveillance, and Reconnaissance; Rapid Global Strike; Command and Control; Responsibilities to organize, train, and equip Airmen; Air Force *Blue Sky. The United States Space Force has identified six Strategic Capabilities: Space Security; Combat Power Projection; Space Mobility and Logistics; Information Mobility; Space Domain Awareness; Responsibilities to organize, train, and equip Guardians; Space Force *Blue Sky.

*Additionally, it is possible for a solution to provide a strategic capability in a previously unconsidered area. Therefore, if an applicant feels its solution does not fit within one of the listed capabilities, it can reference the “BLUE SKY” category, including an explanation of the solution’s ability to provide increased strategic capability within the context of Air Force, Space Force, national, and global constraints.

As applicable, the applicant should address the category(ies) to which the solution aligns in the Technical Volume.

US Air Force S&T Strategy:

<https://www.af.mil/Portals/1/documents/2019%20SAF%20story%20attachments/Air%20Force%20Science%20and%20Technology%20Strategy.pdf?ver=2019-04-17-131216-723×tamp=1555530064092>

<https://www.af.mil/Portals/1/documents/2019%20SAF%20story%20attachments/Air%20Force%20Science%20and%20Technology%20Strategy.pdf>

USSF Long-Term Science and Technology Challenges:

[https://media.defense.gov/2021/Dec/16/2002910798/-1/-](https://media.defense.gov/2021/Dec/16/2002910798/-1/-1/1/S&T%20CHALLENGES%20MEMO_20210924114716.PDF)

[1/1/S&T%20CHALLENGES%20MEMO_20210924114716.PDF](https://media.defense.gov/2021/Dec/16/2002910798/-1/-1/1/S&T%20CHALLENGES%20MEMO_20210924114716.PDF)

The AF SBIR Program follows the policies and practices of the Small Business Administration (SBA) SBIR/STTR Policy Directive (1 Oct 20),

https://www.sbir.gov/sites/default/files/SBA_SBIR_STTR_POLICY_DIRECTIVE_OCT_2020_0.pdf. This CSO incorporates and makes use of Policy Directive flexibilities to encourage proposals based on scientific and technical approaches most likely to yield important results for the DAF and private sector.

b. Technology and Program Protection to Maintain Technological Advantage

In accordance with DoD Instruction 5000.83, Technology and Program Protection to Maintain Technological Advantage Change 1, effective 21 May 2021, and as a means to counter the threat from strategic competitor nations, the DoD will employ risk-based measures to protect systems and technologies from adversarial exploitation and compromise of U.S. military vulnerabilities and weaknesses in: (1) systems, (2) components, (3) software, (4) hardware, and (5) supply chains. The initial measure being implemented for the SBIR Program is to require SBIR prime contractor awardees and their subcontractors to self-report and disclose foreign investment in ownership of, or influence over, U.S. entities, including subsidiaries and joint ventures. Reporting and disclosing such information will enable the DoD to identify national security risks posed by foreign participation, through investment, ownership, or influence, in the Defense industrial base. This information will be used by DoD program offices to determine risks

posed by SBIR contractor awardees and their subcontractors to the DoD and the Defense industrial base.

c. Three Phase Program

Phase I

The purpose of Phase I is to determine, to the extent possible, the scientific, technical, and commercial merit and feasibility of ideas submitted under the SBIR Program. Phase I awards are made in accordance with the SBA Policy Directive guidelines, current version. The period of performance is generally between six to twelve months with twelve months being the maximum period allowable. Proposals should concentrate on research or research and development which will significantly contribute to proving the scientific and technical feasibility, and commercialization potential of the proposed effort, the successful completion of which is a prerequisite for further DoD support in Phase II. Proposers are encouraged to consider whether the research or research and development being proposed to DoD Components also has private sector potential, either for the proposed application or as a base for other applications.

Phase II

Phase II awards will be made to firms on the basis of results of their Phase I effort and ~~of~~ the scientific merit, technical merit, and commercialization potential of the Phase II proposal. Phase II awards are made in accordance with the SBA Policy Directive guidelines, current version. The period of performance is generally 24 months. Phase II is the principal research or research and development effort and is expected to produce a well-defined deliverable prototype. A Phase II contractor may receive up to one additional, sequential Phase II award for continued work on the project.

Phase III

Under Phase III, the Proposer is required to obtain funding from either the private sector, a non-SBIR Government source, or both, to develop the prototype into a viable product or non-R&D service for sale in military or private sector markets. SBIR Phase III refers to work that derives from, extends, or completes an effort made under prior SBIR funding agreements, but is funded by sources other than the SBIR Program. Phase III work is typically oriented towards commercialization of SBIR research or technology.

d. Definitions

Certified HUBZone Small Business Concern

An SBC that has been certified by SBA under the Historically Underutilized Business Zones (HUBZone) Program (13 C.F.R. § 126) as a HUBZone firm listed in the Dynamic Small Business Search (DSBS).

Commercialization

The process of developing products, processes, technologies, or services and the production and delivery (whether by the originating party or others) of the products, processes, technologies, or services for sale to or use by the Federal government or commercial markets.

Cooperative Research and Development

Research and development conducted jointly by a small business concern and a research institution. For purposes of the STTR Program, 40% of the work is performed by the small business concern, and not less than 30% of the work is performed by the single research institution. For purposes of the SBIR Program, this refers to work conducted by a research institution as a subcontractor to the small business concern.

Covered Individual

An individual who contributes in a substantive, meaningful way to the scientific development or execution of a research and development project proposed to be carried out with a research and development award from a Federal research agency and is designed as a covered individual by the Federal research agency concerned.

Essentially Equivalent Work

Work that is substantially the same research, which is proposed for funding in more than one contract proposal or grant application submitted to the same Federal agency or submitted to two or more different Federal agencies for review and funding consideration; or work where a specific research objective and the research design for accomplishing the objective are the same or closely related to another proposal or award, regardless of the funding source.

Export Control

The International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, will apply to all projects with military or dual-use applications that develop beyond fundamental research, which is basic and applied research ordinarily published and shared broadly within the scientific community. More information is available at https://www.pmddtc.state.gov/ddtc_public.

NOTE: Export control compliance statements found in this document are not meant to be all inclusive. They do not remove any liability from the applicant to comply with applicable ITAR or EAR export control restrictions or from informing the Government of any potential export restriction as fundamental research and development efforts proceed.

Federal Laboratory

As defined in 15 U.S.C. §3703, means any laboratory, any federally funded research and development center (FFRDC), or any center established under 15 U.S.C. §§ 3705 & 3707 that is owned, leased, or otherwise used by a Federal agency and funded by the Federal Government, whether operated by the Government or by a contractor.

Foreign Affiliation

A funded or unfunded academic, professional, or institutional appointment or position with a foreign government or government-owned entity, whether full-time, part-time, or voluntary (including adjunct, visiting, or honorary).

Foreign Country of Concern

The People’s Republic of China, the Democratic People’s Republic of Korea, the Russian Federation, the Islamic Republic of Iran, or any other country determined to be a country of concern by the Secretary of State.

Foreign Entity

Foreign entity means any branch, partnership, group or sub-group, association, estate, trust, corporation or division of a corporation, non-profit, academic institution, research center, or organization established, directed, or controlled by foreign owners, foreign investors, foreign management, or a foreign government.

Foreign Government

Foreign government means any government or governmental body, organization, or instrumentality, including government owned-corporations, other than the United States Government or United States state, territorial, tribal, or jurisdictional governments or governmental bodies. The term includes, but is not limited to, non-United States national and subnational governments, including their respective departments, agencies, and instrumentalities.

Foreign Nationals

Foreign Nationals (also known as Foreign Persons) as defined by 22 CFR 120.16 means any natural person who is not a lawful permanent resident as defined by 8 U.S.C. § 1101(a)(20) or who is not a protected individual as defined by 8 U.S.C. § 1324b(a)(3). It also means any foreign corporation, business association, partnership, trust, society or any other entity or group that is not incorporated or organized to do business in the United States, as well as international organizations, foreign governments and any agency or subdivision of foreign governments (e.g., diplomatic missions).

“Lawfully admitted for permanent residence” means the status of having been lawfully accorded the privilege of residing permanently in the United States as an immigrant in accordance with the immigration laws, such status not having changed.

"Protected individual" means an individual who (A) is a citizen or national of the United States, or (B) is an alien who is lawfully admitted for permanent residence, is granted the status of an alien lawfully admitted for temporary residence under 8 U.S.C. § 1160(a) or 8 U.S.C. § 1255a(a)(1), is admitted as a refugee under 8 U.S.C. § 1157, or is granted asylum under Section 8 U.S.C. § 1158; but does not include

- (i) an alien who fails to apply for naturalization within six months of the date the alien first becomes eligible (by virtue of period of lawful permanent residence) to apply for naturalization or, if later, within six months after November 6, 1986, and
- (ii) an alien who has applied on a timely basis, but has not been naturalized as a citizen within 2 years after the date of the application, unless the alien can establish that the alien is actively pursuing naturalization, except that time consumed in the Service's processing the application shall not be counted toward the 2-year period.

Fraud, Waste and Abuse

Fraud includes any false representation about a material fact or any intentional deception designed to deprive the United States unlawfully of something of value or to secure from the United States a benefit, privilege, allowance, or consideration to which an individual or business is not entitled.

Waste includes extravagant, careless or needless expenditure of Government funds, or the consumption of Government property, that results from deficient practices, systems, controls, or decisions.

Abuse includes any intentional or improper use of Government resources, such as misuse of rank, position, or authority or resources.

The SBIR Program training related to Fraud, Waste and Abuse is available at:
<https://www.sbir.gov/tutorials/fraud-waste-abuse/tutorial-1>.

Funding Agreement

Any contract, grant, or cooperative agreement entered into between any Federal Agency and any small business concern for the performance of experimental, developmental, or research work, including products or services, funded in whole or in part by the Federal Government. Only the contract method will be used by DoD Components for all SBIR awards.

Historically Black Colleges and Universities and Minority Institutions (HBCU/MI)

Listings for the Historically Black Colleges and Universities (HBCU) and Minority Institutions (MI) are available through the Department of Education Web site,
<http://www.ed.gov/about/offices/list/ocr/edliteminorityinst.html>.

Malign Foreign Talent Recruitment Program

(A) any program, position, or activity that includes compensation in the form of cash, in-kind compensation, including research funding, promised future compensation, complimentary foreign travel, things of non de minimis value, honorific titles, career advancement opportunities, or other types of remuneration or consideration directly provided by a foreign country at any level (national, provincial, or local) or their designee, or an entity based in, funded by, or affiliated with a foreign country, whether or not directly sponsored by the foreign country, to the targeted individual, whether directly or indirectly stated in the arrangement, contract, or other documentation at issue, in exchange for the individual—

- (i) engaging in the unauthorized transfer of intellectual property, materials, data products, or other nonpublic information owned by a United States entity or developed with a Federal research and development award to the government of a foreign country or an entity based in, funded by, or affiliated with a foreign country regardless of whether that government or entity provided support for the development of the intellectual property, materials, or data products;
- (ii) being required to recruit trainees or researchers to enroll in such program, position, or activity;
- (iii) establishing a laboratory or company, accepting a faculty position, or undertaking any other employment or appointment in a foreign country or with an entity based in, funded by, or affiliated with a foreign country if such activities are in violation of the standard terms and conditions of a Federal research and development award;
- (iv) being unable to terminate the foreign talent recruitment program contract or agreement except in extraordinary circumstances;
- (v) through funding or effort related to the foreign talent recruitment program, being limited in the capacity to carry out a research and development award or required to engage in work that would result in substantial overlap or duplication with a Federal research and development award;
- (vi) being required to apply for and successfully receive funding from the sponsoring foreign government's funding agencies with the sponsoring foreign organization as the recipient;
- (vii) being required to omit acknowledgment of the recipient institution with which the individual is affiliated, or the Federal research agency sponsoring the

research and development award, contrary to the institutional policies or standard terms and conditions of the Federal research and development award;
(viii) being required to not disclose to the Federal research agency or employing institution the participation of such individual in such program, position, or activity; or
(ix) having a conflict of interest or conflict of commitment contrary to the standard terms and conditions of the Federal research and development award;
and

(B) a program that is sponsored by—

- (i) a foreign country of concern or an entity based in a foreign country of concern, whether or not directly sponsored by the foreign country of concern;
- (ii) an academic institution on the list developed under section 1286(c)(8) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. 2358 note; Public Law 115–232); or
- (iii) a foreign talent recruitment program on the list developed under section 1286(c)(9) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. 2358 note; Public Law 115–232).

Performance Benchmark Requirements for Phase I and Direct-to-Phase-II

Companies with multiple SBIR/STTR awards must meet minimum performance requirements to be eligible to apply for a new Phase I or Direct-to-Phase II award. The purpose of these requirements is to ensure that Phase I applicants that have won multiple prior SBIR/STTR awards are making progress towards commercializing the work done under those awards. The Phase I to Phase II Transition Rate addresses the extent to which an awardee progresses a project from Phase I to Phase II. The Commercialization Benchmark addresses the extent to which an awardee has moved past Phase II work towards commercialization. Additional information on performance benchmarking for Phase I applicants can be found at <https://www.sbir.gov/performance-benchmarks>.

Principal Investigator

The principal investigator/project manager is the one individual designated by the applicant to provide the scientific and technical direction to a project supported by the funding agreement.

For both Phase I and Phase II, the primary employment of the principal investigator must be with the small business firm at the time of award and during the conduct of the proposed project. Primary employment means that more than one-half of the principal investigator's time is spent in the employ of the small business. This precludes full-time employment with another organization.

Occasionally, deviations from this requirement may occur, and must be approved in writing by the contracting officer after consultation with the agency SBIR/STTR Program Manager/Coordinator **prior to proposal submission**. Further, a small business firm ~~or research institution~~ may replace the principal investigator on ~~an SBIR/STTR Phase I or a Phase II award~~, subject to approval in writing by the contracting officer.

Proprietary Information

Proprietary information is information that you provide which constitutes a trade secret, proprietary commercial or financial information, confidential personal information or data affecting the national security.

Research Institution

Any organization located in the United States that is:

- a. A university.
- b. A nonprofit institution as defined in Section 4(5) of the Stevenson-Wydler Technology Innovation Act of 1980.
- c. A contractor-operated federally funded research and development center, as identified by the National Science Foundation in accordance with the government-wide Federal Acquisition Regulation issued in accordance with Section 35(c)(1) of the Office of Federal Procurement Policy Act. A list of eligible FFRDCs is available at: <https://www.nsf.gov/statistics/ffrdclist/>.

Research or Research and Development

Any activity that is:

- a. A systematic, intensive study directed toward greater knowledge or understanding of the subject studied.
- b. A systematic study directed specifically toward applying new knowledge to meet a recognized need; or
- c. A systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

Research Involving Animal Subjects

All activities involving animal subjects shall be conducted in accordance with DoDI 3216.01 "Use of Animals in DoD Programs," 9 C.F.R. parts 1-4 "Animal Welfare Regulations," National Academy of Sciences Publication "Guide for the Care & Use of Laboratory Animals," as amended, and the Department of Agriculture rules implementing the Animal Welfare Act (7 U.S.C. §§ 2131-2159), as well as other applicable federal and state law and regulation and DoD instructions.

"Animal use" protocols apply to all activities that meet any of the following criteria:

- a. Any research, development, test, evaluation or training, (including experimentation) involving an animal or animals.
- b. An animal is defined as any living or dead, vertebrate organism (non-human) that is being used or is intended for use in research, development, test, evaluation or training.
- c. A vertebrate is a member of the subphylum Vertebrata (within the phylum Chordata), including birds and cold-blooded animals.

See DoDI 3216.01 for definitions of these terms and more information about the applicability of DoDI 3216.01 to work involving animals.

Research Involving Human Subjects

All research involving human subjects shall be conducted in accordance with 32 C.F.R. § 219 "The Common Rule," 10 U.S.C. § 980 "Limitation on Use of Humans as Experimental Subjects," and DoDI 3216.02 "Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research," as well as other applicable federal and state law and regulations, and DoD component guidance. Proposers must be cognizant of and abide by the additional restrictions and limitations imposed on the DoD regarding research involving human subjects, specifically as they regard vulnerable populations (DoDI 3216.02), recruitment of military research subjects (DoDI 3216.02), and informed consent and surrogate consent (10 U.S.C. § 980) and chemical and biological agent research (DoDI 3216.02). Food and Drug Administration regulation and policies may also apply.

“Human use” protocols apply to all research that meets any of the following criteria:

- a. Any research involving an intervention or an interaction with a living person that would not be occurring or would be occurring in some other fashion but for this research.
- b. Any research involving identifiable private information. This may include data/information/specimens collected originally from living individuals (broadcast video, webuse logs, tissue, blood, medical or personnel records, health data repositories, etc.) in which the identity of the subject is known, or the identity may be readily ascertained by the investigator or associated with the data/information/specimens.

See DoDI 3216.02 for definitions of these terms and more information about the applicability of DoDI 3216.02 to research involving human subjects.

Research Involving Recombinant DNA Molecules

Any recipient performing research involving recombinant DNA molecules and/or organisms and viruses containing recombinant DNA molecules shall comply with the National Institutes of Health Guidelines for Research Involving Recombinant DNA Molecules, dated January 2011, as amended. The guidelines can be found at: https://osp.od.nih.gov/wp-content/uploads/2016/05/NIH_Guidelines.pdf.

Recombinant DNA is defined as

- (i) molecules that are constructed outside living cells by joining natural or synthetic DNA segments to DNA molecules that can replicate in living cells or
- (ii) molecules that result from the replication of those described in (i) above.

Service-Disabled Veteran-Owned Small Business (SDVOSB)

A small business concern owned and controlled by a Service-Disabled Veteran or Service-Disabled Veterans, as defined in Small Business Act 15 USC § 632(q)(2) and SBA’s implementing SDVOSB regulations (13 CFR 125).

Small Business Concern (SBC)

A concern that meets the requirements set forth in 13 C.F.R. § 121.702 (available here).

An SBC must satisfy the following conditions on the date of award:

- a. Is organized for profit, with a place of business located in the United States, which operates primarily within the United States or which makes a significant contribution to the United States economy through payment of taxes or use of American products, materials or labor;
- b. Is in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that if the concern is a joint venture, each entity to the venture must meet the requirements set forth in paragraph (c) below;
- c. Is more than 50% directly owned and controlled by one or more individuals (who are citizens or permanent resident aliens of the United States), other small business concerns (each of which is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the United States), or any combination of these; and
- d. Has, including its affiliates, not more than 500 employees. (For explanation of affiliate, see www.sba.gov/size.)

Subcontract

A subcontract is any agreement, other than one involving an employer-employee relationship, entered into by an awardee of a funding agreement calling for supplies or services for the performance of the original funding agreement. This includes consultants.

Subcontractor

Subcontractor means any supplier, distributor, vendor, firm, academic institution, research center, or other person or entity that furnishes supplies or services pursuant to a subcontract, at any tier.

United States

Means the fifty states, the territories and possessions of the Federal Government, the Commonwealth of Puerto Rico, the Republic of the Marshall Islands, the Federated States of Micronesia, the Republic of Palau, and the District of Columbia.

Women-Owned Small Business Concern

An SBC that is at least 51% owned by one or more women, or in the case of any publicly owned business, at least 51% of the stock is owned by women, and women control the management and daily business operations.

3. Proposal Fundamentals**a. Introduction**

The proposal must provide sufficient information to demonstrate to the reviewers the proposed work represents an innovative approach to investigation of important scientific or engineering problems and is worthy of support under the stated criteria. The proposed RDT&E must be responsive to the chosen topic.

b. Registrations and Certification Requirements**i. Defense SBIR/STTR Innovation Portal**

Individuals from proposing firms must be registered in the Defense SBIR/STTR Innovation Portal (DSIP) in order to prepare and submit proposals. The DSIP application is only accessible from within the United States, which is defined as the fifty states, the territories and possessions of the Federal Government, the Commonwealth of Puerto Rico, the Republic of the Marshall Islands, the Federated States of Micronesia, the Republic of Palau, and the District of Columbia. All users are required to have an individual user account to access DSIP. As DSIP user accounts are authenticated by Login.gov, all users, who do not already have a Login.gov account, will be required to create one. If you already have a Login.gov account, you can link your existing Login.gov account with your DSIP account. Job Aids and Help Videos to walk you through the process are in the Learning & Support section of DSIP, can be accessed here: <https://www.dodsbirsttr.mil/submissions/learning-support/training-materials>.

Be advised that the sharing of accounts and passwords is a violation of the Terms of Use for Login.gov and DoD policy. The practice of sharing accounts and passwords is also likely to cause technical issues associated with proposal submission, and many difficulties applicants encounter are directly attributable to these practices.

Please note that the email address you use for Login.gov should match the email address associated with your existing DSIP account. If you do not recall the email address associated with your DSIP account, or if you already have an existing Login.gov account using a different email address, you will need your Firm's DUNS number and your Firm PIN in order to link your Login.gov account with your DSIP account. If the email address associated with your existing DSIP account has been used for multiple DSIP August 24, 2022 17 accounts within your Firm, you will also need your Firm's DUNS number and your Firm PIN in order to link your Login.gov account with your DSIP account. The Firm PIN can be obtained from your Firm Admin. You can view the Firm Admin's contact information by entering your Firm's DUNS number when prompted. If you are the Firm Admin, please ensure that you contact all DSIP users in your Firm and provide them with the Firm PIN.

Users should complete their account registrations as soon as possible to avoid any delays in proposal submissions.

ii. SAM.gov

Before the DoD Components can award a contract, proposing firms must be registered in the System for Award Management (SAM). SAM allows firms interested in conducting business with the federal government to provide basic information on business structure and capabilities as well as financial and payment information. To register, visit www.sam.gov. Firms should login to SAM and ensure the firm's registration is active and representations and certifications are up-to-date to avoid delay in award.

On April 4, 2022, the DUNS Number was replaced by the Unique Entity ID (SAM). The Federal Government will use the UEI (SAM) to identify organizations doing business with the Government. The DUNS number will no longer be a valid identifier. If the firm has an entity registration in SAM.gov (even if the registration has expired), a UEI (SAM) has already been assigned. This can be found by signing into SAM.gov and selecting the Entity Management widget in the Workspace or by signing in and searching entity information. For firms with established Defense SBIR/STTR Innovation Portal (DSIP) accounts, update the firm profile with the UEI (SAM) as soon as possible.

For new firm registrations, follow instructions during SAM registration on how to obtain a Commercial and Government Entry (CAGE) code and be assigned the UEI (SAM). Once a CAGE code and UEI (SAM) are obtained, update the firm's profile on the DSIP at <https://www.dodsbirsttr.mil/submissions/>.

c. Applicant Eligibility Requirements

Each applicant must qualify as a small business concern as defined by 13 C.F.R §§ 701-705 at time of award and is required to certify to this in the Cover Sheet section of the proposal. The eligibility requirements for the SBIR/STTR programs are unique and do not correspond to those of other small business programs.

For Phase II, a minimum of **one-half (50%)** of the research and/or analytical work must be performed by the proposing firm. The percentage of work is measured by both direct and indirect costs, **not including profit.**

The primary employment of the principal investigator must be with the small business firm at the time of the award and during the conduct of the proposed effort. Primary employment means that more than one-half of the principal investigator's time is spent with the small business. Primary employment with a small business concern precludes full-time employment at another organization.

All research or research and development work typically must be performed by the small business concern and its subcontractors in the United States. However, based on a rare and unique circumstance, the DAF may approve a particular portion of the R/R&D work to be performed or obtained in a country outside of the United States, for example, if a supply or material or other item or project requirement is not available in the United States.

d. Joint Ventures

Joint ventures and limited partnerships are permitted, provided the entity created qualifies as a small business in accordance with the Small Business Act, 13 U.S.C. § 121.701. Applicants must disclose joint ventures with existing (or planned) relationships/partnerships with any foreign entity or any foreign government- controlled companies.

e. Benchmarks

- i. Applicants with prior SBIR/STTR awards must meet two benchmark requirements for progress toward commercialization as determined by the Small Business Administration (SBA) on 1 June of each year.
- ii. For all applicants with greater than 20 Phase I awards over the past five fiscal years, excluding the most recent year (currently FY 2017-2021), the ratio of Phase II awards to Phase I awards must be at least 0.25.
- iii. For all applicants with greater than 15 Phase II awards over the last ten fiscal years excluding the last two years (currently FY 2012-2021), the proposer must have received, to date, an average of at least \$100,000 of sales and/or investments per Phase II award received or have received a number of patents resulting from the SBIR work equal to or greater than 15% of the number of Phase II awards received during the period.

Consequence of failure to meet the benchmarks:

SBA will identify and provide Agencies annually on 1 June the list of companies failing to meet minimum performance requirements. These companies will not be eligible to submit Phase I proposals for one year from that date. This requirement only affects a company's eligibility for new Phase I awards. Companies failing to meet minimum performance requirements may continue work on current, ongoing SBIR/STTR awards. They may also apply for and receive new Phase II awards. Likewise, they are not prohibited from receiving Phase III awards.

To provide advance warning, SBA notifies companies on 1 April if they are failing the benchmarks. If a company believes the information used was not complete or accurate, it may provide feedback through the SBA Company Registry at www.sbir.gov.

In addition, SBA has posted a Guide to SBIR/STTR Program Eligibility to help small businesses understand program eligibility requirements, determine if they will be eligible at award, and accurately complete necessary certifications.

- o Companies' benchmark information is not available to the public.

4. Administrative Proposal Requirements

The DAF is committed to reducing Phase I and II proposal-to-award lead times. To this end, processes and tools have been developed allowing for rapid, streamlined contracting via periodic expedited contracting events.

Such speed dictates stringent administrative practices in the proposal submission process. The DAF reserves the right to disqualify proposals for failing to meet the requirements below.

a. Additional Reporting

In addition to the standard federal and DoD procurement certifications, the SBA SBIR Policy Directive requires the collection of certain information from firms at time of award and during the award life cycle. Each firm must provide this additional information at the time of the Phase I and Phase II award, prior to final payment on the Phase I award, prior to receiving 50% of the total award amount for a Phase II award, and prior to final payment on the Phase II award.

b. Administrative Proposal Matters

i. Prior, Current, or Pending Support of Similar Proposals or Awards

Applicants are permitted, with proper notification, to submit identical proposals or proposals containing a significant amount of essentially equivalent work for consideration under multiple Federal program solicitations. However, it is unlawful to enter into contracts, grants, cooperative agreements, Other Transactions, or other award types, requiring essentially equivalent effort. Questions concerning prior, current, or pending support of similar proposals or awards shall be disclosed to the soliciting agency or agencies as early as possible. Note that companies may submit multiple proposals, and receive multiple awards, to topics under this solicitation, so long as the proposed work is not essentially equivalent in nature.

ii. Proprietary Information

Information constituting a trade secret, commercial or financial information, confidential personal information, or data affecting national security must be clearly marked. It shall be treated in confidence to the extent permitted by law. Awards for selected proposals will incorporate the Work Plan, in whole or part, by reference or as an attachment. Therefore, the Work Plan shall be Non-Proprietary and marked accordingly. Proprietary and/or classified information shall not be included in the Proposal Cover Sheet.

iii. Majority Ownership by VCOC, Hedge Fund, or Private Equity Funds

Small businesses owned in majority part by multiple venture capital operating companies (VCOCs), hedge funds, or private equity funds are eligible to submit proposals under this CSO. See evaluation criteria for additional information

regarding SBCs owned in majority part by multiple VCOCs, hedge funds, or private equity firms.

iv. Conflicts of Interest

Contract awards to firms owned by or employing current or previous Federal Government employees could create conflicts of interest for those employees which may be a violation of Federal law. Applicants should contact the cognizant Ethics Counselor from the employee's Government agency for further guidance if in this situation.

v. Classified Proposals

Classified proposals will not be accepted in response to this CSO. If efforts will require classified work during Phase II performance, the proposing firm must have or obtain a facility clearance.

Additional information on facility and personnel clearance procedures and requirements can be found at the Defense Security Service site, <http://www.dss.mil/index.html>.

vi. Research Involving Human Subjects

All research involving human subjects, to include use of human biological specimens and human data, shall comply with the applicable Federal and state laws and agency policy/guidelines for human subject protection (see Section 3.18).

Institutions to be awarded funding for research involving human subjects must provide documentation of a current Federal Assurance of Compliance with Federal regulations for human subject protection, for example a Department of Health and Human Services, Office for Human Research Protections Federal wide Assurance (<http://www.hhs.gov/ohrp>).

Additional Federal Assurance documentation may also be requested by the AF. All institutions engaged in human subject research, to include subcontractors, must also have a valid Assurance. In addition, personnel involved in human subject research must provide documentation of completing appropriate training for the protection of human subjects. Institutions proposing to conduct human subject research that meets one of the exemption criteria in 32 CFR 219.101 are not required to have a Federal Assurance of Compliance. If selected, institutions must also provide documentation of Institutional Review Board (IRB) approval or a determination from an appropriate official in the institution that the work meets one of the exemption criteria with 32 CFR 219. As part of the IRB review process, evidence of appropriate training for all investigators should accompany the protocol. The protocol, separate from the proposal, must include a detailed description of the research plan, study population, risks and benefits of study participation, recruitment and consent process, data collection and data analysis.

The amount of time required for the IRB to review and approve the protocol will vary depending on such things as the IRB's procedures, the complexity of the research, the level of risk to study participants and the responsiveness of the Investigator. The average IRB approval process can last between one and three months.

Once the IRB has approved the research, the AF will review the protocol and the IRB's determination to ensure that the research will be conducted in compliance with DoD and DoD Component policies. The DoD review process can last between three to six months. Ample time should be allotted to complete both the IRB and DoD approval processes prior to recruiting subjects. **No funding can be used towards human subject research until ALL approvals are granted.**

vii. Research Involving Animal Subjects

All research, development, testing, experimentation, education or training involving the use of animals shall comply with the applicable Federal and agency rules on animal acquisition, transport, care, handling, and use (see Section 3.17).

For submissions containing animal use, proposals should briefly describe plans for their Institutional Animal Care and Use Committee (IACUC) review and approval.

All Recipients must receive their IACUC's approval as well as secondary or headquarters-level approval by a DoD veterinarian who is trained or experienced in laboratory animal medicine and science. **No animal research may be conducted using DoD funding until all the appropriate DoD office(s) grant approval.**

viii. Research Involving Recombinant DNA Molecules

All research involving recombinant DNA molecules shall comply with the applicable Federal and state laws and regulations and any additional agency guidance. Research shall be approved by an Institutional Biosafety Committee.

ix. Use of Unmanned Aircraft Systems (UAS)

All activities involving the operation of Unmanned Aerial Systems shall be conducted IAW Department of Defense Memo entitled "Guidance for the Domestic Use of Unmanned Aircraft Systems in the U.S. National Airspace, dated 18 August 2018 and DOD memo entitled, "Delegation Authority to Approve Exemptions for Using Commercial-Off-The-Shelf Unmanned Aerial Systems in Support of Urgent Needs, dated 16 November 2018. Contractor personnel operating DoD or DoD- contracted UAS in U.S. National Airspace, whether or not the domestic use is related to an intelligence activity, will comply with all laws, regulations, and guidance relating to the operation of UAS in U.S. National Airspace. Specific programs utilizing UAS are required to obtain an exemption for operational use of a UAS; therefore, additional documentation may be requested by the AF to support an exemption request. The DOD exemption approval process can require as long as two months. **No funding can be used for contracted-UAS operations until ALL approvals are granted.**

x. Proposal Status and Feedback

The PI and Corporate Official indicated on the Proposal Cover Sheet will be notified by email regarding proposal selection or non-selection. The small business will receive one notification for each proposal submitted. Please note the referenced proposal number and read each notification carefully. If changes occur to the company mail or email addresses or points of contact after proposal

submission, the information must be provided to the DAF via AF SBIR/STTR One Help Desk.

Feedback requests will be provided to applicants with proposals determined “Not Selected” and “Selectable/Not Funded”. The notification letter will include instructions for submitting a feedback request. Applicants are entitled to no more than one feedback per proposal. NOTE: Feedback is not the same as a FAR Part 15 debriefing.

Acquisitions under this solicitation are awarded via “other competitive procedures.” Therefore, applicants are neither entitled to nor will they be provided FAR Part 15 debriefs.

~~Refer to the DoD SBIR Program BAA for procedures to protest the Announcement.~~

As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after award should be submitted to: AF.SBIR.STTR.Workflow@us.af.mil with a courtesy copy to Air Force SBIR/STTR Contracting Officer Daniel Brewer, Daniel.Brewer.13@us.af.mil.

~~If the preceding information is not included in the request, it will not be fulfilled. Feedback requests received more than 30 calendar days after non-selection notification receipt will be fulfilled at the Contracting Officers' discretion. Unsuccessful applicants are entitled to no more than one feedback response for each proposal. The Contracting Officer may also delay feedback dissemination until all awards resulting from the solicitation are finalized.~~

~~**Release of Proposal Review Information.** After final award decisions have been announced, the peer review/technical evaluation of the applicant's proposal may be provided to the applicant. The identity of the reviewer(s) shall not be disclosed. The same information required for feedback requests shall be required for release of proposal review information. If not included in the request, it will not be fulfilled.~~

The Air Force anticipates all proposal reviews will be complete, selection decisions made, and notification letters sent within approximately 90 calendar days of solicitation close. Please refrain from contacting the AF for proposal status before that time.

xi. CSO, Selection, and Award Protests

Interested parties may have the right to protest this CSO by serving the Contracting Officer, Mr. Daniel Brewer, Daniel.Brewer.13@us.af.mil with the protest, by filing with the Government Accountability Office (GAO), or by filing U.S. Court of Federal Claims. Protest of selections or awards should also be directed to Mr. Brewer filed with GAO, or filed with the U.S. Court of Federal Claims. If the protest is filed with GAO, a copy of the protest shall be received by the DAF Legal Operations Agency within one day of filing. Protests of a selected firm's small business status should be directed to the SBA.

xii. Award Information

1. **Number of Awards.** The number of awards will depend upon funds availability. The Government currently anticipates approximately 104

awards as a result of this solicitation. The Government reserves the right to make no awards under this solicitation. The Federal Government is not responsible for costs incurred before award receipt.

2. **Type of Funding Agreement.** Awards are executed as firm-fixed-price contracts or Other Transactions for Prototype. The Small Business Administration SBIR/STTR Policy Directive states, “Except as expressly excluded or limited by statute, awarding agencies must provide for a reasonable fee or profit on SBIR/STTR Funding Agreements.”

xiii. Questions About This CSO and CSO Topics

1. Air Force One SBIR/STTR Help Desk

The Help Desk is available to address general questions about this CSO and other program-related topics. The Help Desk can be reached at usaf.team@afsbirsttr.us.

2. DSIP Support

Email DSIP Support at DoDSBIRSupport@reisystems.com only for assistance with using the DSIP application. Questions regarding DSIP can be emailed to DSIP Support and will be addressed in the order received, during normal operating hours (Monday through Friday, 9:00 a.m. to 5:00 p.m. ET). Please include information on your firm, a proposal number (if applicable), and screenshots of any pertinent errors or issues encountered.

DSIP Support cannot provide updates to proposal status after submission, such as proposal selection/non-selection status or contract award status. Do not attempt to directly submit proposal documents to the above email address. Such transmissions do not constitute proposal submission and such materials will be discarded.

3. Topic Q&A

Once the Air Force begins accepting proposals on October 25th, 2022, no direct contact between applicants and topic authors is allowed unless the Topic Author is responding to a question submitted during the pre-release period. However, applicants may submit written questions through Topic Q&A at <https://www.dodsbirsttr.mil/submissions/login>. In Topic Q&A, all questions and answers are posted electronically for general viewing. Identifying information for the questioner and respondent is not posted.

Questions submitted through the Topic Q&A are limited to technical information related to improving the understanding of a topic’s requirements. Any other questions, such as those asking for advice or guidance on solution approach, or administrative questions, such as SBIR or STTR program eligibility, technical proposal/cost proposal structure and page count, budget and duration limitations, or proposal due date WILL NOT receive a response. ~~Refer to the Component-specific instructions given at the beginning of that Component's topics for help with an administrative question.~~

Proposing firms may use the Topic Search feature on DSIP to locate a topic of interest. Then, using the form at the bottom of the topic description, enter and submit the question. Answers are generally posted within seven (7) business days of question submission (answers will also be e- mailed directly to the inquirer).

The Topic Q&A for this CSO opens on October 21, 2022 and closes to new questions on November 7th, 2022 at 12:00 PM ET. Once the CSO closes to proposal submission, no communication of any kind with the topic author or through Topic Q&A regarding your submitted proposal is allowed.

4. DAF SBIR/STTR Open Topic Updates and Notices

To receive notifications about AF Ventures and other DAF innovation opportunities, please visit <https://afwerx.com/afventures-overview/>.

xiv. Identifying RDT&E in SBIR/STTR Proposals

Subject to programmatic phase conditions, SBIR/STTR awards are made for research, development, test and evaluation (RDT&E) efforts. The definitions and criteria below govern SBIR/STTR as Research, Development, Test, and Evaluation (RDT&E) programs. These definitions and criteria implement 15 USC 638, the SBA SBIR/STTR Policy Directive (1 Oct 2020), and DoD Financial Management Regulation (FMR), Vol. 2A, Chapter 1, Section 0102, Funding Policies (June 2004, as amended).

Phase II Conditions:

Consistent with 15 U.S.C. 638 and the SBA SBIR/STTR Policy Directive (2020), both Phase I and II awards are aimed at furthering “scientific and technical merit and feasibility” of ideas in the proposals. The object of Phase II is to continue the R&D effort from the completed Phase I (or from prior non- SBIR/STTR research in case of Direct to Phase II award aka a “Phase I-like effort”). Phase II also includes a Special Phase II Testing and Evaluation authority.

Scientific and Technical Feasibility Determination IAW 15 USC 638(cc):

Direct to Phase II awards are conditioned upon the awarding agency’s determination the applicant’s idea has sufficient scientific and technical feasibility and merit despite the lack of Phase I award.

xv. Treatment of Commercial Off-the-Shelf (COTS) and Non-Developmental Items (NDIs)

COTS/NDIs: Items purchased directly from a commercial source that can be utilized without alteration through design and development, or without modification, are classified as COTS or NDI. This includes, for example, ready-to-use products, training services, and software licenses for ready-to-use software to satisfy service needs (including Software as a Service (SaaS)).

Purchases of COTS and NDIs for use, including the first article and associated first article acceptance testing and related minor adjustments are not suitable for SBIR/STTR funding. The acquisition of commercial

items or NDIs for testing and operational evaluation that do not require RDT&E engineering, design or integration effort will not be funded by SBIR/STTR funds. However, if an end item requires design and development in order to accept the COTS or NDI, funding for design and development effort could be funded by SBIR/STTR funds. If a COTS or NDI is required for RDT&E test purposes, the cost could be funded by SBIR/STTR funds.

Modified COTS/Modified NDIs: Commercially available items that must be modified to satisfy user requirements are classified as "modified COTS" or "modified NDI" articles. In this instance, the first article, modification of the first article, and first article testing could be funded by SBIR/STTR funds. Follow-on purchases will not be funded by SBIR/STTR funds. The number of "modified" first articles bought with SBIR/STTR funds will not exceed the quantity needed to conduct the RDT&E acceptance tests. Modification is technology refreshment significantly changing the end item's performance envelope. If the commercially available item is modified and requires testing prior to approval for service use or inventory, it may be funded by SBIR/STTR funds, as all developmental items. In contrast to modification, continuous technology refreshment is the intentional insertion of newer technology to improve reliability, improve maintainability, reduce cost, and/or add minor performance enhancement, typically in conjunction with depot or field level maintenance. The insertion of such technology into end items as part of maintenance is not funded by SBIR/STTR funds.

xvi. Technical Baseline

As RDT&E programs, SBIR/STTR efforts are subject to scientific and technical literature searches in order to establish technical baseline, avoid duplication, and justify funding IAW AFI 61-201, Management of Scientific and Technical Information (STINFO) (29 January 2019) and AFRL/CA guidance, Streamlined and Waivered SBIR/STTR Specified Requirements (05 Aug 2019).

~~xvii. Non-RDT&E Effort~~

~~The majority of the Phase II effort must be RDT&E, but some percentage can be for non-RDT&E work, provided that the correct appropriation category is used for the corresponding deliverables, both the providing and receiving comptroller agree with the use of funds for those deliverables, and the Contract Officer determines that the overall effort remains RDT&E in nature.~~

~~xviii. Special Circumstances~~

~~Applicants wishing to assert special circumstances or criteria meriting SBIR/STTR funds expenditure other than those provided above must address them in the proposal and provide appropriate statutory or regulatory justification. This information can be included in Volume 5, Supporting Documents, of the proposal.~~

xix. Promotional Material

Promotional and non-project related proposal content is discouraged. Additional information provided via website or other communication medium, except where explicitly requested, will not be considered.

xx. Fraud and False Statements

Knowingly and willfully making false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 USC Sec 1001), punishable by a fine of up to \$10,000, imprisonment up to five years, or both.

The DoD Office of Inspector General (IG) Hotline is an important avenue for reporting fraud, waste, abuse, and mismanagement within the DoD. The DoD IG operates this hotline to receive and investigate complaints or information from contractor employees, DoD civilians, military service members, and public citizens. Individuals who wish to report fraud, waste or abuse may contact the Hotline at (800) 424-9098 between 8:00 a.m. and 5:00 p.m. Eastern Time or visit <http://www.dodig.mil/Components/Administrative-Investigations/DoD-Hotline/Hotline-Complaint/>. Written correspondence should be addressed to the Defense Hotline, The Pentagon, Washington DC, 20301-1900. Email reporting is available at hotline@dodig.mil.

xxi. State and Other Assistance Available

Many states have established programs to provide services to small business firms wishing to participate in the Federal SBIR Program. These services vary from state to state, but may include:

- o Information and technical assistance;
- o Matching funds to SBIR award recipients;
- o Assistance in obtaining Phase III funding.

Contact the state SBIR/STTR Support office at https://www.sbir.gov/state_services?state=105813# for further information.

xxii. Use of Support Contractors for the AF SBIR Program

Proposals may be handled for administrative purposes only by support contractors, including APEX, Oasis Systems, Riverside Research, Peerless Technologies, HPC- COM, Mile Two, Wright Brothers Institute, Parallax, TEC Solutions, Inc. and MacB (an Alion Company). In addition, only Government employees and technical personnel from Federally Funded Research and Development Centers (FFRDCs) MITRE and Aerospace Corporations working under contract to provide technical support to AF Life Cycle Management Center and Space and Missiles Centers may evaluate proposals. All support contractors are bound by appropriate non-disclosure agreements. Contact the DAF SBIR/STTR Contracting Officer (Daniel.Brewer.13@us.af.mil) with concerns regarding the listed contractors.

xxiii. Innovation in Manufacturing

Pursuant to EO 13329, high priority is accorded to proposals advancing innovation in U.S. small business manufacturing.

xxiv. Renewable Energy

The Energy Independence and Security Act of 2007 (Act), 19 December 2007, P.L. 110-140, requires SBIR/STTR agencies to give high priority to energy efficiency or renewable energy system R&D projects. The Act encourages eligible US-owned SBCs accomplishing biomedical research in the areas of energy efficiency or renewable energy systems to submit proposals.

xxv. Requirement for Standard Form 424 (SF424), Research and Related Senior/Key Person Profile (Expanded) Form

If selected for award, applicants shall submit a completed Standard Form (SF 424), Research and Related Senior/Key Person Profile (Expanded) Form for all Senior/Key Personnel proposed in support of the requirement. Additionally, the applicant shall submit a completed Security Program Questionnaire found at Attachment 7. Applicants may also be asked to provide a mitigation plan for any identified S&T Protection risks. The Government reserves the right not to award if the submitted SF 424 and Security Program Questionnaire are not acceptable to the Government.

5. Direct-to-Phase-II Proposal

a. Introduction

15 U.S.C. §638(cc), as amended by NDAA FY12, Sec. 5106, and further amended by NDAA FY19, Sec. 854, PILOT TO ALLOW PHASE FLEXIBILITY, allows the AF to make SBIR Phase II awards to Small Business Concerns without regard to whether the Small Business Concerns were provided awards under Phase I of the program for the same proposed project. The Department of the Air Force is implementing D2P2 CSO opportunities under this authority. This does not guarantee future D2P2 opportunities will be offered. Proposals under this CSO must include documentation to determine Phase I feasibility has been met.

Awards will provide funds to conduct further RDT&E for non-Defense commercial solutions to meet specific DAF end-users' and customers' needs. These Phase II awards are intended to provide a commercialization path, and are not the proposed solutions' final step. Second phase commitments from non-SBIR Federal and non-Federal sources are not mandatory. Cost-share is also not required. However, second phase commitments serve as commercial potential evidence in accordance with 15 USC 638(e)(4)(B)(ii).

Applicants must adequately document completion of the Phase I feasibility requirement*. Applicants must demonstrate completion of R/R&D through means not solely based on previous efforts under the SBIR/STTR Programs to establish Phase II proposal feasibility based on criteria provided in the D2P2 topic descriptions. Phase II proposals require a comprehensive, detailed effort description. Proposals should demonstrate sufficient technical progress or problem-solving results to warrant more extensive RDT&E. Developing technologies with commercial and military potential is extremely important. Particularly, DAF is seeking proposals emphasizing technologies' dual-use applications and commercialization.

***NOTE:** The applicant shall provide information to enable the agency to make the 15 U.S.C. 638(cc) determination of scientific and technical feasibility and merit. Applicants are required to provide information demonstrating scientific and technical merit and feasibility has been established as part of the Technical Volume described in Section 9.4.2. The DAF will not review the Phase II proposals if it is determined the applicant 1) fails to demonstrate technical merit and feasibility are established or 2) the feasibility documentation does not support substantial performance by the applicant and/or the PI. Refer to the description within the topic to review the minimum requirements needed to demonstrate scientific and technical feasibility. **Feasibility documentation MUST NOT**

be solely based on work performed under prior or ongoing Federally-funded SBIR or STTR work.

b. Proposal Volume Contents

- i. Registration
 - o DUNS Number
 - o Commercial or Government Entity (CAGE) Code
 - o SBA Small Business Concern (SBC) Control ID
- ii. Volume 1: Proposal Cover Sheet
 - o CAGE, EID
 - o Certification Questions
 - o Business Information
 - o Proposal Information
 - o Contact Information
- iii. Volume 2: Technical Volume
 - o 15-Page White Paper
- iv. Volume 3: Cost Volume
 - o Direct Labor Costs
 - o Direct Material Costs
 - o Other Direct Costs
 - o Second Phase Commitment and/or Cost Share
- v. Volume 4: Company Commercialization Report
- vi. Volume 5: Supporting Documents
 - o Signed Customer Memorandum (if required)
 - o ~~Regulatory Activities Attachment~~
 - o Coversheet Supplement
 - o Supplemental Cost Information
 - o Resumes of Key Personnel
 - o *Non-Proprietary* Work Plan
 - o DoD Funding Agreement Certification (Signed)
 - o DD Form 2345, Militarily Critical Technical Data Agreement (if applicable)
 - o Allocation of Rights (optional)
 - o Lifecycle Certification (required prior to award, if selected)
 - o SBIR/STTR Environment, Safety and Occupational Health (ESOH)
 - o Phase II Funding Commitment Documentation
 - Private Investment Letter (if applicable)
 - o Additional Letters of Support (if applicable)
 - o Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)
 - o Foreign Ownership or Control Disclosure Volume 6: Fraud, Waste, and Abuse Training
- vii. **Volume 6: Fraud, Waste, and Abuse Training**

c. Marking Proprietary Information

Applicants including data in proposals not to be disclosed to the public, or used by the Government except for evaluation purposes, shall:

Mark the first page of each Volume of the proposal submission with the following legend: "This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this applicant as a result of-or in connection with-the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in pages [insert numbers or other identification of sheets]"; and

Mark each sheet of data it wishes to restrict with the following legend: "Use or disclosure of data contained on this page is subject to the restriction on the first page of this volume."

The DoD assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose. Restrictive notices notwithstanding, proposals and final reports submitted through DSIP may be handled, for administrative purposes only, by support contractors. All support contractors are bound by appropriate non-disclosure agreements.

d. Governmental and Private Funding Commitments

Applicants wishing to include Phase II funding commitments, Government or private, in their proposals must submit the information via a completed mandatory Phase II Funding Commitment form, as described in this section.

For Governmental second phase commitments that are to be applied directly to the contract, DRAFT funding documents (Form 9s/MIPRs) are due within 45 days of the solicitation closing. Once selection letters are sent, CERTIFIED funding documents are due five business days later. If certified funding documents are not provided [by the solicitation close date +45 days], the effort will move forward without the second phase funding commitment considered. To initiate governmental funding transfer, the interested government organization should send an email to the AFRL/RGF Incoming Documents mailbox, AFRL.SBIR.STTR@us.af.mil. The sender will receive an auto-response with guidance regarding incoming funds submission and associated information required. RGF requests a draft MIPR/Form 9 be submitted to the same inbox before certification to ensure the document is complete and accurate.

NOTE 1: If sending funding via MIPR, RGF requires a signed MOA with the submitting Government organization.

NOTE 2: If providing other than RDT&E 3600 funds, the corresponding proposal milestones must clearly delineate deliverables for which the non-RDT&E funds will be used. Additionally, the submitting and receiving Comptrollers must agree to the funds propriety for the specified deliverables.

*The government organization must initiate communication with AFRL/RGF, not the small business.

e. Proposal Cover Sheet (Volume 1)

Prepare the Proposal Cover Sheet in DSIP. Do not include proprietary or classified information in the Proposal Cover Sheet. Once the cover sheet is saved, the system will

assign a proposal number. The cover sheet may be modified as often as necessary until the CSO closes.

Technical Abstract: The technical abstract should include a brief program objective/effort description. Technical abstracts are submitted to the Office of the Secretary of Defense (OSD) for public release. Therefore, they shall not contain proprietary or classified information. The term “Component” on the Cover Sheet refers to the soliciting AF organization, AFWERX or AFRL.

Anticipated Benefits/Potential Commercial Applications of R/R&D: The first line of the ‘Anticipated Benefits’ section should follow this format: We solved [DAF problem] by providing [advantage], to help [DAF end-user organization] accomplish [DAF end-user’s] goal. We will recognize profit by charging [non-Defense commercial customer organizations] to get [non-Defense commercial benefit]. Be very explicit regarding the proposed DAF end user and customer, if different, which is likely, and potential non-SBIR funding sources after successful Phase II completion. This list should also include non-proprietary, non-Defense commercial customers. Do not include specific DAF names or non-Defense customers, as this section will be publicly released.

List of maximum 8 Key Words or Phrases, separated by commas, describing the project: This section will be used to categorize the application. These keywords may also be used to identify Phase III transition partners within the Government. Therefore, consider more than technical key words. A potentially useful analogy is Search Engine Optimization (SEO) Keywords.

f. Technical Volume (Volume 2)

i. Format

Type of File: The Technical Volume must be a single Portable Document Format (.pdf) file, including graphics. Perform a virus check before uploading the Technical Volume file. If a virus is detected, it may cause rejection of the proposal. Do not lock or encrypt the uploaded file.

Do not include or embed active graphics such as videos, moving pictures, or other similar media in the document.

Length Limitation: The White Paper is limited to 15 pages; any pages in excess of the 15 will not be reviewed.

Layout: Number all pages consecutively. Each page should contain the company name, topic number, and proposal number assigned by DSIP when the Cover Sheet was created. Use no smaller than 10-point font.

ii. Content

The white paper should cover the following items in the order given below:

1. Table of Contents

Include a table of contents immediately following the Proposal Cover Sheet. Does not count against the 15 page limit.

2. Glossary

Include a glossary of acronyms and abbreviations used in the proposal. Does not count against the 15 page limit.

3. Technical Summary

a. Identification and Significance of the Problem or Opportunity

Briefly describe the specific problem/opportunity addressed in the feasibility study and its relationship to the Direct-to-Phase II.

b. Air Force Technology ~~Focus Areas~~ Strategic Capabilities

Air Superiority; Intelligence, Surveillance, and Reconnaissance; Rapid Global Strike; Global Strike; Command and Control; Responsibilities to organize, train, and equip the force; Air Force Blue Sky.

AND/OR

c. Space Force Technology ~~Focus Areas~~ Strategic Capabilities

Space Superiority; Combat Power Projection; Space Mobility and Logistics; Information Mobility; Space Domain Awareness; Responsibilities to organize, train, and equip the force; Space Force Blue Sky.

d. Non-Defense Commercial Solution

Describe the non-Defense commercial solution, including its use by non-Defense commercial customers. Describe its technical specifications as well as the qualitative and quantitative value it brings to the solution's users. Relevant supporting data such as journal articles, literature, Government publications, etc., should be contained or referenced in the proposal and will count toward the page limit. Additionally, answer the following questions:

Is the proposed item "of a type", i.e., similar to a commercial item, customarily used by the public or by non-Governmental entities for non- Governmental purposes?

Has the proposed item been (i) sold, leased, or licensed to the public; OR (ii) offered for sale, lease, or license to the public?

Include, where applicable pre-sales, pilots, sales, revenue, active users, subscriptions, downloads, and/or other forms of traction/adoption. Broad adoption and commercial success can be indicators of commercial potential and reduced technical risk, but are not mandated. This is an RDT&E solicitation, not a Commercial-Off-the-Shelf resale solicitation. See FAR 2.101 for a full definition of commercial items.

e. Proposed Adaptation of Non-Defense Commercial Solution

Describe the proposed R/R&D adaptation of or the T&E (strictly for use in technical or weapons systems) to be performed on the non-Defense commercial solution to meet a US Government end-user need. In this section, answer the following questions:

- i. How similar is the modified item to others sold in the commercial marketplace to non-US Government customers?

- ii. Does the supplier perform similar modifications for non-US Government customers?
- iii. Do DAF unique modifications change the product's essential use and purpose?
- iv. Are there differences in the production/manufacturing/delivery processes used to perform the modification for the Federal Government versus non-Government customers?
- v. What are the quantitative benefits expected for identified DAF end-users?
- vi. When adapting the commercial solution, what is the intended Commercial- Off-the-Shelf (COTs) or commercial product/process modification? Explain.
- vii. If applicable, what Test & Evaluation will be performed on the solution, and what Technical or Weapons System will the solution be integrated into? What is the desired outcome of that T&E?

f. Phase I-Type “Feasibility Study” Results

The proposal shall detail the solution's ability to meet DAF end-users' and customers' needs. These results shall be framed in the context of DAF End-User and Customer Exploration previously performed for the effort.

- Scientific or Technical R/R&D effort, including research questions, methods, results, and relevant literature.
- DAF End-User and Customer Exploration Methods: Describe methods, both successful and unsuccessful, used to perform technical and scientific feasibility analysis, as well as DAF Customer and End-User Exploration, for adapting the non-Defense commercial solution to a specific DAF end-user's needs. This should include detailed reports of at least one in-depth interview with an DAF End-User and one in-depth interview with an DAF Customer.
- Empowered and Committed DAF End-Users: List and describe specific DAF end- users, e.g., operators willing to support further R&D, testing, evaluation, or trial for the proposed Phase II solution. Specifically explain how the proposed solution meets the end-user(s) needs. Describe in as much detail as possible the firm's understanding of the AF end-user's problem or benefit area.
- Empowered and Committed DAF Customers: List and describe the specific DAF customer, e.g., a Program Manager at a System Program Office willing to assist with transitioning the proposed Phase II solution into a Phase III.
- Joint organizations may be the End-User or Customer, but the Customer Memorandum must

clearly articulate how the Joint End-User/Customer represents a validated Department of the Air Force need. In these cases, the Primary TPOC must be from the Department of the Air Force.

- Empowered and Committed US Non-DAF Government End-Users: Commitments from US non-DAF Government end-users will also be considered. However, there MUST be at least one DAF/Joint end-user and customer as described above.
- NOTE: Inclusion of a Customer Memorandum in the prescribed format is mandatory for proposals submitted against **Topic AF234-ODCSO20 AFX234-DCSO2**. The Customer Memorandum formally captures interest from the empowered and committed DAF end-users and customers described above. Proposals without a signed Customer Memorandum or proposals that do not follow the mandatory template will not be considered. Customer Memoranda must be uploaded to the 'Letters of Support' Section in Volume 5, Supporting Documents.

g. Compliance and Regulatory Activities

- i. Will there be flight testing? (indicate indoor/outdoor and manned/unmanned)
- ii. If yes to flight testing please provide (if known) the test facility range name and/or location of where the flight test will be conducted.
- iii. Will any hardware or software be delivered to the Government as part of the contract? Note, the contractor must submit a preliminary hazard list (per Mils Std-882e requirements) with the delivered item.
- iv. Will any Government personnel, facilities, or Government-owned equipment be used during testing? Note: the contractor must complete a Government safety review and provide the documentation to AFWERX via email (send to: p2@afwerx.af.mil) before the GFE is used in testing. After AFWERX receives the safety documentation, a safety review process will be initiated (for project planning purposes the review will take approximately 4 weeks to complete).
- v. Will there be any weapons or munitions testing?
- vi. Does this activity use explosives, propellants, deflagrating materials, or ammunition?
- vii. Does this activity use a direct energy device (including lasers) or radio frequency radiation?
- viii. Does this activity involve hazardous materials?
- ix. Will there be any animal testing?
- x. Does any testing meet the definition of human subject research per 32 CFR 219?

- xi. Will testing include use of toxins, human-derived material, or recombinant DNA?
- xii. Does this project involve interaction or intervention with humans?
- xiii. Does this project involve the access to, collection, use analysis, or sharing of human data or human biological specimens?

h. Phase II Technical Objectives and Key Results

Clearly describe three to five objectives of the Phase II RDT&E effort. These objectives should be tied to specific proposed Phase II trial tasks. These objectives shall be qualitative and specific to the participating DAF end-user(s). The objectives shall be tied to specific time periods, tangible and unambiguous regarding anticipated results. These objectives shall describe end-state outcomes (i.e. what will be done), rather than processes or activities (i.e., how it will be done). Each objective shall be accompanied by three to five specific 'key results', measurable throughout Phase II performance. These key results will likely be quantitative in nature, e.g., deliver X widgets to DAF end- user. Non-quantitative key results shall be clearly measurable.

Required Stakeholders Needed to Accomplish Phase II:

List anticipated interactions with stakeholders necessary to accomplish the Phase II trial. Such stakeholders may include lawyers, test range officials, information assurance officials, system program office engineers, etc. Clearly describe Phase II trial completion requirements not within the applicant's immediate control and plans to work within those constraints.

i. Phase II Work Plan (Non-Proprietary)

Proposals including private investment cost match should include the tasks to be supported with those funds in the Work Plan. Tasks to be executed with private investment should be discernable from SBIR-funded tasks. If awarded, the SBIR-funded and private investment-funded tasks are included in different parts of the award document. The Work Plan should be structured around the effort's purpose and requirements set forth in clear, specific, and objective terms with measurable outcomes. The work plan has two mandatory features; (1) Work stated in terms of outcomes or results, rather than performance methods, and (2) measurable performance standards, including assessment methods for these standards. The plan should include the location and mechanics for accomplishing the proposed approach. Phase II projects shall attempt to demonstrate the Phase I-like effort's technical feasibility, including transition results to the private sector or Government customer. The DAF uses the work plan outline as the initial draft of the Direct to Phase II Statement of Work (SOW). Therefore, **do not include proprietary information in the work plan outline.**

i. Scope

List the effort's major requirements and specifications.

ii. Task Outline

Provide an outline of work to be accomplished throughout the effort. For proposals with government funding commitments (where the funds will be sent to AFRL/RGF to be included in the Phase II effort), clearly identify the tasks that will be funded by the SBIR program and the tasks that will be funded by the government organization that is committing funds.

iii. Milestone Schedule

Include the mutually agreed upon milestone schedule from your signed Customer Memorandum (if applicable). Each milestone marks the completion of a required deliverable (e.g., prototype component, test plan, prototype production, final report submission, etc.). Status reports cannot be milestones but are deliverables as described below. Describe how the milestones will be identified as completed. Milestone payments shall reflect justifiable costs to achieve completion. Supporting rationale, e.g., invoices from non-Defense commercial customers, will be included in Volume 5, Supporting Documents. NOTE: Pricing information from non-Defense commercial customers is likely proprietary and should be marked as such.

iv. Deliverables

Include a section clearly describing the specific sample/prototype hardware/software to be delivered, as well as data deliverables, schedules, and quantities.

v. Unique Item Identification

IAW DFARS 252.211- 7003, Item Identification and Valuation, may be required. For hardware, more information may be found at <https://www.acq.osd.mil/dpap/dars/dfars/html/current/25221.htm#252.211-7003>.

vi. Required Reports

At a minimum, the following reports are required for ALL Phase II awards and must be included in the Work Plan. All are considered scientific and technical reports.

1. Final Report

The draft is due 30 calendar days after completion of the Phase II technical effort. The first page of the final report will include a single-page project summary, identifying the purpose of the work, providing a brief description of the effort accomplished, and listing potential results applications. The summary may be published by DoD. Therefore, it shall not contain proprietary information. It shall also contain project objectives met, work completed, results obtained, and technical feasibility estimates.

2. Status Reports

Status reports are due quarterly, at a minimum. These shall be concise documents describing progress in meeting the selected DAF end-user's needs. Each status report shall be no longer than 15 slides. The status reports shall include progress toward Phase II objectives and key results, as well as a quantitative measure between zero (0) and one (1) of progress toward each.

3. Phase II Summary Report

The Phase II summary report is due at technical effort completion. It shall be submitted via email to the cognizant AF CO/AO. Reports shall not exceed 700 words, including a description of the technology and anticipated applications/benefits for Government and/or private sector use.

4. Safety-Related Deliverables

Safety requirements shall be followed in the proposed project's design and performance. The Work Plan must contain separate sections specifically addressing the following:

5. Preliminary Hazard Analysis (Report, if applicable): If hardware is to be developed, the contract shall include at least a preliminary hazard analysis included in the deliverables.
6. Hazardous Material Report: If use of hazardous material is anticipated, the following are required:
 - Materials identification; Materials purpose; and possible alternative/procedures/safeguards to minimize risk.

vii. Additional Reporting

The DAF end-user or customer may require additional reporting or documentation including:
Software documentation and user manuals;
Engineering drawings;
Operation and Maintenance documentation;
Safety hazard analysis when the project will result in partial or total development/ delivery of hardware; and updated commercialization results.

viii. Additional Reporting Requirement for Efforts with Private Funding Commitments

The final Phase II status report must include a brief accounting, in company format, regarding investor funds' expenditures to support the project.

j. Commercialization Strategy

i. Commercialization Plan

The SBA and DoD require Phase II proposals include a commercialization plan. The plan should briefly describe the commercialization potential for the proposed project's anticipated results, as well as plans for exploitation in both the Defense and non-Defense markets. The plan must include the following:

1. Company Information

Focused objectives/core competencies; specialization area(s); products with significant sales; and history of previous Federal and non-Federal funding, regulatory experience, and subsequent commercialization.

2. Customer and Competition

Clear description of key technology objectives, current competition, and advantages compared to competing products or services; description of hurdles to innovation acceptance.

3. Market

Milestones, target dates, market size analysis, and estimated market share after first year and fifth year sales; plan to obtain market share.

4. Intellectual Property

Patent status, technology lead, trade secrets, or other demonstration of a plan to achieve sufficient protection to realize the commercialization stage and attain at least a temporal competitive advantage.

5. Financing

Plans for securing further necessary funding.

6. Assistance and Mentoring

Plans for securing needed technical or business assistance through mentoring, partnering, or through arrangements with State assistance programs, Small Business Development Centers, FFRDCs, Manufacturing Extension Partnership centers, the DAF Mentor-Protégé Program, or other assistance providers.

Specifically address the following questions:

- 1) What is the first product into which the technology will be incorporated?
- 2) Who are the customers and what is the estimated market size? How much money is needed to bring the technology to market? How will the funding be raised?
- 3) Does the company possess marketing expertise? If not, how will it be obtained?
- 4) What companies are the proposing firm's competitors, and what is the firm's price and/or quality advantage over them?

- 5) Are there private sector or non-SBIR/STTR funding sources demonstrating commitment to Phase II results? This includes both outside private investment such as venture capital, angel investors, state or local government programs, etc., and internal funding sources, such as funding from affiliates. Please delineate past and potential future investments, e.g., currently raising a round or have signed term sheets. Also note if commitments are conditional on receiving a Phase II award.
- 6) Has your company received or will it receive any foreign investment? If so, what is the source and the received or anticipated amount?
- 7) Are there Phase III (Government or commercial) follow-on commitments for the proposed technology?
- 8) Are there any other commercial potential indicators? Consider pre-sales, pilots, sales, revenue, active users, subscriptions, downloads, and/or other forms of traction/adoption and commercial signals of interest, demand, and faith in your team/solution.
- 9) What is the last 12 months' total revenue from non-Defense commercial solution sales?
- 10) State the proposed Phase II's anticipated end results, specifically plans to transition to a Phase III with a potential Government customer.

k. Military Applications/DoD Customers

Briefly describe the proposed solution's existing potential military requirement. Identify the DoD agency/organization most likely to become the solution's customer. In many cases the potential DoD customer will be different from the end user. For example, the user may be in an operational flying unit and the customer in a System Program Office for the related aircraft. State whether a DoD agency has expressed interest in, or commitment to, a non-SBIR, Federally-funded Phase III effort or a Phase II enhancement with matching SBIR funds. If so, please include relevant details regarding funding availability, e.g., fiscal year, for solution transition, and other relevant funding details, such as funding type, e.g., RDT&E, Operations and Maintenance, etc. Include agency points of contact names, email addresses, and telephone numbers.

l. Non-US Citizens

Identify all non-U.S. citizens and dual citizens proposed as direct employees, subcontractors, or consultants. For these individuals, in addition to technical resumes, please provide countries of origin, type of visas or work permits held, and explanation of their anticipated involvement level in the project, i.e., tasks to be assigned. When the topic area is subject to export control, these individuals, if permitted to participate, are limited to work in the

public domain. Further, tasks assigned must not be capable of assimilation into an understanding of the project's overall objectives. This precludes foreign citizens from acting in key positions such as Principal Investigator, Senior Engineer, etc. Additional information may be requested during negotiations to verify foreign citizens' eligibility.

m. Key Personnel

Identify key personnel involved in the project, including subcontractors and consultants. The applicant shall address qualifications for conducting RDT&E in addition to qualifications for commercialization. Include information regarding education, experience, and citizenship. A technical resume for the PI, including publications, if any, shall be included.

n. Non-Defense Commercial Customers

Past revenue from commercial customers of the proposed non-Defense commercial solution. Clearly list non-Defense commercial customers, including revenue received as a result of the proposed solution's sales. Do not include other solutions the company may offer.

Potential revenue-generating projects directly related to the proposed non-Defense commercial solution or adaptation thereof. Separately list potential revenue-generating projects with Defense or non-Defense customers directly related to the proposed solution(s). NOTE: On-going or completed projects/sales, such as those in section 2.5.1, are strongly preferred to potential projects.

o. Investors and Partners

Identify company investors, shareholders, or strategic advisors making significant contributions to support the Phase II effort. Explain how their past experiences or track record will support the technical or commercialization efforts. This could include leveraging other entities in company investors' portfolios or accessing other capital sources.

p. Related Work

Describe significant activities directly related to the proposed effort, including previous programs conducted by the Principal Investigator, proposing firm, consultants, or others, and their application to the proposed project. List reviewers providing comments regarding the applicant's knowledge of the state-of-the-art in the specific approach proposed. Specify related Government efforts, SBIR or otherwise, awarded, previously proposed, or intended for proposal.

g. Cost Volume (Volume 3)

Complete the Cost Volume as shown in the Cost Breakdown Guidance. This is accomplished by using the online cost volume form in DSIP. Some items may not apply to the proposed project. If not, do not provide information for those items. Enough information shall be provided for DAF to understand the company's plan to utilize the requested funds, i.e., the purpose, necessity, and reasonableness of each expenditure.

Proposals submitted that exceed the maximum specified SBIR funding amount will not be considered for award.

Fixed price payments shall be tied to measurable milestones, as agreed to with the Government. For Phase II efforts including Government second phase funding commitments wherein RGK receives non-SBIR, Governmental funding for a Phase II effort, the cost proposal should clearly identify SBIR- funded tasks and non-SBIR-funded tasks. Government second phase funding commitments awarded as Phase IIIs and private investment should not be included in the Cost Volume.

For direct costs, include substantiating information such as vendor quotes, previous orders, historical data, etc. Costs without substantiating justification should be detailed through the cost estimating process. All substantiating evidence should be included in the 'Additional Cost Information' section of the Volume 5, Supporting Documents. If selected for award, the Government may require further documentation to substantiate costs.

Provide sufficient detail, as found in 1-4 below, regarding funds' use if the contract is awarded. The itemized listing may be placed in the "Explanatory Material" section of the on-line Cost Volume (if there is enough room) or submitted in Volume 5, Supporting Documents, under the "Other" dropdown option. Note: Only one file can be uploaded to DSIP.

Information in the online Cost Volume form includes but is not limited to:

1. Direct Labor Costs: Identify key personnel by name, if possible, or by labor category if specific names are not available. The number of hours, labor overhead and/or fringe benefits, and actual hourly rates for each individual are required.
2. Direct Material Costs: Provide an itemized list including types, quantities, price, and, when appropriate purpose, for materials, parts, and supplies. If proposing direct material, justification information, including vendor quotes, historical costs, etc., can be included as "Supplemental Cost Information" in Volume 5, Other Supporting Documents.
3. Other Direct Costs: This category of costs includes specialized services such as machining or milling, special testing or analysis, and/or cost incurred in obtaining temporary use of specialized equipment. Proposals, which include leased hardware, must provide an adequate lease vs. purchase justification or rationale. If proposing other direct costs, additional information can be included as "Supplemental Cost Information" in Volume 5, Other Supporting Documents.

Travel: Include travel costs in "Other Direct Costs." Travel costs must relate to the needs of the project. Break out travel cost by trip, number of travelers, airfare, per diem, lodging, etc. The number of trips required, as

well as the destination and purpose of each should be included. Recommend budgeting at least one (1) trip to the Air Force location managing the contract. Greater travel expectations will be required as noted in some topic statements and corresponding SBIR/STTR Interactive Topic Information System (SITIS) Q&A. Estimation of travel costs need not be an overly onerous exercise, and actual travel cost may differ from your proposed travel. This information allows the Government CO to ensure travel costs are not excessive.

Subcontracts: Include subcontractor/consultant costs in “Other Direct Costs.” Involvement of university or other consultants in the planning and/or research stages of the project may be appropriate. If so, describe in detail and include information in the Cost Volume. The proposed total of all consultant fees, facility leases or usage fees, and other subcontract or purchase agreements may not exceed one-third of the total contract price or cost, unless otherwise approved in writing by the Contracting Officer. Support subcontract costs with copies of the subcontract agreements. The supporting agreement documents must adequately describe the work to be performed. At a minimum, an applicant must include a Statement of Work (SOW) with a corresponding detailed Cost Volume for each planned subcontract.

Consultants: Provide a separate agreement letter for each consultant. The letter should briefly state what service or assistance will be provided, the number of hours required and hourly rate

Special Tooling/Test Equipment/Material: The inclusion of equipment and materials will be carefully reviewed relative to need and appropriateness of the work proposed. The purchase of special tooling and test equipment must, in the opinion of the CO, be advantageous to the Government and relate directly to the specific effort. Such items may include such items as innovative instrumentation and/or automatic test equipment. Title to property furnished or funded by the Government will be vested with the AF, unless determined that title transfer to the contractor is more cost effective than equipment recovery by the Government.

ROUND ALL COSTS TO THE NEAREST DOLLAR!

NOTE: If no exceptions are taken to an applicant’s proposal, the Government **may** award a contract with only clarifications. Therefore, the initial proposal should contain an applicant’s best terms from a cost/ price and technical standpoint. For questions regarding the award document, contact the AF SBIR/STTR CO, Daniel Brewer, Daniel.Brewer.13@us.af.mil.

h. Company Commercialization Report (Volume 4)

The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. SBIR and STTR awardees are required by SBA to update and maintain their organization’s CCR on SBIR.gov. Commercialization information is required upon completion of the last deliverable under

the funding agreement. Thereafter, SBIR and STTR awardees are requested to voluntarily update the information in the database annually for a minimum period of five years.

If the proposing firm has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, regardless of whether the project has any commercialization to date, a PDF of the CCR must be downloaded from SBIR.gov and uploaded to the Firm Forms section of DSIP by the Firm Admin. Firm Forms are completed by the DSIP Firm Admin and are applied across all proposals the firm submits. The DSIP CCR requirement is fulfilled by completing the following:

1. Log into the firm account at <https://www.sbir.gov/>.
2. Navigate to My Dashboard > My Documents to view or print the information currently contained in the Company Registry Commercialization Report.
3. Create or update the commercialization record, from the company dashboard, by scrolling to the “My Commercialization” section, and clicking the create/update Commercialization tab under “Current Report Version”. Please refer to the “Instructions” and “Guide” documents contained in this section of the Dashboard for more detail on completing and updating the CCR. Ensure the report is certified and submitted.
4. Click the “Company Commercialization Report” PDF under the My Documents section of the dashboard to download a PDF of the CCR.
5. Upload the PDF of the CCR (downloaded from SBIR.gov in the previous step) to the Company Commercialization Report in the Firm Forms section of DSIP. This upload action must be completed by the Firm Admin.

This version of the CCR, uploaded to DSIP from SBIR.gov, is inserted into all proposal submissions as Volume 4.

During proposal submission, the proposer will be prompted with the question: “Do you have a new or revised Company Commercialization Report to upload?”. There are three possible courses of action:

1. If the proposing firm has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, and DOES have a new or revised CCR from SBIR.gov to upload to DSIP, select YES.
 - a. If the user is the Firm Admin, they can upload the PDF of the CCR from SBIR.gov directly on this page. It will also be updated in the Firm Forms and be associated with all new or in-progress proposals submitted by the firm. If the user is not the Firm Admin, they will receive a message that they do not have access and must contact the Firm Admin to complete this action.
 - b. **WARNING:** Uploading a new CCR under the Firm Forms section of DSIP or clicking “Save” or “Submit” in Volume 4 of one proposal submission is considered a change for ALL proposals under any open BAAs or CSOs. If a proposing firm has previously certified and submitted any Phase I or Direct to Phase II proposals under any BAA or CSO that is still open, those proposals will be automatically reopened. Proposing firms will have to recertify and resubmit such proposals. If a proposing firm does not recertify or resubmit such proposals, they will not be considered fully submitted and will not be evaluated.

2. If the proposing firm has NO prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, the upload of the CCR from SBIR.gov is not required and firm will select NO. The CCR section of the proposal will be marked complete.
3. If the proposing firm has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, and DOES NOT have a new or revised CCR from SBIR.gov to upload to DSIP, select NO.
 - a. If a prior CCR was uploaded to the Firm Forms, the proposer will see a file dialog box at the bottom of the page and can view the previously uploaded CCR. This read-only access allows the proposer to confirm that the CCR has been uploaded by the Firm Admin.
 - b. If no file dialog box is present at the bottom of the page that is an indication that there is no previously uploaded CCR in the DSIP Firm Forms. To fulfill the DSIP CCR requirement the Firm Admin must follow steps 1-5 listed above to download a PDF of the CCR from SBIR.gov and upload it to the DSIP Firm Forms to be included with all proposal submissions.

While all proposing firms with prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards must report funding outcomes resulting from these awards through the CCR from SBIR.gov and upload a copy of this report to their Firm Forms in DSIP. **The Air Force will not consider the CCR during proposal evaluations.**

i. Supporting Documents (Volume 5)

This volume issued to submit additional documentation supporting the Technical Volume (Volume 2) and the Cost Volume (Volume 3).

NOTE – when combining .pdf documents, ensure digital signatures are not stripped.

Beginning with the X21.1 SBIR CSO, all applicants are REQUIRED to submit the following documents to Volume 5:

- i. Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)
- ii. Foreign Ownership or Control Disclosure (REQUIRED—~~Refer to section 9.4.1 to determine applicability.~~)

Documents acceptable for inclusion in Volume 5 are:

- iii. Coversheet Supplement: The online coversheet asks many questions, depending on the answers more information may be needed. The list of questions, and additional information required based on responses to those questions, are provided in Appendix B. Failure to provide supplemental information, when required, may result in company ineligibility.
- iv. Supplemental Cost Information: This document is used to provide additional cost information to augment the Cost Volume (Volume 3) provided in the online form. The Supplemental Cost Information detail must be adequate to enable Department of the Air Force personnel to determine the purpose, necessity, and reasonableness of each cost element provided in the Cost Volume. Information in this section should include the following where applicable:
 1. For significant costs, e.g., large number of hours, very high hourly wages, substantial labor overhead/fringe rates, etc., provide justification.

Helpful resources for determining average rates are https://www.bls.gov/oes/current/oes_nat.htm.

2. Direct Material Costs: Provide an itemized list of types, quantities, price, and purpose for proposed materials, parts, and supplies. For the materials, provide the cost basis, e.g., historical information, vendor quotes, catalogs, etc.
3. Travel included in Other Direct Costs: If travel was proposed as an Other Direct Cost, funding requested must be related to the project's needs. Provide the number of trips, travelers per trip, specific locations, and purpose. Also include the sources of estimated costs for flights, lodging, meals, and ground transportation. A useful resource for this section is <https://www.gsa.gov/travel-resources>.
4. Special Tooling/Test Equipment/ Material Costs: While special tooling/test equipment/material costs may be included, they will be carefully reviewed to determine need and appropriateness for the proposed work. Special tooling and test equipment purchases must, in the Government CO's opinion, be advantageous to the Government and directly related to the effort. This can include innovative instrumentation or automatic test equipment. Typically title to property furnished by the Government or acquired with Government funds will be vested with the DoD Component. Only if it is determined title transfer to the contractor would be more cost effective than equipment recovery will it be otherwise dispositioned.
5. Copies of Subcontract Agreements: If the applicant intends to utilize consultants, subcontractors, academia, etc., describe the relationship in detail, including information in the Cost Volume. The proposed total of all consultant fees, facility leases/usage fees, and/or other subcontract or purchase agreements, may not exceed ~~one-third~~ one-half of the total contract price/cost, unless otherwise approved in writing by the Government CO. Provide copies of subcontract agreements. The supporting agreement documents must adequately describe the work to be performed. At a minimum, an applicant must include a Statement of Work (SOW) with a corresponding, detailed Cost Volume for each planned subcontract.
6. Copies of Consultant Agreements: Provide a separate agreement letter for each consultant. The letter should briefly state the tasks to be provided, hours required, and hourly rate. Some firms seek assistance from subcontractors or consultants to determine their solution's feasibility for a specific DoD customer. If working with a customer discovery firm like this, the associated agreement is required to be included in the proposal.
7. Facilities/Equipment: Describe instrumentation and/or physical/digital facilities necessary and available to carry out the proposed effort. Justify equipment to be purchased, including in 'Additional Cost Information,' as necessary. State whether proposed performance locations meet Federal, state, and local government environmental laws and regulations for airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid/bulk waste disposal practices, toxic/hazardous material handling/storage, and others as identified.
8. Indirect Costs: The proposal should identify the specific rates used and allocation bases to which they are applied. Provide proposed rates and

applications per FY throughout the anticipated performance period. Do not propose composite rates.

NOTE: If selected, applicants may be requested to provide additional documentation to the Government to substantiate costs, e.g., explain cost estimates for equipment, materials, and consultants or subcontractors.

9. Resumes of Key Personnel: Full resumes, including a publications list, for the Primary Investigator and other key technical personnel shall be included.
10. Non-Proprietary Work Plan: Provide a complete, non-proprietary work plan, free of proprietary markings. Attach as a stand-alone document, if possible, for inclusion in the contact document, if selected. Failure to provide this document will necessitate a request for revision and may delay contract award.
11. DoD Funding Agreement Certification (Signed): Funding Agreement Certifications must be completed and signed at time of proposal submission and included in Volume 5. This certification can be found at: <https://www.afsbirsttr.af.mil/Program/Phase-I-and-II/> under “Phase I and II Certification – Funding Agreement.”
12. DD Form 2345 - ITAR/EAR Certification: For proposals whose solutions fall under export- controlled regulations (either International Traffic in Arms (ITAR) or Export Administration Regulations (EAR)), a copy of the certified DD Form 2345, Militarily Critical Technical Data Agreement, or evidence of application submission must be included. The form, instructions, and FAQs may be found at the United States/Canada Joint Certification Program website, [http://www.dla.mil/HQ/InformationOperations/Offers/Products/Logistics Applications/JCP/DD 2345Instructions.aspx](http://www.dla.mil/HQ/InformationOperations/Offers/Products/LogisticsApplications/JCP/DD%202345Instructions.aspx). Approval of the DD Form 2345 will be verified if proposal is chosen for award.
13. Allocation of Rights: If subcontracting to a research institution or other organization, the firm may wish to complete an allocation of rights agreement. This is not required for SBIR awards but may be used at the company’s discretion. Example:
<https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/Model%20agreement%20for%20the%20allocation%20of%20rights.pdf>
14. Lifecycle Certification: All SBIR/STTR Phase II awardees must complete a certification document at award (Phase I and II and D2P2), prior to receipt of more than half the total contract award amount (Phase II and D2P2), and before final payment receipt (Phase I and II and D2P2). All questions must be answered and an authorized officer of the company must sign and date prior to submission. The document is found at [https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/SBIR-STTR-Phase- I-II-Life%20Cycle%20Certifications.pdf](https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/SBIR-STTR-Phase-I-II-Life%20Cycle%20Certifications.pdf).

15. SBIR/STTR Environment, Safety and Occupational Health (ESOH) Questionnaire: Include a completed SBIR/STTR Environment, Safety, and Occupational Health (ESOH) Questionnaire in Volume 5, Supporting Documents, “Other” section. Form can be found at https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/SBIR_Ph_II_ESOH_Questionnaire.pdf.
16. Additional Letters of Support: Letters of support demonstrate that the proposed innovation, if developed, would solve a valid market need. More generally, letters of support can validate commercial impact claims made in the proposal. Therefore, letters from potential technology end users (e.g., customers and corporate partners/collaborators) are appropriate, as well as letters from actual or potential investors. All letters should be uploaded in a single .pdf file organized logically. NOTE: When combining .pdf documents, ensure digital signatures are not stripped.
17. Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment

The DoD must comply with Section 889(a)(1)(B) of the National Defense Authorization Act (NDAA) for Fiscal Year 2019, and is working to reduce or eliminate contracts with entities that use any equipment, system, or service that uses covered telecommunications equipment or services (as defined in the attachment) as a substantial or essential component of any system, or as critical technology as part of any system.

All proposals must include the certifications found in Federal Acquisition Regulation clauses 52.204-24, 52-204-25, and 52-204-26, executed by the proposer’s authorized company representative. These Federal Acquisition Regulation clauses may be found attached. These certifications must be signed by the authorized company representative and uploaded as a separate PDF file in Volume 5 for all proposal submissions.

Completion of the required certification clauses requires due diligence for contractors proposed as a part of the submission, including research partners and suppliers. Therefore, applicants are strongly encouraged to review certification requirements early in the proposal development process. Failure to complete and/or submit the required certifications with the proposal may be cause for rejection without evaluation.

18. Foreign Ownership or Control Disclosure
Applicants must review Attachment 2: Foreign Ownership or Control Disclosure to determine applicability. If applicable, an authorized firm representative must complete the Foreign Ownership or Control Disclosure (Attachment 4). The completed and signed disclosure must be uploaded to Volume 5 of the proposal submission.

j. Fraud, Waste, and Abuse Training (Volume 6)

~~The Fraud, Waste and Abuse (FWA) training is required. The training provides information on what represents FWA in the SBIR/STTR Programs, the most common mistakes leading to FWA, and the penalties and ways to prevent FWA. This training~~

~~material must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline.~~

The Fraud, Waste and Abuse (FWA) training is required for Phase I and Direct to Phase II proposals. FWA training provides information on what represents FWA in the SBIR/STTR program, the most common mistakes that lead to FWA, as well as the penalties and ways to prevent FWA in your firm. This training material can be found in the Volume 6 section of the proposal submission module in DSIP and must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline. FWA training must be completed by one DSIP firm user with read/write access (Proposal Owner, Corporate Official or Firm Admin) on behalf of the firm.

k. Direct-to-Phase-II Proposal Instructions

A Phase II proposal should provide sufficient information to persuade the DAF the proposed effort represents an innovative solution worthy of support under the stated criteria.

~~**PROPOSAL CHECKLIST**~~

~~This checklist is for informational purposes only to aid applicants in preparing proposals. Applicants are expected to review and prepare proposals based on the instructions contained in the solicitation.~~

- ~~• Registration~~
- ~~• Unique Entity Identifier~~
- ~~• Commercial and Government Entity (CAGE) Code~~
- ~~• DoD SBIR/STTR ID~~

~~**Volume 1: DoD Proposal Coversheet**~~

- ~~• CAGE, DUNS~~
- ~~• Proposal Abstract~~
- ~~• Proposal Certification~~
- ~~• Contact Information~~

~~**Volume 2: Technical Volume**~~

- ~~• Proposal Coversheet~~
- ~~• Table of Contents~~
- ~~• Glossary~~
- ~~• Technical Summary~~
- ~~• Commercialization Potential~~
- ~~• Proposed Adaptation of Non-Defense Commercial Solution~~
- ~~• Phase I-type “Feasibility Study” Results~~
- ~~• Phase II Technical Objectives and Key Results~~
- ~~• Phase II Work Plan~~
- ~~• Task Outline~~
- ~~• Schedule of Milestones~~
- ~~• Deliverables~~
- ~~• Reports~~
- ~~• Key Personnel~~
- ~~• Key Project Personnel~~
- ~~• Investors and Partners~~

- ~~Non U.S. Citizens~~
- ~~Supply Chain Integrity~~

Volume 3: Cost Volume

- ~~Direct Labor~~
- ~~Overhead~~
- ~~G&A~~
- ~~Subcontractors/Consultants~~
- ~~Other Direct Costs, e.g., materials, equipment, travel~~
- ~~Cost Share or Match~~
- ~~Profit Rate~~

Volume 4: Company Commercialization Report (CCR) Volume 5: Supporting Documents

- ~~Signed Customer Memorandum (required for Topic AF234-ODCSO20, mandatory template at Attachment 1)~~
- ~~Letters of Support~~
- ~~Coversheet Supplement (as needed)~~
- ~~Certification/Eligibility Check (required)~~
- ~~Prior, Current, or Pending Support of Similar Proposals or Awards (required)~~
- ~~Supplemental Cost Information (required)~~
- ~~Key Personnel Resumes (required)~~
- ~~DoD Funding Agreement Certifications (signed) (required)~~
- ~~Lifecycle Certification (Attachment 3) (required)~~
- ~~SBIR/STTR Environment, Safety and Occupational Health (ESOH) (required)~~
- ~~One page ‘Sales Pitch’ Summary (required)~~
- ~~Regulatory Activities Document (required)~~

The following are as required:

- ~~Technical Data Assertions~~
- ~~Foreign Citizen Table~~
- ~~Funds Matching Form (mandatory template at Attachment 2)~~
- ~~Additional Fund Matching Documentation, e.g., private investor letter~~
- ~~DoD SBIR/STTR Programs Disclosure of Applicant’s Ownership or Control by a Foreign Government (form at Attachment 6)~~
- ~~Additional Facilities/Equipment Information~~
- ~~Additional Subcontractor/Consultant Information~~
- ~~Certified Military Critical Technical Data Agreement, DD Form 2345~~

Volume 6: Fraud, Waste, and Abuse Training

i. Common Disqualifiers:

The following are common reasons for which proposals are disqualified. It is not a comprehensive list of potential reasons for disqualification, but is meant to be instructive. Applicants shall read ALL solicitation instructions to ensure compliance.

- System for Award Management is not properly updated at time of submission
- Customer Memorandum missing required number of signatures and/or content (where Customer Memorandum is required).
- Minimum Performance Percentage of Work is not allocated properly

- Work as proposed does not meet the definition of Research and Development required for funding
- Proposal submitted beyond deadline. In the event of technical difficulty contact DSIP Help Desk immediately.
- Proposal submitted exceeds the maximum SBIR funding amount.

The following items are extremely helpful in expediting award timelines; however, are not required at the time of proposal submission.

- Completion of NIST SP-800 171 assessment and submission to SPRS:
Resource: <https://www.projectspectrum.io/#!/blog/blog-post/c9224e16-57ad-41fa-aa4e-8458a52df971>

- Familiarization with definitions and procedures required for research determined to include Human Subject Testing
- Familiarization with definitions and procedures required for research determined to include Flight Testing or UAS
- Coordination and familiarization with data/information required for project completion and potential handling requirements End-User and Customer
Resources: <https://www.dcsa.mil/mc/ctp/cui/> <https://www.dcsa.mil/mc/ctp/tools/>

6. Evaluation Criteria

Proposals will be evaluated on a competitive basis. Proposals will initially be screened to determine responsiveness. Proposals passing this initial screening will be peer reviewed by engineers or scientists to determine the most promising technical and scientific approaches. Each proposal will be judged on its own merits. An offeror may submit, and subsequently receive awards for, multiple D2P2 proposals under a single solicitation provided the successful proposals do not contain essentially equivalent work. The DAF is under no obligation to fund a specific number of Phase II proposals and may elect to award none.

Funding Methodology

Since the Air Force Research Laboratory is one lab supporting two services, DAF has combined both Air Force and Space Force Open Topics in to one open **Topic AF234-ODCSO20 AFX234-DCSO2**, under which both Air Force and Space Force proposals will be accepted. Applicants shall identify whether their proposal is anticipated to meet an Air Force only need, Space Force only need, or both. DAF subject matter experts will make final categorization determinations based upon Air Force and Space Force mission sets and fiscal law. All selections will still be made in accordance with the specified evaluation criteria and the decision to combine topics does not decrease the anticipated number of awards.

EVALUATION CRITERIA

Proposals will be peer reviewed based on the criteria below. Selections will represent best value to the Government considering the following factors which are of equal importance:

1. The potential for Government or private sector commercialization and benefits expected to accrue from commercialization.
 - a. The SBC's record of commercializing SBIR or other research, as indicated by pre-sales, pilots, sales, revenue, active users, subscriptions, downloads, and/or other forms of traction/adoption.

- b. The Existence of Phase II follow-on commitments for the subject research, and funding commitments related to the subject effort, whether from Government sources, as documented in the DAF Customer Memorandum, or private sources, as documented through a letter of commitment, are evidence of commercialization potential.
 - c. A sound transition strategy in the DAF Customer Memorandum is also evidence of commercialization potential.
2. The appropriateness, relevance, and specificity of an identified Defense Need. A complete and compelling Customer Memorandum (required for **Topic AF234-ODCSO20 AFX234-DCSO2** submissions, optional for Orbital Prime submissions) using the mandatory template, signed by an appropriate **DAF TPOC end-user and customer**, indicates the appropriateness, relevance, and specificity of an identified Defense Need. While not required, signed letters of support from other Government personnel may be indicators of the appropriateness, relevance, and specificity of an identified Defense Need. Adequacy of the proposed effort and its relationship to fulfilling the identified Defense Need.
 3. Technical approach. The technical approach, soundness, technical merit, and innovation of the proposed technical approach, as well as its differentiation from current customer alternatives. Includes the proposed Principal Investigators'/Project Managers', supporting staff, and consultants' qualifications to execute the proposed approach.

All evaluation criteria other than cost or price, when combined, are significantly more important than cost or price. Where technical evaluations are essentially equal in merit, cost and/or price will be considered in determining the successful offeror(s).

The Department of the Air Force will accept proposals from Small Business Concerns (SBCs) that are owned in majority by multiple venture capital operating companies, hedge funds, or private equity firms in response to this solicitation. In accordance with 15 U.S.C. 638(dd), the Air Force is prohibited from awarding more than 15% of its SBIR budget to SBCs with the previously-mentioned ownership structures. In addition to the criteria above, once the value of Selected proposals from such SBCs reaches 15% of the Government's SBIR budget, proposals from such SBCs will no longer be considered for award.

Price reasonableness and realism will be considered to the extent appropriate. IAW 15 USC 638(dd)(7), investment by venture capital, private equity firms, or hedge funds shall not be used as an award criterion.

Peer reviewers will base their conclusions only on information contained in the proposals. It cannot be assumed reviewers are acquainted with the firm, key individuals, or referenced experiments.

Other Factors Considered During the Selection Process:

- o National security concerns.
- o Pursuant to EO 13329, high priority is accorded to proposals advancing innovation in U.S. small business manufacturing.
- o The Energy Independence and Security Act of 2007 (Act), 19 December 2007, P.L. 110-140, requires SBIR/STTR agencies to give high priority to energy efficiency or renewable energy system R&D projects. The Act encourages eligible US-owned SBCs accomplishing biomedical research in the areas of energy efficiency or renewable energy systems to submit proposals.

7. Contractual Requirements

a. Other Contractual Requirements

- i. Awardees will be required to make certain legal commitments through acceptance of Government contract clauses or OT articles. The following outline is illustrative of provisions required by the FAR or statute for inclusion in Phase II awards. This is not a complete list, nor does it contain specific clause/article wording.
- ii. **Standards of Work**
Work performed under the award must conform to professional standards.
- iii. **Inspection**
Work performed under the award is subject to Government inspection and evaluation at all reasonable times.
- iv. **Examination of Records**
The Comptroller General (or a fully authorized representative) shall have the right to examine any directly pertinent awardee records involving award transactions.
- v. **Default**
The Government may terminate the award for failure to perform the negotiated effort.
- vi. **Termination for Convenience**
The Government may terminate the award at any time if it deems termination in its best interest. The firm will be compensated for work performed and reasonable termination costs.
- vii. **Disputes**
Any award dispute not resolved by agreement shall be decided by the Contracting or Agreements Officer with right of appeal.
- viii. **Contract/OT Work Hours**
The awardee may not require an employee to work more than eight hours a day or forty hours a week unless compensated accordingly through overtime pay.
- ix. **Equal Opportunity**
The firm will not discriminate against any employee or employee applicant because of race, color, religion, sex, or national origin.
- x. **Affirmative Action for Veterans**
The awardee will not discriminate against any employee or applicant for employment because he or she is a disabled veteran.
- xi. **Affirmative Action for Handicapped Individuals**
The awardee will not discriminate against any employee or applicant for employment because he or she is physically or mentally handicapped.
- xii. **Officials Not to Benefit**

No Federal Government official may benefit personally from the SBIR/STTR funding agreement.

xiii. Covenant Against Contingent Fees

No person or agency has been employed to solicit or secure the award upon an understanding for compensation except bona fide employees or commercial agencies maintained by the awardee for the purpose of securing business.

xiv. Gratuities

The Government may terminate the contract if gratuities have been offered to any Government representative to secure the awardee.

xv. Patent Infringement

The awardee shall report each notice or patent infringement claim based on contract performance.

xvi. Military Security Requirements

The awardee shall safeguard classified information associated with the contracted work IAW applicable regulations.

xvii. American Made Equipment and Products

The awardee will purchase equipment and/or products in support of the SBIR award from U.S.-based sources whenever possible.

xviii. Unique Identification (UID)

If hardware will be delivered to the Government under the award, there is potential unique item identification will be required IAW DFARS 252.211-7003.

xix. Publication Approval

Government review and approval will be required prior to dissemination or publication, except within and between the awardee and its subcontractors (if any), of classified and non- fundamental information developed under this award or contained in reports to be furnished pursuant to this award.

xx. Animal Welfare

Awards involving research, development, test, evaluation, or training on vertebrate animals will incorporate DFARS clause 252.235-7002 or similar verbiage.

xxi. Protection of Human Subjects

Effective 29 July 2009, contracts including or potentially including research involving human subjects IAW 32 CFR Part 219, DoD Directive 3216.02, and 10 U.S.C. 980, including research meeting exemption criteria under 32 CFR 219.101(b), will incorporate DFARS clause 252.235-7004 or similar verbiage.

xxii. E-Verify

Contracts exceeding the simplified acquisition threshold may include the FAR clause 52.222- 54 "Employment Eligibility Verification" unless exempted by the conditions listed at FAR 22.1803.

xxiii. Similar verbiage will be included in OT awards unless determined exempt through comparable determination.

xxiv. **ITAR**

IAW DFARS 225.7901-4, Export Control Contract Clauses, the clause found at DFARS 252.225- 7048, Export-Controlled Items (June 2013), must be included in all solicitations and contracts; therefore, all awards resulting from this CSO will include DFARS 252.225-7048 or similar verbiage. Full text: <https://www.acquisition.gov/dfars/part-252-clauses#DFARS-252.227-7018>.

xxv. **Cybersecurity**

Awardees are required to provide adequate security on all covered business information systems. Specific security requirements are listed in DFARS 252.204.7012, and compliance is mandatory. Note, DFARS clauses 252.204-7019 and 252.204-7020 also apply to this solicitation.

b. Commercialization Updates in Phase II

After Phase II award, the awardee shall be required to periodically update the following Phase II commercialization results at <https://www.dodsbirsttr.mil/submissions>.

- i. Sales revenue from Phase II-developed products and non-R&D services;
- ii. Additional investment from non-Federal SBIR/STTR Program in activities furthering Phase II technology development and/or commercialization;
- iii. Phase II technology used in a fielded DoD system or acquisition program and, if any, which system or program;
- iv. The number of patents resulting from SBIR/STTR Program awards;
- v. Growth in number of firm employees; and
- vi. Completion of an initial public offering of stock (IPO), if any, resulting all or in part from the Phase II project.

Project updates will be required one year after Phase I performance starts, at Phase II completion, and when the firm submits a new SBIR or STTR proposal to DoD. Firms not submitting new proposals to DoD will update annually after Phase II completion.

c. Copyrights

With the CO/AO's prior written permission, the awardee may copyright (consistent with appropriate national security considerations, if any) material developed with DoD support. DoD receives a royalty-free license for the Federal Government and requires each publication to contain an appropriate acknowledgment and disclaimer statement.

d. Patents

Awardees normally retain the principal worldwide patent rights to Government-funded inventions. The Government receives a royalty-free license, reserves the right to require the patent holder to license others in certain limited circumstances, and requires anyone exclusively licensed to sell the invention in the United States to manufacture it domestically. As authorized by 35 USC 205, the Government will not publicly disclose a

Government-supported invention for a period of five years to allow the awardee to pursue a patent.

e. Technical Data Rights

Rights in technical data, including software, developed under the award terms resulting from proposals submitted under this CSO, generally remain with the awardee. As detailed in DFARS 252.227-7018(b)(1), the Government shall have unlimited rights in specific technical data or computer software generated under SBIR/STTR contracts, to include form, fit, and function data and data necessary for installation, operation, maintenance, and training purposes. Aside from the unlimited rights afforded under DFARS 252.227-7018(b)(1), the Government shall have SBIR data rights in all other technical data or computer software generated under this contract for a period of 20 years, commencing upon contract award. ~~The Government obtains a royalty free license to use such technical data only for Government purposes during the period commencing with contract/Other Transaction award and ending after 20 years.~~ This data should be marked with the restrictive legend specified in DFARS 252.227-7018 or similar. Upon expiration of the 20 year restrictive license, the Government has Government Purpose Rights in the SBIR data.

During the license period, the Government may not release or disclose SBIR data to any entity other than its support services contractors except (1) for evaluation purposes; (2) as expressly permitted by the contractor; or (3) use, release, or disclosure is necessary for emergency repair or overhaul of Government-operated items. See DFARS clause 252.227-7018, "Rights in Noncommercial Technical Data and Computer Software – Small Business Innovation Research (SBIR) Program" at https://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=48%3A3.0.1.8.48#se48.3.252_1227_67018.

If an applicant plans to submit assertions IAW DFARS 252.227-7017 or similar award term, those assertions must be identified and restrictions MUST be included in the proposal submission. Award cannot be executed until assertions are approved or mutually agreed-upon during negotiations.

f. Invention Reporting

SBIR awardees must report inventions to the Component within two months of the inventor's report to the awardee. The inventions report may be accomplished by submitting paper documentation.

g. Final Technical Reports

i. Content: A final report is required for each award. The reports must contain detail regarding the project objectives, work performed, results obtained, and estimates of technical feasibility. A completed SF 298, "Report Documentation Page," will be used as the report's first page. The Report Documentation Page may be prepared and printed from Defense Technical Information Center's (DTIC's) site at http://www.dtic.mil/dtic/submit/guidance_on_submitting_docs_to_dtic.html. Additionally, the final technical report shall contain a completed DD Form 882, "Report of Inventions and Subcontracts."

ii. SF 298 Form "Report Documentation Page" Preparation:

1. For unclassified reports, the submitting company should fill in Block 12 (Distribution/Availability Statement) of the SF 298, "Report Documentation Page," with the following statement: "Distribution authorized to U.S. Government only; Proprietary Information, (Date of Determination). Other requests for this document shall be referred to the Component SBIR Program Office." Note: Data developed under SBIR/STTR awards is subject to DFARS 252.227-7018 or similar protection. AF will review the awardee's Block 12 information and assign the final distribution statement.
2. For additional distribution statement guidance, visit the DTIC site: http://www.dtic.mil/dtic/pdf/distribution_statements_and_reasons.pdf

Block 14 (Abstract), "Report Documentation Page" must include as the first sentence, "Report developed under SBIR/STTR contract (or OT) for topic [insert topic number]. [Follow with the topic title, if possible.]" The abstract must identify the work's purpose and briefly describe that conducted, the findings/results, and potential applications. The abstract will be published by the DoD. Therefore, it shall not contain proprietary or classified data.

Type "UU" in Block 17.

Block 15 (Subject Terms) 298 must include the term "SBIRReport".

Submission: All final reports are submitted to the awarding AF organization IAW the award document. Companies shall not submit Final Reports directly to DTIC. Delivery is normally required within 30 calendar days after technical program completion. Requirements regarding other deliverables' submission will be defined in Sections Band C of contract, and Appendix A of Other Transaction for Prototype, award documents. Special submission instructions for CLASSIFIED reports will be defined in the award's delivery schedule. DO NOT E-MAIL classified or controlled unclassified reports, or reports containing SBIR/STTR Data Rights protected under DFARS 252.227-7018.

8. Voluntary Phase II Funding Commitment Guidance

a. Examples of Voluntary Phase II Funding Commitments

- ~~i. Funding from small business affiliates in support of the proposed RDT&E is generally considered such a commitment.~~
- ii. Investment from outside sources, which includes other companies, state or local Governments, venture capital firms, individual "angel" investors, non-SBIR/non-STTR Federal Government programs, or any combination thereof, is considered such a commitment. This does not include the small business's owner, family members, and/or "affiliates" of the small business, as defined in 13 CFR Section 121.103, as highlighted below:
- iii. Concerns are affiliates when one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

- iv. Factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships are considered in making affiliation determinations.
- v. Individuals or firms with identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms economically dependent through contractual or other relationships, may be treated as one party with such interests aggregated. While the proposal must state whether funding is from external or internal sources, the CO and the SBA have the discretion to designate an entity as an “outside investor,” regardless of the designation in the proposal.
- vi. Such a commitment may also be an arrangement by which the outside party provides cash to the small company in return for such items as equity; a share of royalties; rights in the technology; a percentage of profit; an advance purchase order for products resulting from the technology; Federal funds transferred to AFWERX Financial Management (AFRL/RGF) via Military Interdepartmental Purchase Request (MIPR); or any combination thereof.
- vii. The AF SBIR/STTR CoE reserves the right to adjust these guidelines at any time. Any changes to these guidelines will be sent to the eligible companies and posted online via amendment to this solicitation.

~~b.—Voluntary Phase II Funding Commitment Timing/Logistics~~

~~Funding from small business affiliates in support of the proposed RDT&E is generally considered such a commitment.~~

~~o Investment from outside sources, which includes other companies, state or local Governments, venture capital firms, individual “angel” investors, non-SBIR/non-STTR Federal Government programs, or any combination thereof, is considered such a commitment. This does not include the small business’s owner, family members, and/or “affiliates” of the small business, as defined in 13 CFR Section 121.103, as highlighted below:~~

- ~~☐ Concerns are affiliates when one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.~~
- ~~☐ Factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships are considered in making affiliation determinations.~~

~~☐ Individuals or firms with identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms economically dependent through contractual or other relationships, may be treated as one party with such interests aggregated. While the proposal must state whether funding is from external or internal sources, the CO and the SBA have the discretion to designate an entity as an “outside investor,” regardless of the designation in the proposal.~~

~~o Such a commitment may also be an arrangement by which the outside party provides cash to the small company in return for such items as equity; a share of royalties; rights in the technology; a percentage of profit; an advance purchase order for products resulting from the technology; Federal funds transferred to AFWERX Financial Management (AFRL/RGF) via Military Interdepartmental Purchase Request (MIPR); or any combination thereof.~~

- i. Can Entity E's investment in Small Company S during the first month of S's Phase I SBIR performance qualify as a second state commitment?*
Yes, provided E is an outside investor and the other Voluntary Second Stage Commitment conditions are met. The investment can occur at any time after the start of Phase I performance.
- ii. Small Company A, which won a Phase I award, spins off Small Company B to commercialize the SBIR technology. A then convinces Angel Investor I to invest funds in B. Is I's investment in B considered a second stage commitment?*
For Angel Investor I's investment in Small Company B to qualify Small Company A for such a commitment, AF must determine if A and B are substantially the same entity as evidenced, for example, by meeting the "affiliates" definition " in 13 C.F.R. Sec.121.103. If AF determines A and B are substantially the same entity, I's investment in B could qualify A as a second stage commitment. Of course, the parties must also meet the other conditions, e.g., I must be an outside investor.
- iii. Can Entity E's investment in Small Company S before the submission of S's Direct to Phase II SBIR proposal qualify as a Phase II funding commitment?*
- iv. Yes, provided E is an outside investor and the other second stage commitment conditions are met. The investment can occur at any time after the pre-release date of Phase II proposal instructions, and no later than 90 calendar days after award.*

9. D2P2 Topics

AF Number: AFX234-DCSO1

TITLE: Orbital Prime ISAM: In-Space Servicing Assembly and Manufacturing Direct-To-Phase-II SBIR

TECH FOCUS AREA:

TECHNOLOGY AREAS: Sensors, Electronics, Space Platforms

OBJECTIVE: This is a topic promulgated in partnership with SpaceWERX and AFRL/RV. A D2P2 may be awarded for a maximum period of 15 months, inclusive of 15 months technical performance, at a maximum of \$1,700,000 SBIR funds. The objective of this topic is to explore Innovative Defense-Related Dual-Purpose Technologies relating to the mission of In-space Servicing Assembly and Manufacturing (ISAM). An additional objective is to grow the Space Force's industrial base. This topic is intended to reach companies capable of completing a feasibility study and prototype validated concepts under an accelerated Phase II schedule. This topic is aimed at later stage research and development efforts rather than "front-end" or basic R/R&D.

DESCRIPTION: This is a topic promulgated in partnership with SpaceWERX and AFRL/RV. A D2P2 may be awarded for a maximum period of 15 months, inclusive of 15 months technical performance, at a maximum of \$1,700,000 SBIR funds. The objective of this topic is to explore Innovative Defense-Related Dual-Purpose Technologies relating to the mission of In-space Servicing Assembly and Manufacturing (ISAM). An additional objective is to grow the Space Force's industrial base. This topic is intended to reach companies capable of completing a feasibility study and prototype validated concepts under an accelerated Phase II schedule. This topic is aimed at later stage research and development efforts rather than "front-end" or basic R/R&D.

PHASE I: This topic is intended for technology proven ready to move directly into Phase II. Therefore, a Phase I award is not required. The offeror is required to provide detail and documentation in the Direct to Phase II proposal which demonstrates accomplishment of a "Phase 1-type" effort, including a feasibility study. This includes determining, insofar as possible, the scientific and technical merit and feasibility of ideas appearing to have commercial potential. It must have validated the product-market fit between the proposed solution and a potential USSF stakeholder. The offeror should have defined a clear, immediately actionable plan with the proposed solution and the USSF customer. The feasibility study must identify the prime potential USSF end user(s) for the Defense-modified commercial offering to solve the USSF need, i.e., how it has been modified; describe integration cost and feasibility with current mission-specific products; describe if/how the demonstration can be used by other DoD or Governmental customers.

PHASE II: Develop, install, integrate or otherwise demonstrate a prototype system determined to be the most feasible solution during the "Phase I-type" feasibility study. This demonstration should focus specifically on:

Evaluating the proposed solution against the objectives and measurable key results as defined in the Phase I feasibility study.

Describing in detail how the solution differs from prospective non-defense commercial offerings in comparison to USSF counterparts and how it can be scaled for broader use.

A clear transition path for the proposed solution that takes into account input from all affected stakeholders, including but not limited to end users, engineering, sustainment, contracting, finance, legal, and cyber security.

Specific details about how the solution can integrate with other current and potential future solutions. How the solution can be sustainable (i.e. overall supportability)

Clearly identify other specific DoD or governmental customers who want to use the solution.

PHASE III DUAL USE APPLICATIONS: Some solutions may go from Phase II to Phase III as soon as the product-market fit is verified. Potential Phase III awardees will transition the adapted non-Defense commercial solution to provide expanded mission capability for a broad range of potential Governmental and civilian users and alternate mission applications.

NOTES: N/A

- REFERENCES: 1. <https://spacenews.com/space-force-launches-orbital-prime-program-to-spur-market-for-on-orbit-services>
2. <https://www.wired.com/story/the-us-space-force-wants-to-clean-up-junk-in-orbit/>
3. <https://www.wired.com/story/the-us-space-force-wants-to-clean-up-junk-in-orbit>
4. <https://www.airforcemag.com/how-the-space-force-is-fast-tracking-new-tech-to-clean-up-orbital-debris>
5. <https://www.airforcemag.com/how-the-space-force-is-fast-tracking-new-tech-to-clean-up-orbital-debris/>
6. <https://spacewerx.us/space-prime/>
7. <https://www.whitehouse.gov/wp-content/uploads/2022/04/04-2022-ISAM-National-Strategy-Final.pdf>
8. <http://www.whitehouse.gov/wp-content/uploads/2022/04/04-2022-ISAM-National-Strategy-Final.pdf>

KEYWORDS: OSAM; On-Orbit Servicing; On-Orbit Assembly; On-Orbit Manufacturing; ADR; Active Debris Removal; Active Debris Remediation; AFWERX, SpaceWERX; Prime; ISAM; In-space Servicing Assembly and Manufacturing

AF Number: AFX234-DCSO2

TITLE: Direct-to-Phase-II Call for Innovative Defense-Related Dual- Purpose Technologies/Solutions with a Clear Air Force Stakeholder Need

TECH FOCUS AREAS: Biotechnology Space; Quantum Sciences; Microelectronics; Directed Energy; Cybersecurity; Network Command, Control and Communications; Nuclear; Autonomy; Artificial Intelligence/Machine Learning; 5G; General Warfighting Requirements (GWR)

TECHNOLOGY AREAS: Ground Sea; Nuclear; Bio Medical; Sensors; Electronics; Chem Bio Defense; Space Platform; Materials; Information Systems; Air Platform; Battlespace

OBJECTIVE: This Department of the Air Force (DAF) topic is seeking technologies for transition into the United States Air Force (USAF) and/or United States Space Force (USSF). This topic is in partnership with AFWERX and SpaceWERX. A Direct to Phase II (D2P2) may be awarded for a maximum period of twenty-one (21) months, including eighteen (18) months technical performance and three (3) months for reporting, at a maximum of \$1,250,000 SBIR funds. Primary objectives of this topic include exploring innovative technology solutions applicable to both defense and non-defense markets, scaling capability, and growing the industrial base for defense. This topic seeks companies with capability to prototype validated concepts under an accelerated Phase II schedule. This topic is aimed at applied research and development efforts rather than "front-end"; or basic Research (R)/Research & Development(R&D).

DESCRIPTION: The DAF is a large and complex organization consisting of many functions, a vast majority of which have similar counterparts in the commercial sector. It is important that potential solutions have a high probability of keeping pace with technological change. Thus, they should be closely tied to commercial technologies and solutions supporting the proposed development. This topic is meant for non-defense commercial solutions to be adapted to meet DAF stakeholders' needs.

Submissions should focus on the following characteristics:

- Commercialization Potential - The potential for private sector commercialization as well as the resulting benefits and capabilities.
- Defense Need - Offeror(s) should demonstrate understanding of the potential fit between their solution and the defense stakeholder's need.
- Technical Merit - The soundness and innovation of the proposed approach, as well as its differentiation from current customer alternatives, and incremental progress toward fulfilling the identified defense need. Includes the proposed Principal Investigators'/Project Managers', supporting staff, and consultants' qualifications to execute the proposed approach.

The topic is truly 'open' (agnostic of industry, technology, and problem area), but proposals for this topic should demonstrate a high probability of identifying a product-mission fit between a DAF (Air Force and/or Space Force) stakeholder and the proposed adaptation of the non-defense commercial solution. This is accomplished most effectively through a proposal with a mature non-Defense technical solution and a clear understanding of its adaptation to meet a DAF customer's specific need, supported by documentation from a specific motivated, empowered DAF end-user and customer ready and willing to participate in the proposed prototype solution's trial.

The USAF has identified (6) Strategic Capabilities; Air Superiority; Intelligence, Surveillance, and Reconnaissance; Rapid Global Mobility; Global Strike; Command and Control; Responsibilities to organize, train, and equip Airmen; *Space Force Blue Sky.

The USSF has identified (6) Strategic Capabilities; Space Security; Combat Power Projection; Space Mobility and Logistics; Information Mobility; Space Domain Awareness; Responsibilities to organize, train, and equip Guardians; *Air Force Blue Sky.

BLUE SKY* While only twelve (12) strategic capabilities are listed, it is possible for a solution to provide a strategic capability(s) in a previously unconsidered area. Therefore, if the applicant feels the proposed solution does not fit within one of those listed, include an explanation of the solution's ability to provide increased strategic capability(s) within the context of DAF, national, and global constraints.

Applicants should identify which Strategic Capability(s) the proposed solution addresses. The alignment between a proposal and a Strategic Capability(s) can strengthen an application. However, this does not change the requirement to demonstrate the Defense Need, but may complement it. This also does not preclude companies looking to solve other problems not listed. It is simply intended to give indications of DAF special emphasis areas at this time.

S&T Strategy. *NOTE: While the S&T strategy document contains only five capabilities, it is possible for a solution to provide a strategic capability in a previously unconsidered area. Therefore, if the offeror feels the proposed solution does not fit within one of the listed capabilities, reference "BLUE SKY", including an explanation of the solution's ability to provide increased strategic capability within the context of AF, national, and global constraints. The alignment between a proposal and an S&T Strategic Capability can strengthen an application. Note, this does not change the requirement to demonstrate the Defense need, but may complement it. This also does not preclude companies looking to solve other problems not listed in the S&T Strategic Capabilities. It is simply intended to give indications of AF special emphasis areas at this time.

PHASE I: This topic is intended for technology proven ready to move directly into Phase II. Therefore, a Phase I award is not required. The offeror is required to provide detail and documentation in the Direct to Phase II proposal which demonstrates accomplishment of a "Phase I-like" effort, including a feasibility study. This includes determining, insofar as possible, the scientific and technical merit and feasibility of ideas appearing to have commercial potential. It must have validated the product-mission fit between the proposed solution and a potential Air Force and/or Space Force stakeholder. The offeror should have defined a clear, immediately actionable plan with the proposed solution and the DAF customer and end-user.

The feasibility study should have:

1. Clearly identified the potential stakeholders of the adapted solution for solving the Air Force and/or Space Force need(s).
2. Described the pathway to integrating with DAF operations, to include how the offeror plans to accomplish core technology development, navigate applicable regulatory processes, and integrate with other relevant systems and/or processes.
3. Described if and how the solution can be used by other DoD or Governmental customers.

PHASE II: Proposals should include development, installation, integration, demonstration and/or test and evaluation of the proposed solution prototype system.

These activities should focus specifically on:

1. Evaluating the adapted solution against the proposed objectives and measurable key results.
2. Describing in detail how the installed solution differs from the non-defense commercial offering to solve the Air Force and/or Space Force need(s), as well as how it can be scaled for wide adoption, i.e., modified for scale.

3. Identifying the proposed solution's clear transition path, taking into account input from affected stakeholders, including but not limited to, end users, engineering, sustainment, contracting, finance, legal, and cyber security.
4. Specifying the solution's integration with other current and potential future solutions.
5. Describing the solution's sustainability, i.e., supportability. Identifying other specific DoD or Governmental customers for the solution.

PHASE III DUAL USE APPLICATIONS: Some solutions may go from Phase II to Phase III as soon as the product-market fit is verified. Potential Phase III awardees will transition the adapted non-Defense commercial solution to provide expanded mission capability for a broad range of potential Governmental and civilian users and alternate mission applications.

NOTES: Due to heavy interest in this topic, the DAF will not answer questions via email, except in rare cases. Webinars will be held to efficiently address all questions.

a. Please monitor <https://af-ventures.com/> for details. SBIR solicitations result in contracts and Other Transactions for Prototype, NOT grants. Therefore, SAM.gov registration should reflect ALL AWARDS for Purpose of Registration: Firms registered to receive grants only will be ineligible.

b. Registration in SAM is required to be eligible for award. Please verify the firm's CAGE code, company name, address information, DUNS numbers, etc., prior to submitting a proposal. It is the firm's responsibility to ensure the proposal and SAM.gov are consistent. c. Proposed technologies may be restricted under the International Traffic in Arms Regulations (ITAR) which control Defense-related materials/services import/export, or the Export Administration Regulations (EAR), controlling dual use items. Offerors must review the U.S. Munitions List, <https://www.law.cornell.edu/cfr/text/22/121.1>, and provide a tentative determination regarding applicability to their proposed efforts. If determined applicable, a certified DD Form 2345, Militarily Critical Technology Agreement, must be submitted with the proposal. Information regarding the application process and instructions for form completion are found at <https://www.dla.mil/HQ/LogisticsOperations/Services/JCP/DD2345Instructions/>. NOTE: Export control compliance statements are not all-inclusive and do not remove submitters' liability to 1) comply with applicable ITAR/EAR export control restrictions or 2) inform the Government of potential export restrictions as efforts proceed.

REFERENCES: 1. FitzGerald, B., Sander, A.; Parziale, J. (2016). Future Foundry: A New Strategic Approach to Military- Technical Advantage. Retrieved June 12, 2018 <https://www.cnas.org/publications/reports/future-foundry>

2. Blank, S. (2016). The Mission Model Canvas - An Adapted Business Model Canvas for Mission-Driven Organizations. Retrieved June 12, 2018 <https://steveblank.com/2016/02/23/the-mission-model-canvas- an-adapted-business-model-canvas-for-mission-driven>

3. US Department of Defense. (2018). 2018 National Defense Strategy of the United States Summary, 11. Retrieved from <https://www.Defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

4. Chaplain, C. T. (2016). Space Acquisitions: Challenges Facing DOD as it Changes Approaches to Space Acquisitions. US Government Accountability Office Washington United States.

5. Space Capstone Publication, Spacepower (SCP). (2020). Retrieved from https://www.spaceforce.mil/Portals/1/Space%20Capstone%20Publication_10%20Aug%202020.pdf

KEYWORDS: Open; Other; Disruptive; Radical; Dual-Use; Commercial2) Blank, S. (2016). The Mission Model Canvas - An Adapted Business Model Canvas for Mission- Driven Organizations. Retrieved June 12, 2018:<https://steveblank.com/2016/02/23/the-mission-model- canvas- an-adapted-business-model-canvas-for-mission-driven;>

3) US Department of Defense. (2018). 2018 National Defense Strategy of the United States Summary, 11. Retrieved from:<https://www.Defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>;
KEYWORDS: Open; Other; Disruptive; Radical; Dual-Use; Commercial

10. Appendices

a. ~~Appendix A– Direct to Phase II White Paper Instructions~~

~~The NTE 15-page white paper mandatory for AF224 DCSO1. The white paper should cover the following items in the order given below:~~

~~Table of Contents: Include a table of contents immediately following the Proposal Cover Sheet. Does not count against the 15-page limit.~~

~~Glossary: Include a glossary of acronyms and abbreviations used in the proposal. Does not count against the 15-page limit.~~

~~i. Technical Summary~~

~~1. Identification and Significance of the Problem or Opportunity~~

~~Briefly describe the specific problem/opportunity addressed in the feasibility study and its relationship to Phase II/Direct to Phase II.~~

~~2. Non-Defense Commercial Solution~~

~~Describe the non-Defense commercial solution, including its use by non-Defense commercial customers. Describe its technical specifications as well as the qualitative and quantitative value it brings to the solution's users. Relevant supporting data such as journal articles, literature, Government publications, etc., should be contained or referenced in the proposal and will count toward the page limit. Additionally, answer the following questions:~~

- ~~a. Is the proposed item “of a type”; i.e., similar to a commercial item, customarily used by the public or by non-Governmental entities for non-Governmental purposes?~~
- ~~b. Has the proposed item been
 - ~~i. Sold, leased, or licensed to the public; OR~~
 - ~~ii. Offered for sale, lease, or license to the public?~~~~
- ~~c. Include, where applicable pre-sales, pilots, sales, revenue, active users, subscriptions, downloads, and/or other forms of traction/adoption. Broad adoption and commercial success can be indicators of commercial potential and reduced technical risk, but are not mandated. This is an RDT&E solicitation, not a Commercial Off the Shelf resale solicitation. See FAR 2.101 for a full definition of commercial items.~~

~~3. Proposed Adaptation of Non-Defense Commercial Solution~~

~~Describe the proposed R/R&D adaptation of or the T&E (strictly for use in technical or weapons systems) to be performed on the non-Defense commercial solution to meet a US Government end-user need. In this section, answer the following questions:~~

- ~~a. How similar is the modified item to others sold in the commercial marketplace to non-US Government customers?~~
- ~~b. Does the supplier perform similar modifications for non-US Government customers?~~
- ~~c. Do AF unique modifications change the product's essential use and purpose?~~
- ~~d. Are there differences in the production/manufacturing/delivery processes used to perform the modification for the Federal Government versus non-Government customers?~~

- e. ~~What are the quantitative benefits expected for identified AF end users?~~
- f. ~~When adapting the commercial solution, what is the intended Commercial Off the Shelf (COTS) or commercial product/process modification? Explain.~~
- g. ~~If applicable, what Test & Evaluation will be performed on the solution, and what Technical or Weapons System will the solution be integrated into? What is the desired outcome of that T&E? See Section 4.4.16 for more information on identifying RDT&E in SBIR/STTR Proposals.~~

~~4. Phase I “Feasibility Study” Results~~

~~The proposal shall detail the solution’s ability to meet DAF end users’ and customers’ needs. These results shall be framed in the context of DAF End User and Customer Exploration previously performed for the effort.~~

- a. ~~Scientific or Technical R/R&D effort, including research questions, methods, results, and relevant literature.~~
- b. ~~DAF End User and Customer Exploration Methods: Describe methods, both successful and unsuccessful, used to perform technical and scientific feasibility analysis, as well as DAF Customer and End User Exploration, for adapting the non-Defense commercial solution to a specific DAF end user’s needs. This should include detailed reports of at least one in-depth interview with an DAF End User and one in-depth interview with an DAF Customer.~~
- c. ~~Empowered and Committed DAF End Users: List and describe specific DAF end users, e.g., operators willing to support further R&D, testing, evaluation, or trial for the proposed Phase II solution. Specifically explain how the proposed solution meets the end user(s) needs. Describe in as much detail as possible the firm’s understanding of the AF end user’s problem or benefit area.~~
- d. ~~Empowered and Committed DAF Customers: List and describe the specific DAF customer, e.g., a Program Manager at a System Program Office willing to assist with transitioning the proposed Phase II solution into a Phase III.~~
- e. ~~Joint organizations may be the End User or Customer, but the Customer Memorandum must clearly articulate how the Joint End User/Customer represents a validated Department of the Air Force need. In these cases, the Primary TPOC must be from the Department of the Air Force.~~
- f. ~~Empowered and Committed US Non-DAF Government End-Users: Commitments from US non-DAF Government end users will also be considered. However, there MUST be at least one DAF/Joint end user and customer as described above.~~
- g. ~~NOTE: Inclusion of a Customer Memorandum in the prescribed format is mandatory for **Topic AF234-ODCSO20**. The Customer Memorandum formally captures interest from the~~

~~empowered and committed DAF end users and customers described above. Proposals for **Topic AF234-ODCSO20** without a signed Customer Memorandum or proposals that do not follow the mandatory template will not be considered. Customer Memoranda must be uploaded to the 'Letters of Support' Section in Volume 5, Supporting Documents.~~

5.—Compliance and Regulatory Activities

- ~~a.—Will there be flight testing? (indicate indoor/outdoor and manned/unmanned)~~
- ~~b.—If yes to flight testing please provide (if known) the test facility/range name and/or location of where the flight test will be conducted.~~
- ~~c.—Will any hardware or software be delivered to the Government as part of the contract? Note, the contractor must submit a preliminary hazard list (per Mil Std 882e requirements) with the delivered item.~~
- ~~d.—Will any Government personnel, facilities, or Government-owned equipment be used during testing? Note: the contractor must complete a Government safety review and provide the documentation to AFWERX via email (send to: p2@afwerx.af.mil) before the GFE is used in testing. After AFWERX receives the safety documentation, a safety review process will be initiated (for project planning purposes the review will take approximately 4 weeks to complete.~~
- ~~e.—Will there be any weapons or munitions testing?~~
- ~~f.—Does this activity use explosives, propellants, deflagrating materials, or ammunition?~~
- ~~g.—Does this activity use a direct energy device (including lasers) or radio frequency radiation?~~
- ~~h.—Does this activity involve hazardous materials?~~
- ~~i.—Will there be any animal testing?~~
- ~~j.—Does any testing meet the definition of human subject research per 32 CFR 219?~~
- ~~k.—Will testing include use of toxins, human-derived materials, or recombinant DNA?~~
- ~~l.—Does this project involve interaction or intervention with humans?~~
- ~~m.—Does this project involve the access to, collection, use, analysis, or sharing of human data or human biological specimens?~~

6.—Phase II Technical Objectives and Key Results

~~Clearly describe three to five objectives of the Phase II RDT&E effort. These objectives should be tied to specific proposed Phase II trial tasks. These objectives shall be qualitative and specific to the participating DAF end user(s). The objectives shall be tied to specific time periods, tangible and unambiguous regarding anticipated results. These objectives shall describe end-state outcomes (i.e. what will be done), rather than processes or activities (i.e., how it will be done). Each objective shall be accompanied by three to five specific 'key results', measurable~~

throughout Phase II performance. These key results will likely be quantitative in nature, e.g., deliver X widgets to DAF end-user. Non-quantitative key results shall be clearly measurable.

- a. ~~**Required Stakeholders Needed to Accomplish Phase II:** List anticipated interactions with stakeholders necessary to accomplish the Phase II trial. Such stakeholders may include lawyers, test range officials, information assurance officials, system program office engineers, etc. Clearly describe Phase II trial completion requirements not within the offeror's immediate control and plans to work within those constraints.~~

~~ii. Phase II Work Plan~~

~~Proposals including private investment cost match should include the tasks to be supported with those funds in the Work Plan. Tasks to be executed with private investment should be discernable from SBIR-funded tasks. If awarded, the SBIR-funded and private investment-funded tasks are included in different parts of the award document. The Work Plan should be structured around the effort's purpose and requirements set forth in clear, specific, and objective terms with measurable outcomes. The work plan has two mandatory features; (1) Work stated in terms of outcomes or results, rather than performance methods, and (2) measurable performance standards, including assessment methods for these standards. The plan should include the location and mechanics for accomplishing the proposed approach. Phase II projects shall attempt to demonstrate the Phase I-like effort's technical feasibility, including transition results to the private sector or Government customer.~~

~~The DAF uses the work plan outline as the initial draft of the Direct to Phase II Statement of Work (SOW). Therefore, do not include proprietary information in the work plan outline.~~

~~1. Scope~~

~~List the effort's major requirements and specifications.~~

~~2. Task Outline~~

~~Provide an outline of work to be accomplished throughout the effort. For proposals with government funding commitments (where the funds will be sent to AFRL/RGF to be included in the Phase II effort), clearly identify the tasks that will be funded by the SBIR program and the tasks that will be funded by the government organization that is committing funds.~~

~~3. Milestone Schedule~~

~~Include the mutually agreed-upon milestone schedule from your signed Customer Memorandum (if applicable). Each milestone marks the completion of a required deliverable (e.g., prototype component, test plan, prototype production, final report submission, etc.). Status reports cannot be milestones but are deliverables as described below. Describe how the milestones will be identified as completed. Milestone payments shall reflect justifiable costs to achieve completion. Supporting rationale, e.g., invoices from non-Defense commercial customers, will be included in Volume 5, Supporting Documents. NOTE: Pricing information from non-Defense commercial customers is likely proprietary and should be marked as such.~~

~~4. Deliverables~~

Include a section clearly describing the specific sample/prototype hardware/software to be delivered, as well as data deliverables, schedules, and quantities.

5. Unique Item Identification

IAW DFARS 252.211-7003, Item Identification and Valuation, may be required. For hardware, more information may be found at <https://www.acq.osd.mil/dpap/dars/dfars/html/current/25221.htm#252.211-7003>.

6. Required Reports

At a minimum, the following reports are required for ALL Phase II awards and must be included in the Work Plan. All are considered scientific and technical reports:

a. Final Report

The draft is due 30 calendar days after completion of the Phase II technical effort. The first page of the final report will include a single page project summary, identifying the purpose of the work, providing a brief description of the effort accomplished, and listing potential results applications. The summary may be published by DoD. Therefore, it shall not contain proprietary information. It shall also contain project objectives met, work completed, results obtained, and technical feasibility estimates.

b. Status Reports

Status reports are due quarterly, at a minimum. These shall be concise documents describing progress in meeting the selected DAF end-user's needs. Each status report shall be no longer than 15 slides. The status reports shall include progress toward Phase II objectives and key results, as well as a quantitative measure between zero (0) and one (1) of progress toward each.

c. Phase II Summary Report

The Phase II summary report is due at technical effort completion. It shall be submitted via email to the cognizant AF CO/AO. Reports shall not exceed 700 words, including a description of the technology and anticipated applications/benefits for Government and/or private sector use.

d. Additional Reporting

The DAF end-user or customer may require additional reporting or documentation including:

- i. Software documentation and user manuals'
- ii. Engineering drawings
- iii. Operation and Maintenance documentation
- iv. Safety hazard analysis when the project will result in partial or total development/delivery of hardware; and
- v. Updated commercialization results

e. Additional Reporting Requirements for Efforts with Private Funding Commitments

The final Phase II status report must include a brief accounting, in company format, regarding investor funds' expenditures to support the project.

7. Safety Related Deliverables

Safety requirements shall be followed in the proposed project's design and performance. The Work Plan must contain separate sections specifically addressing the following:

a.—Company Information

Focused objectives/core competencies; specialization area(s); products with significant sales; and history of previous Federal and non-Federal funding, regulatory experience, and subsequent commercialization.

b.—Customer and Competition

Clear description of key technology objectives, current competition, and advantages compared to competing products or services; description of hurdles to innovation acceptance.

c.—Market

Milestones, target dates, market size analysis, and estimated market share after first year and fifth year sales; plan to obtain market share.

d.—Intellectual Property

Patent status, technology lead, trade secrets, or other demonstration of a plan to achieve sufficient protection to realize the commercialization stage and attain at least a temporal competitive advantage.

e.—Financing

Plans for securing necessary funding in Phase II.

iii.—Assistance and Mentoring

Plans for securing needed technical or business assistance through mentoring, partnering, or through arrangements with State assistance programs, Small Business Development Centers, FFRDCs, Manufacturing Extension Partnership centers, the AF Mentor Protégé Program, or other assistance providers.

iv.—Commercialization Strategy

1.—Commercialization Plan

The SBA and DoD require Phase II proposals include a commercialization plan. The plan should briefly describe the commercialization potential for the proposed project's anticipated results, as well as plans for exploitation in both the Defense and non-Defense markets. The plan must include the following: Specifically address the following questions:

i.——What is the first product into which the technology will be incorporated?

ii.——Who are the customers and what is the estimated market size? How much money is needed to bring the technology to market? How will the funding be raised?

iii.——Does the company possess marketing expertise? If not, how will it be obtained?

iv.——Which companies are the proposing firm's competitors, and what is the firm's price and/or quality advantage over them?

v.——Are there private sector or non-SBIR/STTR funding sources demonstrating commitment to Phase II results? This includes both outside private investment such as venture capital, angel investors, state or local government programs, etc., and internal funding sources, such as funding from affiliates. Please delineate past and potential future

investments, e.g., currently raising a round, have signed term sheets. Also note if commitments are conditional on receiving a Phase II award.

vi. — Has your company received or will it receive any foreign investment? If so, what is the source and the received or anticipated amount?

vii. — Are there Phase III (Government or commercial) follow-on commitments for the proposed technology?

viii. — Are there any other commercial potential indicators? Consider pre-sales, pilots, sales, revenue, active users, subscriptions, downloads, and/or other forms of traction/adoption and commercial signals of interest, demand, and faith in your team/solution.

ix. — What is the last 12 months' total revenue from non-Defense commercial solution sales?

x. — State the proposed Phase II's anticipated end results, specifically plans to transition to a Phase III with a potential Government customer.

2. Military Applications/DoD Customers

Briefly describe the proposed solution's existing potential military requirement. Identify the DoD agency/organization most likely to become the solution's customer. In many cases the potential DoD customer will be different than the end user. For example, the user may be in an operational flying unit and the customer in a system program office for the related aircraft. State whether a DoD agency has expressed interest in, or commitment to, a non-SBIR, Federally funded Phase III effort or a Phase II enhancement with matching SBIR funds. If so, please include relevant details regarding funding availability, e.g., fiscal year, for solution transition, and other relevant funding details, such as funding type, e.g., RDT&E, Operations and Maintenance, etc. Include agency points of contact names, email addresses, and telephone numbers.

3. Non-Defense Commercial Customers

a. — Past revenue from commercial customers of the proposed non-Defense commercial solution. Clearly list non-Defense commercial customers, including revenue received as a result of the proposed solution's sales. Do not include other solutions the company may offer.

b. — Potential revenue-generating projects directly related to the proposed non-Defense commercial solution or adaptation thereof. Separately list potential revenue-generating projects with Defense or non-Defense customers directly related to the proposed solution(s). NOTE: On-going or completed projects/sales, such as those in section 2.5.1, are strongly preferred to potential projects.

v. Key Personnel

1. Non-US Citizens

Identify all non-U.S. citizens and dual citizens proposed as direct employees, subcontractors, or consultants. For these individuals, in addition to technical resumes, please provide countries of origin, type of visas or work permits held, and explanation of their anticipated involvement level in the project, i.e., tasks to be assigned. When the

~~topic area is subject to export control, these individuals, if permitted to participate, are limited to work in the public domain. Further, tasks assigned must not be capable of assimilation into an understanding of the project's overall objectives. This precludes foreign citizens from acting in key positions such as Principal Investigator, Senior Engineer, etc. Additional information may be requested during negotiations to verify foreign citizens' eligibility.~~

~~**2.—Investors and Partners**~~

~~Identify company investors, shareholders, or strategic advisors making significant contributions to support the Phase II effort. Explain how their past experiences or track record will support the technical or commercialization efforts. This could include leveraging other entities in company investors' portfolios or accessing other capital sources.~~

~~**vi.—Related Work**~~

~~Describe significant activities directly related to the proposed effort, including previous programs conducted by the Principal Investigator, proposing firm, consultants, or others, and their application to the proposed project. List reviewers providing comments regarding the offeror's knowledge of the state of the art in the specific approach proposed. Specify related Government efforts, SBIR or otherwise, awarded, previously proposed, or intended for proposal.~~

b. Appendix B- Certification Questions and Coversheet Supplement
Certification/Eligibility Check

The online coversheet asks many questions and, depending on the answers, more information may be needed. The list of the questions is reflected below along with any additional information needed; required additional information should be provided in Volume 5, Supporting Documents. Consolidate all required items below (including the question that triggered the requirement) into a single .pdf file with the title “Coversheet Supplement”.

1. Do you allow for the release of contact information to Economic Development Organizations? Either answer is awardable.
2. Are you a small business as described in section 3.22 2(d) of this CSO, with no more than 500 employees including affiliates?
If your firm is NOT an eligible small business, your proposal will be disqualified.
3. Does your business concern meet the ownership and control requirements in 13 CFR 121.702?
If your firm does NOT meet the ownership and control requirements, your proposal will be disqualified.
4. Is 50% or more of your firm owned or managed by a corporate entity?
 - (If YES, additional information required in Volume 5) If YES, and the corporate entity is also a small business, please include in this section a description of the corporate relationship, including other affiliates of the owning corporate entity.
 - ~~If the firm is 50% or more owned or managed by a corporate entity that is not a small business, the proposal will be disqualified.~~
5. At a minimum, will ~~two thirds (for Phase I) or half~~ (for Phase II) the research and/or analytical work be carried out by your small business as described in Section 4.2 3(c) of this CSO?
 - If your firm will NOT perform the prescribed percentage of the research and/or analytical work, your proposal will be disqualified.
6. Is primary employment of the principal investigator with your firm as described in section 4.2 2(d) of this CSO?
 - ~~If primary employment of the Principal Investigator for this project is NOT with the firm at award and throughout performance, the proposal will be disqualified.~~
7. Has your firm been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving Federal funds?
 - If your firm has been convicted of a fraud-related crime involved SBIR and/or STTR funds, your proposal will be disqualified.

8. Has your firm's Principal Investigator (PI) or Corporate Official (CO), or owner been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving Federal funds?
- If the Principal Investigator or Corporate Official has been convicted of a fraud-related crime involving SBIR and/or STTR funds, your proposal will be disqualified.
9. Has your firm met the performance benchmarks in Section ~~3-1~~ 2(d) of this CSO and listed by the SBA on their website as eligible to participate? Either answer is awardable.
10. Is your firm registered in the SBA's venture capital database as majority-owned by venture capital operating companies, hedge funds, or private equity firms?
- (If YES, additional information required in Volume 5) If YES, please state whether the VCOC, hedge fund, or private equity firm is also a small business as defined by the SBA. If so, then the VCOC, hedge fund, or private equity firm may count as an 'affiliate' and their employee numbers will need to be added to your employee total.
11. Is your firm more than 50% owned by a single Venture Capital Owned Company (VCOC), hedge fund, or private equity firm?
- (If YES, additional information required in Volume 5) If YES, please state whether the VCOC, hedge fund, or private equity firm is also a small business as defined by the SBA. If so, then the VCOC, hedge fund, or private equity firm may count as an 'affiliate' and their employee numbers will need to be added to your employee total.

NOTE (applies to questions 10, 11, and 12): If questions 10 or 11 are answered 'YES', then explain the ownership structure of the firm and its investors. If the VCs, hedge funds or PE firms owning equity in the company are themselves small businesses as defined by the SBA, the proposal may be still eligible for award. More information can be found here:

https://www.jhuapl.edu/vendorforms/forms/data_rights_assertion_table.pdf.

12. Number of employees including all affiliates (average for preceding 12 months):
- If your firm and affiliates have employed, on average over the last 12 months, more than 500 employees, your proposal will be disqualified.
13. Is your firm affiliated as set forth in 13 CFR 121.103?
- (If YES, additional information required in Volume 5) If yes, then please detail your affiliations as described at <https://www.sba.gov/document/support--affiliation-guide-size-standards>.
 - Note: This may include investors, i.e., VCs, hedge funds or PE firms, and their other controlled entities, if they own a controlling share of the company.

NOTE (applies to questions 13 and 14): A business that is wholly or substantially owned by investment companies or development companies licensed or qualified under the Small Business Investment Act of 1958 (SBIA), they are not considered affiliates of those investment companies or development companies.

14. As defined by SBA: All answers may be “yes” or “no” without impacting eligibility.

- a. Are you a socially or economically disadvantaged small business?
- b. Are you a Woman-Owned small business (WOSB)?
- c. Are you a certified HUBZone small business concern?
- d. Are you a Service-Disabled Veteran-Owned small business (SDVOSB)?

15. Has the Defense Contracting Audit Agency (DCAA) or other agreed upon agency, performed a review of the firm’s accounts or records in connection with Government contracts or subcontracts within the past 12 months? Either answer is awardable.

16. Does the proposed cost include Technical and Business Assistance (TABAs)? The AF does not allow for TABAs.

17. Has a proposal for essentially equivalent work (Section 3.4 of this CSO) been submitted to other US government agencies or DOD components?

o (If YES, additional information required in Volume 5) If a proposal submitted in response to this CSO is substantially the same as another proposal that was funded, is now being funded, or is pending with another Federal Agency, or another or the same DoD Component, you must reveal this on the Proposal Cover Sheet (Volume 1) and provide the following information in the Coversheet Supplement:

Name of Federal Agency to which the Proposal was submitted, or from which an award is expected or has been received	Date of proposal submission or date of award	Title of Proposal (if SBIR/STTR, include Proposal Number and SBIR/STTR topic number)	Name and Title of Principal Investigator for each proposal submitted or award received	Was awarded? If so, include contract number
(LIST)	(LIST)	(LIST)	(LIST)	(LIST)

18. Has a contract been awarded for any of the proposals listed above?

- If your firm has been awarded a contract from the US Government for essentially equivalent work, your proposal will be disqualified.

19. Are you submitting assertions in accordance with DFARS 252.227-7017 "Identification and assertions use, release, or disclosure restriction"?

- (If YES, additional information required in Volume 5) If you answered ‘yes’ to this question, you must include the table in Volume 5 of your proposal,

which can be found at:

https://www.jhuapl.edu/vendorforms/forms/data_rights_assertion_table.pdf

- The contract cannot be awarded until assertions have been approved.
- o If claiming data rights assertions without including a Data Rights Assertions Table, the proposal will be disqualified.

NOTE - Rights in technical data, including software, developed under the terms of any contract resulting from proposals submitted in response to this CSO generally remain with the contractor. ~~except that the Government obtains a royalty free license to use such technical data only for Government purposes during the period commencing with contract award and ending 20 years later. This data should be marked with the restrictive legend specified in DFARS 252.227-7018.~~ As detailed in DFARS 252.227-7018(b)(1), the Government shall have unlimited rights in specific technical data or computer software generated under SBIR/STTR contracts, to include form, fit, and function data and data necessary for installation, operation, maintenance, and training purposes. Aside from the unlimited rights afforded under DFARS 252.227-7018(b)(1), the Government shall have SBIR data rights in all other technical data or computer software generated under this contract for a period of 20 years, commencing upon contract award. Upon expiration of the 20 year restrictive license, the Government has Government Purpose Rights in the SBIR data. During the license period, the Government may not release or disclose SBIR data to any person other than its support services contractors except: (1) For evaluation purposes; (2) As expressly permitted by the contractor; or (3) A use, release, or disclosure that is necessary for emergency repair or overhaul of items operated by the Government. See DFARS clause 252.227-7018, "Rights in Noncommercial Technical Data and Computer Software – Small Business Innovation Research (SBIR) Program."

20. Is the firm proposing research utilizing human/animal subjects or recombinant DNA as described in section 3.17, 3.18, and 3.19 of the solicitation?

- (If YES, additional information required in Volume 5) If the firm intends to perform research involving 1) human subjects, 2) animal subjects, or 3) recombinant DNA molecules, please include the following information (add attachments as needed):
 - o For 1) please provide a current Federal Assurance of Compliance with Federal regulation for human subject protection and evidence of completed appropriate training in human subject protection for all involved personnel from your firm;
 - o for 2) documentation verifying review and approval for the research from the Institutional Animal Care and Use Committee; and
 - o for 3) evidence of approval by the Institutional Biosafety Committee.
 - o Until such documents are provided, the firm cannot perform any work involving associated activities. This could lead to disqualification, depending on the effort's schedule.

21. Are teaming partners or subcontractors proposed?

- (If YES, additional information required in Volume 5) If yes, be sure to include this information in the proposal Coversheet (Volume 1), Cost Volume (Volume 3) and Supplemental Cost Information (Volume 5).

22. Is the firm proposing to use foreign nationals as defined in section 3.7 of the solicitation for work under the proposed effort?

a. (If YES, additional information required in Volume 5) If yes, identify any foreign citizens or individuals holding dual citizenship expected to be involved on this project as a direct employee, subcontractor, or consultant. For these individuals, please specify their countries of origin, the type of visas or work permits under which they are performing, and the tasks they are anticipated to perform for this project, if awarded. The firm may be asked to provide additional information during negotiations r to verify the foreign citizen’s eligibility to participate the SBIR effort. Supplemental information provided in response to this paragraph will be protected in accordance with the Privacy Act (5 U.S.C. 552a), if applicable, and the Freedom of Information Act (5 U.S.C. 552(b) (6)). Proposals including the involvement of foreign nationals should include this table:

Full Name	Foreign National (Yes or No)	Country of Origin	Type of Visa or Work Permit Held	Description of Involvement (specific task(s) in the work plan)
(LIST)	(LIST)	(LIST)	(LIST)	(LIST)

b. If the cognizant Government Program Manager does not concur with the individuals’ involvement or the information is not received by the specified date/time, the proposal maybe disqualified.

23. What percentage of the principal investigator's total time will be on the project?

a. Any non-zero answer is awardable.

b. (If less than 25%, additional information required in Volume 5.) If the answer is below 25%, please describe the principal investigator’s other roles.

24. Is the principal investigator a woman? Either answer is awardable. This information is required for the SBA’s Award Information Database.

25. Is the principal investigator socially/economically disadvantaged? Either answer is awardable. This information is required for the SBA’s Award Information Database.

11. Attachments

Attachment 1 – AF X22.4 SBIR D2P2 Lifecycle Certifications (Required)

Attachment 2 – AF X22.4 SBIR CSO D2P2 AF SBIR/STTR Environment, Safety and Occupational Health (ESOH) Questionnaire (Required)

Attachment 3 – AF X22.4 SBIR CSO D2P2 DoD SBIR/STTR Programs Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (Required)

Attachment 4 – AF X22.4 SBIR CSO D2P2 DoD SBIR/STTR Programs Disclosure of Offeror's Ownership or Control by a Foreign Government (Required)

Attachment 5- Customer Memorandum MANDATORY (~~AF234-ODCSO20~~ **AFX234-DCSO2**)

Attachment 6- AF X22.2 SBIR CSO Phase II Funding Commitment Form (Required if Proposal includes non-SBIR Government funding or private investment)

Attachment 7- Security Program Questionnaire

ATTACHMENT 1 - X22.4 SBIR PHASE II D2P2 LIFECYCLE CERTIFICATIONS

These certifications must be completed and submitted with all D2P2 proposals. All questions must be answered and an authorized officer of the company must sign and date prior to submission. The document is found at <https://www.afsbirsttr.af.mil/Program/Phase-I-and-II/> under "Phase I and II Certification – Life Cycle Submissions". Include completed certifications in the proposal under Volume 5, Other Documents.

**ATTACHMENT 2 - AF X22.4 SBIR D2P2 ENVIRONMENT, SAFETY AND
OCCUPATIONAL HEALTH (ESOH) QUESTIONNAIRE**

Include a completed SBIR/STTR Environment, Safety, and Occupational Health (ESOH) Questionnaire in Volume 5, Supporting Documents, "Other" section. This form can be found at https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/SBIR_Ph_II_ESOH_Questionnaire.pdf.

ATTACHMENT 3 – X22.4 SBIR CSO

DoD SBIR/STTR Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment

Contractor's Name	
Company Name	
Office Tel #	
Mobile #	
Email	

Name of person authorized to sign:

Signature of person authorized:

Date:

The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

FAR CLAUSES INCORPORATED BY REFERENCE:

52.204-24 REPRESENTATION REGARDING CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT (AUG 2020)

52.204-25 PROHIBITION ON CONTRACTING FOR CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT (AUG 2020)

52.204-26 COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES- REPRESENTATION(DEC 2019)

ATTACHMENT 4 – DISCLOSURE OF OFFEROR’S OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT

In accordance with DFARS provision 252.209-7002, an offeror is required to disclose, by completing this form (and adding additional pages, as necessary), any interest a foreign government has in the offeror when that interest constitutes control by a foreign government, as defined in DFARS provision 252.209-7002. If the offeror is a subsidiary, it is also required to disclose any reportable interest a foreign government has in any entity that owns or controls the subsidiary, including reportable interest concerning the offeror’s immediate parent, intermediate parents, and the ultimate parent.

DISCLOSURE		
Offeror’s Point of Contact for Questions about Disclosure	Name:	
	Phone Number:	
Offeror	Name:	
	Address:	
Entity Controlled by a Foreign Government	Name:	
	Address:	
Description of Foreign Government’s Interest In the Offeror		
Foreign Government’s Ownership Percentage In Offeror		
Identification of Foreign Government(s) with Ownership or Control		

DFARS CLAUSE INCORPORATED BY REFERENCE

252.209-7009 DISCLOSURE OF OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT (JUN 2010)

ATTACHMENT 5- CUSTOMER MEMORANDUM

The Customer Memorandum must be completed and submitted with all proposals submitted against **Topic ~~AF234-ODCSO20~~ AFX234-DCSO2**. The document is found at <https://afwerx.com/open-topic/> under “Customer Memorandum Template”. Proposals submitted without a Customer Memorandum, with a Customer Memorandum prepared without using the mandatory template, or with a Customer Memorandum lacking the required signatures will not be considered. The Air Force encourages applicants to double check their submissions to make sure that both signatures remain on the document after submission through DSIP. Customer Memoranda without the required signatures are a common cause of common disqualifications.

ATTACHMENT 6- AF X23.4 D2P2 FUNDING COMMITMENT FORM

1. For Government funding:

Government Funding Organization	Government POC Name/E-mail	Amount of Funding	Year/Type Funding, e.g., R&D, O&M, etc.

2. For private investment:

Private Funding Organization	Private POC Name/ E-mail	Amount of Funding	Type of Funding, e.g., pre-sales

3. Total Government Funds Amount: \$_____

4. Total Private Fund Amount: \$_____

5. Total Requested SBIR Funding Amount: \$_____

6. Government Funding Work Plan Summary:

[INSERT brief statement describing the project portion the Government sponsor will fund, i.e., how does it support the Phase II Work Plan, additional R&D, or marketing under the proposed SBIR project?]

7. Private Funding Work Plan Summary:

[INSERT brief statement describing the project portion the investor will fund, i.e., how does it support the Phase II Work Plan, additional R&D, or marketing under the proposed SBIR project?]

ATTACHMENT 7- SECURITY PROGRAM QUESTIONNAIRE

Objective: This questionnaire is used to review the security program and practices of the institutions receiving research funding.

Intended Audience/User: Completed by Contractor/Recipient; reviewed by S&T Protection Lead.

Date Submitted:

Applicant Name:

Cage Code/SCL and level (if applicable):

Completed by Name:

Position/Title:

1. What are your physical security plans?
2. What information security processes are in place?
3. Where will information for this effort be stored? (examples: computers, cloud, file cabinets, etc.)
4. What procedures are in place for transmission/transportation of information for this effort?
5. What procedures are in place for disposal and destruction of information for this effort?
6. What procedures are in place for reproduction of information for this effort?
7. What safeguards are in place for personnel who can access information for this effort?
8. What is the plan for safeguarding GFE/GFI?
9. What procedures are in place for cybersecurity or network protection?
10. What operations security processes are in place to prevent adversaries' access to information for this effort or actions that would compromise your projects?
11. What processes are in place to deter, detect, and mitigate actions of insider threat?
12. What procedures are in place to handle if information for this effort is compromised?
13. Are you willing to provide AFRL S&T Protection training to all personnel with access annually?

Additional comments: