

**DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL SOLUTIONS
OPENING (CSO) X22.4
AMENDMENT 8
7 July 2022**

This amendment accomplishes the following revisions to the subject solicitation:

1. Section 4.4.21 is added to read as follows:

Requirement for Standard Form 424 (SF 424), 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 9. 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.

2. Attachment 9, Security Program Questionnaire, is added.

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

DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL SOLUTIONS
OPENING (CSO) X22.4
AMENDMENT 7
30 June 2022

This amendment accomplishes the following revisions to the subject solicitation:

1. The Performance of Work requirements associated with Section 5.3.3.3.b are changed to **one-third** of the total contract price or cost.
2. The Performance of Work requirements associated with Section 9.4.3.b are changed to **one-half** of the total contract price or cost.
3. The URL hyperlink associated with Attachment 5 is changed to <https://afwerx.com/sbir-sttr-program-overview/>.

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

DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL SOLUTIONS
OPENING (CSO) X22.4
AMENDMENT 6
2 June 2022

This amendment accomplishes the following revisions to the subject solicitation:

1. The formatting associated with Section 14.2 (Appendix B) has been reconfigured. No substantive changes have been made to this section. Specifically Sections 14.4.2, 14.2.15, and 14.24 have been reconfigured.

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

DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL SOLUTIONS
OPENING (CSO) X22.4
AMENDMENT 5
27 May 2022

This amendment accomplishes the following revisions to the subject solicitation:

1. Section 14.2.1.1.2. The following language is added to this section:

Identify if the solution to the problem or the opportunity benefits the Air Force or the Space Force or if the solution or opportunity could benefit either or both of the DAF services.

2. Section 14.2.1.1.6. The following language is added to this section:

Compliance and Regulatory Activities: Please indicate whether or not the proposed effort includes any of the following activities (please do not remove/delete these questions):

- (1) Will there be flight testing? (indicate Indoor/outdoor and manned/unmanned)
- (2) 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?
- (3) 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.
- (4) 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).
- (5) Will there be any weapons or munitions testing?
- (6) Does this activity use explosives, propellants, deflagrating materials, or ammunition?
- (7) Does this activity use a directed energy device (including lasers) or radio frequency radiation?
- (8) Does this activity involve hazardous materials?
- (9) Will there be any animal testing?
- (10) Does any testing meet the definition of human subject research per 32 CFR 219?
- (11) Will testing include use of toxins, human derived materials, or recombinant DNA?
- (12) Does this project involve interaction or intervention w/ humans?
- (13) Does this project involve the access to, collection, use, analysis or sharing of human data or human bio specimens?

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

DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL SOLUTIONS
OPENING (CSO) X22.4
AMENDMENT 4
20 May 2022

This amendment accomplishes the following revisions to the subject solicitation:

1. Section 4.4.19 is revised to add TEC Solutions, Inc. and Parallax as support contractors.
2. Section 9.1.2 is revised to specify a 15-page White Paper.

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

DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL
SOLUTIONS OPENING (CSO) X22.4
AMENDMENT 3
13 May 2022

This amendment accomplishes the following revisions to the subject solicitation:

1. Section 4.4.4; eligibility requirements are revised to allow for submission of proposals by SBCs that are owned in majority part by multiple VCOCs, hedge funds, or private equity firms.
2. Section 6: additional language regarding evaluation criteria inserted.
3. Section 10: additional language regarding evaluation criteria inserted.
4. Attachment 6: attachment internal numbering scheme is updated.
5. Attachment 6a: the total SBIR funding amount is changed to **\$1,250,000.00**.
6. Appendix C: all portions relating to the disqualification of SBCs that are owned in majority part by multiple VCOCs, hedge funds, or private equity firms are deleted.

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

**DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL
SOLUTIONS OPENING (CSO) X22.4
AMENDMENT 2
5 May 2022**

This amendment accomplishes the following revisions to the subject solicitation:

1. The proposal submission deadline associated with this solicitation on page 1 is changed to **9 August 2022**.
2. The Q&A period associated with this solicitation in Section 4.4.14.4 is changed to **25 July 2022**.
3. The Performance of Work requirements associated with Section 5.3.3.3.b is changed to **one-half** of the total contract value.
4. All references to slide decks in regard to Direct-to-Phase II proposals are extirpated. Slide decks are required for the Phase I submissions, White Papers are required for the Direct-to-Phase-II submissions.

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

**DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL
SOLUTIONS OPENING (CSO) X22.4
AMENDMENT 1
28 April 2022**

This amendment accomplishes the following revisions to the subject solicitation:

1. Section 5.3.2 is renamed **Applicant Technical Volume**
2. Section 5.1.2 is revised to indicate that the Sample Slide Deck is located at **Attachment 5**.
3. Section 14.1 is renamed **Phase I Technical Volume Slide Deck Instructions**.
4. **Appendix B Direct-to-Phase-II White Paper Instructions** is inserted at **Section 14.2**.
5. Appendix C Certification Questions and Coversheet Supplement is moved to **Section 14.3**.

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

**DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM COMMERCIAL
SOLUTIONS OPENING (CSO) X22.4**

20 April 2022: Issued for pre-release

18 May 2022: Begin accepting proposals

9 August 2022: Full proposals due **no later than 12:00 p.m. ET**

IAW with Section 879 of the National Defense Authorization Act (NDAA) for Fiscal Year 2017 (P.L. 114-328), Congress has authorized the Defense CSO Pilot Program. This program allows agencies to obtain solutions or potential new capabilities fulfilling requirements, closing capability gaps, or providing potential technological advancements. Consistent with FY17 NDAA Section 879, AF is soliciting proposals under a CSO. This solicitation is intended for informational purposes and reflects current planning. If there is inconsistency between the information in the CSO and resulting awards, if any, the awards' terms and conditions take precedent.

IMPORTANT

Deadline for Receipt: No exceptions will be made for the submission deadline above. AF recommends early submission, as computer traffic gets heavy near announcement closing. **Do not wait until the last minute.** AF is not responsible for missed proposal submission due to system lag or inaccessibility.

How to Submit: All proposals must be prepared and submitted through the Department of Defense (DOD) SBIR/STTR Innovation Portal (DSIP), <https://www.dodsbirsttr.mil/>. Ensure the proposal email address is accurate. AF is not responsible for missed notifications due to firms changing mailing addresses/email addresses/company points of contact after submission without notifying the AF. AF will not accept alternative means of submission.

Classified proposals are NOT accepted.

SBIR/STTR Updates and Notices:

- The CSO of record is found at <https://www.dodsbirsttr.mil/>. **Proposals must meet all CSO of record requirements at proposal submission deadline.**
- To receive AFVentures and other AF innovation opportunity notifications, visit <https://afwerx.com/afventures-overview/>

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.

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).

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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, if applicable)

Attachment 5- X22.4 Sample Slide Deck (can be accessed at: <https://afwerx.com/sbir-sttr-program-overview/>)

Attachment 6- Customer Memorandum MANDATORY Template (Direct-to-Phase II Only)

Attachment 7- AF X22.2 SBIR CSO Phase II Funding Commitment Form (Required if Proposal includes non-SBIR Government funding or private investment)

Attachment 8- Proposal Checklist

Attachment 9- Security Program Questionnaire

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 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

2.1. 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 AF Science and Technology (S&T) Strategy identifies five (5) Strategic Capabilities, listed below. Additionally, it is possible for a solution to provide a strategic capability in a previously unconsidered area. Therefore, if an offeror 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 AF, national, and global constraints. As applicable, the offeror should address the category(ies) to which the solution aligns in the Technical Volume as part of the “Defense Need” slide.

1. Global Persistent Awareness
2. Resilient Information Sharing
3. Rapid, Effective Decision-Making
4. Complexity, Unpredictability, and Mass
5. Speed and Reach of Disruption and Lethality
6. BLUE SKY*

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=155530064092>

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 AF and private sector.

2.2. 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.

2.3. Three Phase Program

The SBIR/STTR Program consists of Phases I, II, and III. The purpose of Phase I is to determine, to the extent possible, the scientific and technical merit and feasibility of ideas with commercial potential. Proposals should concentrate on RDT&E significantly contributing to proving scientific and technical feasibility and the proposed effort's commercialization potential, wherein successful completion is required to obtain further AF support, e.g., a Phase II award. Offerors should consider whether the RDT&E proposed to the AF has private sector potential, either for the proposed application or as the basis for other applications.

Phase II awards are usually based on Phase I results, including commercialization potential, relevance to Defense needs, and the Phase II proposal's technical merit. Phase II is the principal RDT&E effort, expected to produce a well-defined deliverable proposed solution prototype. In limited circumstances, Phase II awards may be made for the testing and evaluation of products, services, or technologies for use in technical or weapons systems. Phase II awardees may receive one additional, sequential Phase II award to continue the project. There is also the possibility for a third Phase II award under the Commercialization Assistance Pilot Program (CAPP). Additionally, agencies may provide opportunities to apply for Phase IIB awards seeking to bridge the gap between Phase II and III. Proposals for these opportunities, if/when available, are sought through separate, discrete solicitation cycles.

SBIR/STTR Phase IIIs include work deriving from, extending, or completing efforts made under prior SBIR/STTR funding agreements but funded by non-SBIR/STTR Program sources. This can be private sector, non-SBIR/STTR Government sources, or both. Phase III work is typically oriented towards commercializing SBIR/STTR research or technology.

2.4. Topic Information

Table 1- Consolidated Topic Information

Topic Number(s)	Topic Title	Base Cost Max	Base Duration Max (in months)
X224-OCSO1	Phase I Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear Air Force or Space Force Stakeholder Need	\$75,000.00	3
X224-ODCSO1	Direct-to-Phase-II Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear Air Force Stakeholder Need	\$1,250,000.00	21
X224-ODCSO2	Direct-to-Phase-II Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear Space Force Stakeholder Need	\$1,250,000.00	21

3. DEFINITIONS

The following definitions from the SBA SBIR/STTR Policy Directive, the Federal Acquisition Regulation (FAR), and 10 USC 2371b apply to this CSO:

3.1. Certified HUBZone Small Business Concern

An SBC 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).

3.2. Commercial Solutions Opening (CSO)

A competitive procedure Contracting Officers may use to acquire innovative commercial items, technologies or services.

3.3. Commercialization

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

3.4. Essentially Equivalent Work

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

3.5. Export Control

The International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through projects with military or dual-use applications beyond fundamental research. Fundamental research is basic and applied research ordinarily published and shared broadly within the scientific community. More information is available at https://www.pmdtc.state.gov/?id=ddtc_public_portal_itar_landing.

3.6. 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 USC § 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.

3.7. 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.

3.8. 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.

3.9. 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 two (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 two (2)-year period.

3.10. Fraud, Waste and Abuse

- a. **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.
- b. **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.
- c. **Abuse** includes any intentional or improper use of Government resources, such as misuse of rank, position, or authority or resources.

3.11. Funding Agreement

Any contract, grant, cooperative agreement, or Other Transaction for Prototype 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.

3.12. Innovative

- a. Any new technology, process, or method, including research and development; or

- b. Any new application of an existing technology, process, or method.

3.13. Other Transaction

Refers to the type of Other Transaction Agreement (OTA) that may be placed as a result of this CSO. This type of OT is authorized by 10 U.S.C 2371b for prototype projects directly relevant to enhancing the mission effectiveness of military personnel and the supporting platforms, systems, components, or material proposed to be acquired or developed by the DoD, or for the improvement of platforms, systems, components, or materials in use by the armed forces. This type of OTA is treated by DoD as an acquisition instrument, commonly referred to as an “other transaction” for a prototype or a Section 2371b “other transaction.” The definition of a "prototype project" in the context of an OT is as follows: a prototype project addresses a proof of concept, model, reverse engineering to address obsolescence, pilot, novel application of commercial technologies for Defense purposes, agile development activity, creation, design, development, demonstration of technical or operational utility, or combinations of the foregoing. A process, including a business process, may be the subject of a prototype project.

This authority also allows for a noncompetitive, follow-on OT for Production to an OT for Prototype competitively awarded and successfully completed. This statute requires advanced consideration be given and notice be made for follow-on OT for Production potential. It is a necessary precondition for such a follow-on award. As such, this solicitation document and resulting OTs for Prototype will include notice follow-on OTs for Production are possible.

3.14. Performance Benchmarks for Progress Toward Commercialization

IAW the SBA SBIR/STTR Policy Directive Section 4(a)(3), DoD’s established benchmark threshold applies only to Phase I applicants with more than 20 awards in the prior five fiscal years. The ratio of Phase I awards to Phase II awards received during the period must be at least 4:1. Additional information can be found at <https://www.sbir.gov/performance- benchmarks>.

3.15. Principal Investigator

The principal investigator/project manager is the 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 SBC 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 SBC. 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 AF SBIR Program Manager/Coordinator. Further, an SBC may replace the principal investigator on an SBIR Phase I or Phase II award, subject to approval in writing by the Contracting Officer.

3.16. Proprietary Information

Proprietary information includes trade secrets, as well as commercial or financial information.

3.17. Research Involving Animal Subjects

“Activities involving animal subjects shall be conducted in accordance with DoDI 3216.01, “Use of Animals in DoD Programs”; 9 CFR parts 1-4; National Academy of Sciences Publication “Guide for the Care & Use of Laboratory Animals” as amended; Department of Agriculture rules implementing the Animal Welfare Act (7 U.S.C. §§ 2131-2159); and other applicable Federal/DoD/local laws, regulations, and instructions.

“Animal use” protocols apply to activities meeting 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) being used or 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 applicability to work involving animals.

3.18. Research Involving Human Subjects

All research involving human subjects shall be conducted in accordance with 32 C.F.R. § 219 “The Common Rule”, 10 USC §980 “Limitation on Use of Humans as Experimental Subjects”, and DoDD 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. Offerors 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 (DoDD 3216.02), recruitment of military research subjects (DoDD 3216.02), and informed consent and surrogate consent (10 U.S.C. § 980) and chemical and biological agent research (DoDD 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, web-use 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 DoDD 3216.02 for definitions of these terms and more information about the applicability of DoDI 3216.02 to research involving human subjects.

3.19. 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/2013/06/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.

3.20. Research or Research and Development (R/R&D)

- 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, systems, or methods, including prototype or process design, development, and improvement to meet specific requirements.
- d. Intended broadly to include the work performed under a funding agreement with the government. It includes R&D in all fields, including the physical sciences, engineering, etc. Research is systematic study directed toward fuller scientific knowledge or understanding of the subject studied. Development is systematic use of the knowledge and understanding gained from research, for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes.

3.21. 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).

3.22. Small Business Concern (SBC)

A concern meeting the requirements set forth in 13 CFR. § 121.702. 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.)

3.23. Subcontract

A subcontract is any agreement, other than one involving an employer-employee relationship, entered into by an awardee of a funding agreement. The funding agreement calls for supplies or services to perform the basic award. This includes consultants.

3.24. 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.

3.25. Test and Evaluation

Test and Evaluation: Phase II and Phase III awards may be made for testing and evaluation of products, services or technologies for use in technical or weapons systems. Use of this authority will be subject to compliance with fiscal law.

3.26. United States

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.

3.27. Women-Owned Small Business Concern

An SBC 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.

4. PROPOSAL FUNDAMENTALS

This section applies to all proposals.

4.1. 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.

4.2. Offeror Eligibility and Performance Requirements

- a. Each proposer must qualify as a small business concern IAW 13 C.F.R §§ 701-705 at time of award and certify to this on the proposal Cover Sheet. SBIR/STTR eligibility requirements are unique and do not correspond to other small business programs (see Section 3.22 of this CSO). Offerors must meet eligibility requirements for Small Business Ownership and Control IAW 13 CFR § 121.702 and Section 4.4 of this CSO.
- b. A minimum of two-thirds of the research and/or analytical work in Phase I must be conducted by the proposing firm. For Phase II, a minimum of one-half (50%) of the research and/or analytical work must be performed by the proposing firm. The work percentage is measured by both direct and indirect costs.
- c. 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 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 with another organization.
- d. All R/R&D work must be performed by the small business concern and its subcontractors in the U.S.
- e. **Benchmarks.** Offerors 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.
 1. For all offerors 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.

2. For all offerors/offerors 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.
- Companies' benchmark information is not available to the public.

4.3. 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. Offerors/Offerors must disclose joint ventures with existing (or planned) relationships/partnerships with any foreign entity or any foreign government-controlled companies.

4.4. Administrative Proposal Requirements

The AF 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 AF reserves the right to disqualify proposals for failing to meet the requirements below.**

4.4.1 Registrations and Certifications.

Proposing firms must be registered in the Defense SBIR/STTR Innovation Portal (DSIP) in order to prepare and submit proposals. All users will be required to register for a login.gov account and link it to their DSIP account. To register in Login.gov, click the Login/Register button in the top right corner on the DSIP Submissions homepage and follow the steps to register. 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, here: <https://www.dodsbirsttr.mil/submissions/learning-support/training-materials>.

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 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.

It is recommended that you complete your Login.gov setup as soon as possible to avoid any delays in your proposal submissions.

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. **Firms that do not have active SAM.gov registrations on the date of proposal receipt will be disqualified for awards.**

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 and is viewable in the system. 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/>. Firms shall also verify "Purpose of Registration" is set to ALL CONTRACTS, not just grants. Firms registered to compete for grants only at the time of proposal submission will not be considered for award. Addresses must be consistent between the proposal and SAM at award. Previously registered firms are advised to access SAM to ensure all company data is current before proposal submission and, if selected, award.

In addition to the standard Federal and DoD procurement certifications, the SBA SBIR/STTR Policy Directive requires certain information be collected from firms at award and during the award life cycle. Each firm will be asked to provide this information at award (Phase I and II and D2P2, prior to receiving 50% of the total award amount (Phase II and D2P2), and prior to final payment (Phase I and II and D2P2).

4.4.2 Prior, Current, or Pending Support of Similar Proposals or Awards

It is permissible, 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 (see Section 3.4).

4.4.3 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.

4.4.4 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 both Phase I and Phase II for additional information regarding SBCs owned in majority part by multiple VCOCs, hedge funds, or private equity firms.**

4.4.5 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. Proposing firms should contact the cognizant Ethics Counselor from the employee's Government agency for further guidance if in this situation.

4.4.6 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>.

4.4.7 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.**

4.4.8 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.**

4.4.9 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.

4.4.10 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.**

4.4.11 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 AF via AF SBIR/STTR One Help Desk.**

Feedback requests will be provided to offerors with proposals determined “Not Selectable” ONLY. The notification letter will include instructions for submitting a feedback request. Offerors 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, offerors 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 offerors 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 of the applicant's proposal may be provided to the offeror. The identity of the reviewer shall not be disclosed. Requests may be sent to the address above. 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.**

It is anticipated 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.

4.4.12 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 AF Legal Operations Agency within one day of filing. Protests of a selected firm's small business status should be directed to the SBA.

4.4.13 Phase II and Direct to Phase II Award Information

4.4.13.1 **Number of Awards.** The number of awards will depend upon funds availability. The Government reserves the right to make no awards under this solicitation. The Federal Government is not responsible for costs incurred before award receipt.

4.4.13.2 **Type of Funding Agreement.** Phase II 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.

normal profit margins provided to profit-making firms for R/R&D work.” Therefore, zero dollar profit proposals cannot be awarded. Awards may be negotiated; award type is at the Contracting Officer’s discretion.

4.4.13.3 Average Dollar Value. Maximum Phase II contract value is found in Section 2.4. **Any proposal over the threshold dollar amount for SBIR funds will be disqualified.**

4.4.13.4 Timing. The Government intends that peer review, proposal selection, negotiations, and award will be complete within 180 calendar days of solicitation close.

4.4.14 Questions about this CSO and CSO Topics

a. General SBIR Questions/Information

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.

3. **Direct Contact with Topic Authors.** From April 20, 2022 to May 18, 2022, this CSO is issued for pre-release with the names of the topic authors and their phone numbers and e-mail addresses. During the pre-release period, proposing firms have an opportunity to contact topic authors by telephone or e-mail to ask technical questions about specific CSO topics. Questions should be limited to specific information related to improving the understanding of a particular topic’s requirements. Proposing firms may not ask for advice or guidance on solution approach and you may not submit additional material to the topic author. If information provided during an exchange with the topic author is deemed necessary for proposal preparation, that information will be made available to all parties through Topic Q&A. After this period questions must be asked through Topic Q&A as described below.
4. **Topic Q&A.** Once DoD begins accepting proposals on May 18, 2022, no further direct contact between offeror/offerors and topic authors is allowed unless the Topic Author is responding to a question submitted during the pre-release period. However, offeror/offerors 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 **April 20, 2022** and closes to new questions on **July 25th, 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.

- a. **AF SBIR/STTR Special Topic Updates and Notices.** To receive notifications about AF Ventures and other AF innovation opportunities, please visit <https://afwerx.com/afventures-overview/>.

4.4.15 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 offeror’s idea has sufficient scientific and technical feasibility and merit despite the lack of Phase I award.

4.4.15.1. 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.

4.4.15.2. **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).

4.4.15.3. **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.

4.4.15.4. **Special Circumstances:**

Offerors 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.

4.4.16 **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.

4.4.17 **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.

4.4.18 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:

- Information and technical assistance;
- Matching funds to SBIR award recipients;
- 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.

4.4.19 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 AF SBIR/STTR Contracting Officer listed in Section 4.4.12 with concerns regarding the listed contractors.

4.4.20 Innovation in Manufacturing

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

4.4.21 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.

4.4.22 Requirement for Standard Form 424 (SF 424), 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 9. 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.

4.4.23 Proposal Preparation Tips

Those responding to this CSO should note the proposal preparation tips listed below:

- 4.4.23.1 Read and follow all CSO instructions.
- 4.4.23.2 Register the firm on the secure, password-protected DSIP system and, as instructed, prepare the firm's submission. The Air Force will accept proposals submitted via DSIP.
- 4.4.23.3** Register in the System for Award Management (SAM), <https://www.sam.gov/>. Firms not registered in SAM.gov are ineligible for award. Verify the firm's "Purpose of Registration" is set to ALL CONTRACTS, not solely grants and the firm's address matches the proposal and SAM.gov information. **Begin this process early. as it can take more than 30 days for registration to be issued or updated.**
- 4.4.23.4 Register the firm with SBA's Company Registry at www.sbir.gov and provide the SBA SBC Identification for each proposal Cover Sheet submitted in response to this CSO.
- 4.4.23.5 Ensure cost adheres to Section 5.3.4 (Phase I) or 9.4.4 (D2P2) of this CSO and the Cover Sheet cost matches the Cost Volume. The Cost Volume should ONLY include that work which will be conducted as part of the Phase I or Direct-to-Phase II effort (e.g. do not include Phase III or privately funded work); conversely, if additional government funding will be provided to AFRL/SBRK for inclusion in the award (Phase II only), ensure that it IS represented in the Cost Volume.
- 4.4.23.6 Ensure the Project Abstract and other Cover Sheet content DOES NOT contain proprietary information.
- 4.4.23.7 Mark proprietary Technical Volume information as instructed in 5.3.2 (Phase I) or 9.4.2 (D2P2).
- 4.4.23.8 Ensure Technical Volume content includes the items in Section 5.3.2 (Phase I) or 9.4.2 (D2P2).
- 4.4.23.9 Ensure the proposal is submitted to the correct Component (AFWERX or AFRL) and topic number.

The AF recommends completing submission early, as computer traffic gets heavy near the announcement closing and could slow down the system. **Do not wait until the last minute. The AF will not be responsible for proposals not submitted due to system lag or inaccessibility.** Please ensure the email address listed in the proposal is current and accurate. The AF is not responsible for ensuring notifications are received by firms changing mailing addresses/e-mail addresses/company points of contact after proposal submission without proper notification. Changes after proposal submission or award (if selected) for Phase I and II shall be sent to usaf.team@afsbirsttr.us. The Government will only accept changes for proposals that were properly submitted prior to the submission deadline through the DSIP portal.

5. PHASE I PROPOSAL

5.1. Introduction

A complete proposal consists of the following:

0. Registration

- DUNS Number
- Commercial or Government Entity (CAGE) Code
- SBA Small Business Concern (SBC) Control ID

1. Volume 1: Proposal Cover Sheet

- CAGE, DUNS
- Certification Questions
- Business Information
- Proposal Information
- Contact Information
- 2. Volume 2: Technical Volume**
 - Up to 25 Page Slide Deck (Sample slide deck at Attachment 5.)
- 3. Volume 3: Cost Volume**
 - Direct Labor Costs

- Direct Material Costs
- Other Direct Cost
- 4. Volume 4: Company Commercialization Report**
- 5. Volume 5: Supporting Documents**
 - Coversheet Supplement
 - Supplemental Cost Information
 - Resumes of Key Personnel
 - *Non-Proprietary* Work Plan
 - DoD Funding Agreement Certification (Signed)
 - DD Form 2345, Militarily Critical Technology Data Agreement
 - Letters of Support
 - Allocation of Rights
 - Lifecycle Certification
 - Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)
 - Foreign Ownership or Control Disclosure (Refer to section 5.3.7 subparagraph a. to determine applicability)
- 6. Volume 6: Fraud, Waste and Abuse Training**

NOTE: Refer to **Table I** for AFWERX topic submission requirements. Requirements for other topics may be found in the topic material in Section **Error! Reference source not found.** Proposals shall be submitted to DSIP. Upon Proposal Cover Sheet creation, a proposal number will be assigned. Record this number for future reference. The proposer may add volumes or modify the Proposal Cover Sheet until the CSO closes.

The Government is not obligated to make any Phase I awards nor is it responsible for offeror expenditures prior to award. All awards are subject to successful negotiations and funds availability.

All offerors are required to submit Volume 4: Company Commercialization Report (CCR), Volume 5: Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment, Volume 5: Foreign Ownership and Control Disclosure (Refer to Section 5.3.7 subparagraph a. to determine applicability), and Volume 6: Fraud, Waste and Abuse training.

5.2. Marking Proprietary Proposal Information

Offerors including data in their proposals they do not want disclosed to the public, or used by the Government except for evaluation purposes, shall:

- a. 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 offeror 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
- b. 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.

5.3. Phase I Proposal Instructions

Phase I should address the topic solution's technical feasibility. The period of performance shall be three (3) months, and the award shall not exceed \$75,000.

5.3.1. Proposal Cover Sheet (Volume 1)

Prepare the Proposal Cover Sheet in DSIP. The Cover Sheet must include a brief technical abstract of no more than 200 words describing the proposed R&D project with a discussion of anticipated benefits and potential commercial applications. **Do not include proprietary or classified information in the Proposal Cover Sheet.** Technical abstracts are submitted to the Office of the Secretary of Defense (OSD) for public release. Once the Cover Sheet is saved, the system will assign a proposal number. **Retain that number for future reference.** The cover sheet may be modified as often as necessary until the CSO closes.

5.3.2. Applicant Technical Volume (Volume 2)

1. 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 Slide Deck is limited to twenty-five (25) slides; slides in excess of the 25-slide limitation will not be considered for review or award.

Layout: Number all proposal slides consecutively. Each slide should contain the company name, topic number, and proposal number assigned by DSIP when the Cover Sheet was created.

2. Content

There are 11 required content slides and 6 additional slides that are required only if applicable to the proposal. The remaining slides are not required and may be used at the proposer's discretion. **Proposals without the required slides will not be considered.**

A sample slide deck is provided at Attachment 5. The white paper is optional and the content is at the offeror's discretion; therefore, a template is not provided.

5.3.3. Cost Volume (Volume 3)

Complete the Cost Volume in the format shown in the Cost Breakdown Guidance by using the online cost volume form on DSIP. It is possible not all items in the cost breakdown guidance will apply to the proposed project. If not, there is no need to provide information them. Enough information must be provided to understand the company's plan for use of the requested funds if selected. The Cost Volume must be adequate to enable AF personnel to determine the purpose, necessity, and reasonableness of each cost element. The Cost Volume will cover two months of technical effort (see

Table I) and one month for reporting. Provide sufficient detail (1-4 below) on how funds will be used if the contract is awarded. The itemized listing may be placed in the “Explanatory Material” section of the on-line Cost Volume (if enough room), or in Volume 5, Supporting Documents, under the “Other” dropdown options. Note: Only one file can be uploaded to DSIP.

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 also necessary.
2. Direct Material Costs: Justify costs for materials, parts, and supplies with an itemized list of types, quantities, and price and, where appropriate, purpose. If proposing direct material costs, justification information (to include 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, 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.
 - a. Travel: Include travel costs in “Other Direct Costs.” Travel costs must relate to the needs of the project. Break out travel cost by trip, with the number of travelers, airfare, per diem, lodging, etc. Reflect the number of trips required, as well as the destination and purpose of each trip. Recommend budgeting at least one (1) trip to the Air Force location managing the contract. For the special topic, greater travel expectations will be required as noted 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 your actual travel cost may differ from your proposed travel; however, this information allows the Contracting Officer to ensure travel costs are not excessive.
 - b. Subcontracts: Include subcontract/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 the offeror intends such involvement, describe in detail and include information in the Cost Volume. The proposed total of all consultant fees, facility leases, and/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 offeror must include a Statement of Work (SOW) with a corresponding detailed Cost Volume for each planned subcontract.
 - c. 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.
4. 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 Contracting Officer, be advantageous to the Government and relate directly to the specific effort. They may include such items as innovative instrumentation and/or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with the AF, unless it is determined

that transfer of title to the contractor would be more cost effective than recovery of the equipment by the Government.

PLEASE ROUND ALL COSTS TO THE NEAREST DOLLAR!

NOTE: If no exceptions are taken to an offeror's proposal, the Government may award a contract with only clarifications. Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. If there are questions regarding the award document, contact the Phase I Contracting Officer listed on the selection notification.

5.3.4. 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 5 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 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:

- a. 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.
 - 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.
 - **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.

- b. 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.
- 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.
 - 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.
- c. 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.

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.**

5.3.5. Supporting Documents (Volume 5)

This Volume is provided for small businesses to submit additional documentation to support the Technical (Volume 2) and the Cost (Volume 3) Volumes. If combining .pdf documents, ensure digital signatures are not stripped.

All offerors are REQUIRED to submit the following documents to Volume 5:

-Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)

-Foreign Ownership or Control Disclosure (REQUIRED - Refer to section 5.3.7 subparagraph to determine applicability.)

Additional documents acceptable for inclusion in Volume 5 below. PLEASE NAME UPLOADED INFORMATION AS TITLED BELOW:

1. **Coversheet Supplement:** Depending on answers to the online coversheet questions, more information may be needed. The list of questions, and additional information **required** based on certain responses is provided at Appendix B. Failure to provide supplemental information when required may result in disqualification.
2. **Supplemental Cost Information:** This document is used to provide additional information regarding the online Cost Volume (Volume 3) form. Supplemental Cost Information detail must enable AF personnel to determine each Cost Volume element's purpose, necessity and reasonability. Information include the following, where applicable:

- a. **Direct Labor:** For significant costs, e.g., large number of hours, very high hourly wages, significant labor overhead/fringe rates, etc., provide justification. Helpful resources for determining average rates are https://www.bls.gov/oes/current/oes_nat.htm.
- b. **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.
- c. **Travel included in Other Direct Costs:** If travel was proposed as an Other Direct Cost, funding requested must 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>.
- d. **Special Tooling/Test Equipment/Material:** While special tooling/ test equipment/material costs may be included for Phase I, it 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 fic 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.
- e. **Copies of Subcontract Agreements:** If the offeror 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 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 offeror must include a Statement of Work (SOW) with a corresponding, detailed Cost Volume for each planned subcontract.**
- f. **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.**

- g. **Cost Match/Share:** Cost match/share is NOT permitted for Phase I proposals under this CSO.

NOTE: When a proposal is selected for award, the Government CO may request further documentation to substantiate costs.

3. **Resumes of Key Personnel:** Full resumes, including a publications list, for the PI and other key technical personnel shall be included in Volume 5.
4. **Non-Proprietary Work Plan:** Please include a complete, standalone, non-proprietary work plan in this section, free of any proprietary markings. It will likely be attached to the final contract, if selected. Failure to provide the work plan as requested will necessitate a new document and delay contract award. Your work plan should indicate the planned tasks, how and where work will be conducted, a schedule of major events, and the final product(s) to be delivered. All Phase 1 contracts should include the following deliverables: 1) Preliminary Report, including a 1 slide project summary, 2) Final report. Provide explicit, detailed discussion of methods planned to achieve each objective or task. Describe the specific tasks, durations, descriptions, and performers to complete the tasks. Be sure to include any subcontractors efforts in the SOW as well.
5. **DoD Funding Agreement Certification (Signed):** A Funding Agreement Certification must be completed, signed, and included in Volume 5 at proposal submission. This certification can be found at: <https://www.afsbirsttr.af.mil/Program/Phase-I-and-II/> under “Phase I and II Certification – Funding Agreement.”
6. **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/LogisticsApplications/JCP/DD2345Instructions.aspx>. Approval of the DD Form 2345 will be verified if proposal is chosen for award.
7. **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 and defense 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. **While there is no specific format for Letters of Support**, some specific items that are suitable for inclusion in a Letter of Support are: the name of organization that is interested in the solution, the problem that stands to be solved by the proposed solution, the impact of that problem being solved (referencing dollars, hours, lives saved, etc.), and the signature of the letter provider. All letters should be uploaded in a single .pdf file organized logically. NOTE: When combining .pdf documents, ensure digital signatures are not stripped
8. **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. Companies should identify if the partnering Research institution requires a fundamental research determination. See example at <https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/Model%20agreement%20for%20the%20allocation%20of%20rights.pdf>
9. **Lifecycle Certification:** See example at <https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase I-II/SBIR-STTR-Phase-I-II-Life Cycle Certifications.pdf>

5.3.6. 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 certifications 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 the supporting documents sections of Volume 5 for all proposal submissions.**

The effort to complete the required certification clauses includes due diligence on the part of the proposer and for any contractors that may be proposed as a part of the submission including research partners and suppliers. Therefore, offerors are strongly encouraged to review the requirements of these certifications early in the proposal development process. Failure to submit or complete the required certifications as a part of the proposal submission process may be cause for rejection of the proposal submission without evaluation.

5.3.7. Foreign Ownership or Control Disclosure

Offerors 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.

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

The Fraud, Waste and Abuse (FWA) training is **required** for Phase I and Direct to Phase II proposals. 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.

5.3.9 Customer Memorandum Inclusion of a Customer Memorandum will be mandatory for the Phase II proposal. A mandatory template has been made available at <https://www.afsbirsttr.af.mil/Program/Phase-I-and-II/>. This Customer Memorandum formally captures interest from the empowered and committed AF end-users and customers. The Customer Memorandum is also used for technical review purposes as discussed in Section **Error! Reference source not found.**, Phase II Review Criteria. Phase II proposals without a signed Customer Memorandum will not be considered for award.

6. PHASE I EVALUATION CRITERIA

All Phase I 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 proposals under a single solicitation provided the successful proposals do not contain essentially equivalent work. AF is under no obligation to fund a specific number of Phase I proposals and may elect to award none.

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.
 - 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.
 - Phase II follow-on commitments for the subject research are also evidence of commercialization potential.
2. The appropriateness, relevance, and specificity of an identified Defense Need. While not required, signed letters of support from AF customers and/or end-users may be indicators of the appropriateness, relevance, and specificity of an identified Defense Need (Content discussed in 5.3(b)(7)). The adequacy of the proposed effort and its relationship to fulfilling the identified Defense Need. The presence of previous investment (basic research grants, etc) directly supporting the proposed effort may also be indicative of the relevance and depth of an AF need.
3. The soundness, technical merit, 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.

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 Air Force will accept proposals from Small Business Concerns (SBCs) that are owned in majority part 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. In accordance with 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 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:

- National security concerns;
- Pursuant to EO 13329, high priority is accorded to proposals advancing innovation in U.S. small business manufacturing
- 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 project. The Act encourages eligible US-owned SBCs accomplishing biomedical research in the areas of energy efficiency or renewable energy systems to submit proposals.

7. PHASE II PROPOSAL

This section applies to Phase II proposals. A more specific proposal request will be provided to all Phase I awardees as described in Section 7.1. The AF reserves the right to modify Phase II submission requirements. Should requirements change, all Phase I awardees will be notified. The AF also reserves the right to change administrative procedures to improve program management.

7.1. Introduction

Phase II is the demonstration of technology found feasible in Phase I. Only Phase I awardees are eligible to submit Phase II proposals. **Phase I awardees may only submit one Phase II proposal per successful Phase I effort.** All successful Phase I awardees will be sent a notification with the Phase II submission date/time and detailed proposal preparation instructions.

7.2. Proposal Provisions

IMPORTANT -- While it is permissible, with proper notification, to submit identical proposals or proposals containing a significant amount of essentially equivalent work for consideration under numerous Federal program solicitations, it is unlawful to enter into contracts or grants requiring essentially equivalent effort. If there is any question concerning this, it must be disclosed to the soliciting agency as early as possible. If a proposal submitted for a Phase II effort is substantially the same as a previously funded proposal, is now being funded, or is pending award with another Federal Agency, DoD Component, or AF organization, it must be noted on the Cover Sheet and required information included in Section 5.3.1.

Due to agency specific limitations on funding and number of awards made to a particular firm per topic using SBIR/STTR funds, Head of Agency determinations are now required before another agency may make an award under that topic. This limitation does not apply to Phase III funding. Please contact the original sponsoring agency before submitting a Phase II proposal to an agency other than the original topic sponsor.

Section 4(b)(1)(i) of the SBIR/STTR Policy Directive states, at the agency's discretion, projects awarded a Phase I under a SBIR solicitation may transition to STTR in Phase II and vice versa. A firm wishing to transfer from one to the other must contact the designated technical monitor to discuss the basis and the agency's ability to support it. Agency disapproval of a change request shall not be grounds for granting relief from contractual performance requirements. All approved transitions from STTR to SBIR requiring a research institution's removal and revision to work percentages must be noted in the Phase II award or modification signed by the Contracting Officer.

7.3. How to Submit

Phase I awardees will be notified when the Phase II submission period opens. Each Phase II proposal must be submitted through the DSIP, <https://www.dodsbirsttr.mil/>. Each proposal submission must contain a Proposal Cover Sheet, Technical Volume, Cost Volume, Company Commercialization Report, Supporting Documents and Fraud, Waste and Abuse Training. The preferred format for proposal submission is.pdf. Graphics must be distinguishable in black and white. Please virus-check all submissions.

The term "Command" on the Cover Sheet refers to the soliciting AF organization, which should be AFWERX. **Proposals submitted to the wrong Command will not be considered for award.**

NOTE: The Government is not obligated to make any Phase II awards nor is it responsible for offeror expenditures prior to award. All awards are subject to successful negotiations and funds availability.

8. PHASE II REVIEW CRITERIA

All Phase II 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. Phase I companies can submit NO MORE THAN one Phase II proposal per Phase I award. AF is under no obligation to fund a specific number of Phase II proposals and may elect to award none.

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

1. The potential for Government or private sector commercialization and benefits expected to accrue from commercialization.
 - 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.
 - 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 Air Force Customer Memorandum, or private sources, as documented through a letter of commitment, are evidence of commercialization potential.
 - A sound transition strategy in the Air Force Customer Memorandum is also evidence of commercialization potential.
2. The appropriateness, relevance, and specificity of an identified Defense Need. A complete and compelling Air Force Customer Memorandum (using the mandatory template provided at Attachment 2), signed by an appropriate end-user and customer, indicates the appropriateness, relevance, and specificity of an identified Defense Need. While not required, signed letters of interest from other government personnel (content defined in section 10) 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. The presence of previous investment (basic research grants, etc) directly supporting the proposed effort may also be indicative of the relevance and depth of an AF need.
3. The soundness, technical merit, 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.

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).

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:

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

9. DIRECT TO PHASE II PROPOSAL

9.1. 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 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 Air Force end-users' and customers' need. 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).

Offerors must adequately document completion of the Phase I feasibility requirement*. Offerors 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, AF is seeking proposals emphasizing technologies' dual-use applications and commercialization.

NOTE: The offeror shall provide information to enable the agency to make the 15 U.S.C. 638(cc) determination of scientific and technical feasibility and merit. Offerors 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 AF will not review the Phase II proposals if it is determined the offeror 1) fails to demonstrate technical merit and feasibility are established or 2) the feasibility documentation does not support substantial performance by the offeror and/or the PI. Refer to the Phase I 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.**

A complete proposal consists of the following:

- 0. Registration**
 - DUNS Number
 - Commercial or Government Entity (CAGE) Code
 - SBA Small Business Concern (SBC) Control ID
- 1. Volume 1: Proposal Cover Sheet**
 - CAGE, DUNS
 - Certification Questions
 - Business Information
 - Proposal Information
 - Contact Information
- 2. Volume 2: Technical Volume**
 - 15-Page White Paper
- 3. Volume 3: Cost Volume**
 - Direct Labor Costs
 - Direct Material Costs
 - Other Direct Costs
 - Second Phase Commitment and/or Cost Share
- 4. Volume 4: Company Commercialization Report**
- 5. Volume 5: Supporting Documents**
 - Signed Customer Memorandum
 - Coversheet Supplement
 - Supplemental Cost Information

- Resumes of Key Personnel
- *Non-Proprietary* Work Plan
- DoD Funding Agreement Certification (Signed)
- DD Form 2345, Militarily Critical Technical Data Agreement (if applicable)
- Allocation of Rights (optional)
- Lifecycle Certification (required prior to award, if selected)
- SBIR/STTR Environment, Safety and Occupational Health (ESOH)
- Phase II Funding Commitment Documentation
 - Private Investment Letter (if applicable)
- Additional Letters of Support (if applicable)
- Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)
- Foreign Ownership or Control Disclosure (Refer to section 9.4.7 subparagraph to determine applicability)

6. Volume 6: Fraud, Waste and Abuse Training

Refer to Table 1 for AFWERX topic submission requirements. Information for other topics may be found in the individual material. Proposals shall be submitted to DSIP. Upon initiation of a Proposal Cover Sheet, a proposal number is assigned. Please retain the proposal number for future reference. The proposer may add volumes or modify the Proposal Cover Sheet until the CSO closes.

Beginning with the X21.1 SBIR CSO, all offeror/offerors are required to submit Volume 4: Company Commercialization Report (CCR), Volume 5: Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment, Volume 5: Foreign Ownership or Control Disclosure (Refer to section 9.4.7 subparagraph to determine applicability), and Volume 6: Fraud, Waste and Abuse training.

The Government is not obligated to make D2P2 awards nor is it responsible for offeror expenditures prior to award. All awards are subject to successful negotiations and funds availability.

9.2. Marking Proprietary Proposal Information

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

1. 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 offeror 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
2. 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.

9.3. Governmental and Private Funding Commitments

Offerors 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.

9.4. Direct to Phase II Proposal Instructions

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

9.4.1. 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.

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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 [AF problem] by providing [advantage], to help [AF end-user organization] accomplish [AF 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 AF 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 AF 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.

9.4.2. Technical Volume (Volume 2)

1. 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.

9.4.3. 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 AF to understand the company's plan to utilize the requested funds, i.e., the purpose, necessity, and reasonableness of each expenditure.

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 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.
 - a. 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.
 - b. Subcontracts: Include subcontract/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-half** 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 offeror must include a Statement of Work (SOW) with a corresponding detailed Cost Volume for each planned subcontract.
 - c. 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
 - d. 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. They 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 offeror’s proposal, the Government may award a contract with only clarifications. Therefore, the initial proposal should contain an offeror’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.

9.4.4. 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 5 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:

6. Log into the firm account at <https://www.sbir.gov/>.
7. Navigate to My Dashboard > My Documents to view or print the information currently contained in the Company Registry Commercialization Report.
8. 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.**
9. Click the "Company Commercialization Report" PDF under the My Documents section of the dashboard to download a PDF of the CCR.
10. Upload the PDF of the CCR (downloaded from SBIR.gov in 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:

- d. 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.
 - 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.
 - **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.
- e. 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.

- 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.
 - 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.
- f. 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.

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.**

9.4.5. Supporting Documents (Volume 5)

Used 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 offerors are **REQUIRED** to submit the following documents to Volume 5:

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

Documents acceptable for inclusion in Volume 5 are:

1. **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.
2. **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 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:
 - a. 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.
 - b. **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.

- c. **Travel included in Other Direct Costs:** If travel was proposed as an Other Direct Cost, funding requested must 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>.
- d. **Special Tooling/Test Equipment/Material:** While special tooling/ test equipment/material costs may be included for Phase I, it 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.
- e. **Copies of Subcontract Agreements:** If the offeror 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 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 offeror must include a Statement of Work (SOW) with a corresponding, detailed Cost Volume for each planned subcontract.**
- f. **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.**
- g. **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.
- h. **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, offerors 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.

- 3. **Resumes of Key Personnel:** Full resumes, including a publications list, for the Primary Investigator and other key technical personnel shall be included.
- 4. **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.

5. **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.”
6. **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/LogisticsApplications/JCP/DD_2345Instructions.aspx. Approval of the DD Form 2345 will be verified if proposal is chosen for award.
7. **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>
8. **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>.
9. **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.
10. **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.

9.4.6. 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, offerors 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.

9.4.7. Foreign Ownership or Control Disclosure

Offerors 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.

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

The Fraud, Waste and Abuse (FWA) training is **required** for Phase I and Direct to Phase II proposals. 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.

10. DIRECT TO PHASE II (D2P2) REVIEW 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.

Proposals will be peer reviewed based on the criteria below. Selections will represent best value to the Government considering the following factors listed in descending order of importance:

1. The appropriateness and relevance in fulfilling a need of the DAF. Appropriate and relevant proposals will provide an account of how they meet an Air Force technical area need. A signed customer memorandum and/or letter of support from other Government personnel may be indicators of appropriateness and relevance.
2. 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.
3. The potential for Government or private sector commercialization and benefits expected to accrue from commercialization. The SBC's record of commercializing SBIR or other research, the existence of Phase II follow-on commitments for the subject research, and matching funding, whether from Government or private sources, are evidence of commercialization potential.

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 Air Force will accept proposals from Small Business Concerns (SBCs) that are owned in majority part 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:

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

11. CONTRACTUAL REQUIREMENTS

11.1. Other Contractual Requirements

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.

- a. **Standards of Work.** Work performed under the award must conform to professional standards.
- b. **Inspection.** Work performed under the award is subject to Government inspection and evaluation at all reasonable times.
- c. **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.
- d. **Default.** The Government may terminate the award for failure to perform the negotiated effort.
- e. **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.
- f. **Disputes.** Any award dispute not resolved by agreement shall be decided by the Contracting or Agreements Officer with right of appeal.
- g. **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.
- h. **Equal Opportunity.** The firm will not discriminate against any employee or employee applicant because of race, color, religion, sex, or national origin.
- i. **Affirmative Action for Veterans.** The awardee will not discriminate against any employee or applicant for employment because he or she is a disabled veteran.
- j. **Affirmative Action for Handicapped.** The awardee will not discriminate against any employee or applicant for employment because he or she is physically or mentally handicapped.
- k. **Officials Not to Benefit.** No Federal Government official may benefit personally from the SBIR/STTR funding agreement.
- l. **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.

- m. **Gratuities.** The Government may terminate the contract if gratuities have been offered to any Government representative to secure the awardee.
- n. **Patent Infringement.** The awardee shall report each notice or patent infringement claim based on contract performance.
- o. **Military Security Requirements.** The awardee shall safeguard classified information associated with the contracted work IAW applicable regulations.
- p. **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.
- q. **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.
- r. **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.
- s. **Animal Welfare.** Awards involving research, development, test, evaluation, or training on vertebrate animals will incorporate DFARS clause 252.235-7002 or similar verbiage.
- t. **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.
- u. **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.
- v. Similar verbiage will be included in OT awards unless determined exempt through comparable determination.
- w. **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>.
- x. **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.

11.2. 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>.

- a. Sales revenue from Phase II-developed products and non-R&D services;
- b. Additional investment from non-Federal SBIR/STTR Program in activities furthering Phase II technology development and/or commercialization;
- c. Phase II technology used in a fielded DoD system or acquisition program and, if any, which system or program;
- d. The number of patents resulting from SBIR/STTR Program awards;
- e. Growth in number of firm employees; and
- f. 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.

11.3. 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 contain an appropriate acknowledgment and disclaimer statement.

11.4. 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. See also Invention Reporting in Section 11.6.

11.5. 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. 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-id?rgn=div5;node=48%3A3.0.1.8.48#se48.3.252_1227_67018. If a proposer 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.

11.6. 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.

11.7. Final Technical Reports

- a. **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."
- b. **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.
 3. Block 15 (Subject Terms) 298 must include the term "SBIR Report".

- c. **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 B and 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.

12. VOLUNTARY PHASE II FUNDING COMMITMENT GUIDANCE

Below guidance discusses relationships between small companies and outside investors for voluntary Phase II funding commitments. Such commitments are evidence of commercial potential pursuant to 15 USC 638(e). There is no requirement to provide such commitments, and proposals including them do not receive preference during peer review. Each applicant's commercial potential is evaluated on its own merits IAW non-exclusive criteria in 15 USC 638(e).

12.1. Examples of Voluntary Phase II Funding Commitments

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

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.

12.2. Voluntary Phase II Funding Commitment Timing/Logistics

1. *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.

2. *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.

3. *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?*

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.

13. PHASE I AND DIRECT TO PHASE II TOPICS

AF NUMBER: X224-OCSO1

TITLE: Phase I Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear Air Force or Space 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 is a Department of the Air Force (DAF) Special Topic in partnership with AFWERX and SpaceWERX. This topic is seeking technologies for transition into the United States Air Force and/or United States Space Force. Primary objectives of this topic include exploring innovative technologies applicable to both defense and non-defense markets, scaling capability, and growing the industrial base for defense. This topic is intended to reach companies capable of completing a feasibility study and prototype-validated concepts under accelerated Phase I and II schedules. This topic is aimed at applied research and development efforts rather than "front-end" or basic R/R&D. Phase I awards will have a maximum value of \$75,000 and a maximum duration of 3 months, including two months technical effort and one month for reporting. Phase II awards will have a maximum value of \$1,250,000 and a maximum period of performance of 21 months, including 18 months technical performance and three months for reporting. Please see the official solicitation for further details at <https://rt.cto.mil/rtl-small-business-resources/sbir-sttr/>.

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 Government or 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 Defense stakeholders. Offeror(s) may provide indication of a Defense 'need' by including evidence of preliminary discussions with DAF stakeholders. • Technical Merit - The soundness, technical merit, 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-market fit between a DAF stakeholder and the proposed adaptation of the non-defense commercial solution.

PHASE I: Determine, insofar as possible, the scientific and technical merit and feasibility of ideas thought to have potential to transition to DAF applications. Additionally, validate the product-market fit between the proposed solution and a potential Air Force and/or Space Force stakeholder. Define a clear, immediately actionable plan with the proposed solution and the DAF customer and end-user. This feasibility study should: 1. Clearly identify the potential stakeholders of the adapted solution for solving

the Air Force and/or Space Force need(s). 2. Describe 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 DAF systems and/or processes. 3. Describe if and how the solution can be used by other DoD or Governmental customers.

PHASE II: Continue RDT&E to develop, install, integrate, demonstrate, and/or test and evaluate the prototype system(s) determined to be the most feasible solution during the Phase I feasibility study. These activities should focus specifically on: 1. Evaluating the adapted solution against the objectives and measurable key results defined in the Phase I feasibility study. 2. Describing in detail how the solution differs from the non-defense commercial offering to solve the Air Force or Space Force need and how it can be modified for scale. 3. The solution's clear transition path including consideration of all affected stakeholders' inputs. This would include, but not be limited to, end users, engineering, sustainment, contracting, finance, legal, and cyber security. 4. Providing specific details about the solution's integration with other current and future solutions. 5. Explaining the solution's sustainability, i.e., supportability. 6. Identifying other DoD or Governmental customers interested in the solution.

PHASE III DUAL USE APPLICATIONS: Some solutions may go straight from Phase I to Phase III as soon as the product-market fit is verified. The contractor 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: To answer questions about this topic, AFWERX will host webinars discussing this opportunity. Details about these events will be published on <https://afwerx.com/events/> DAF SBIR/STTR Phase I awards are FAR-based firm fixed price purchase orders. Phase II awards are either FAR-based firm fixed price contracts or Other Transactions for Prototype. If already registered in SAM, ensure the CAGE code, company name, address information, DUNS numbers, etc., are correct and current. Firms' SAM registrations shall reflect ALL AWARDS for "Purpose of Registration". Otherwise, the proposal will not be considered for award. For more information, visit SAM.gov. Purchase orders shall be signed and emailed back to AFRL/SBRK at sbrk.sprints@us.af.mil within five business days of receipt or the award will not be issued. 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 12 June 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 12 June 2018, <https://steveblank.com/2016/02/23/the-mission-model-canvas-an-adapted-business-model-canvas-for-mission-driven> ;

3) DoD 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; Commercial

AF NUMBER: X224-ODCSO1

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: A D2P2 may be awarded for a maximum period of 21 months, including 18 months technical performance and three months for reporting, at a maximum of \$1,250,000 SBIR funds. The objective of this topic is to pursue Innovative Defense-Related Dual-Purpose Technologies not covered by other specific SBIR topics, exploring options for solutions potentially outside the current Technology Areas but useful to the AF. This topic seeks companies with capability to complete 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: The Air Force is a large and complex organization consisting of many functions with similar commercial sector counterparts. The AF is interested in exploring innovative technology domains with demonstrated clear commercial value in the non-Defense sector through existing products/solutions for potential AF applications. It is impossible to cover all technology areas with SBIR topics. Thus, this topic is a call for open ideas and technologies in areas not currently listed. It is important potential solutions have a high probability of keeping pace with technological change. They should be closely tied to commercial technologies supporting solution development. This topic is intended to identify non-Defense commercial solutions to be adapted and expanded innovatively through R/R&D to meet DoD stakeholders' needs in a short timeframe at low cost. Solutions should be focused on the three areas listed below, meeting as many as possible. Financial Sustainability - The offeror(s) should demonstrate financial sustainability for both the solution and the firm. The best solutions demonstrate this by sales to non-Defense clients and other private investment sources. Defense Need - The offeror(s) should demonstrate understanding of the fit between the solution and Defense stakeholders. The best solutions demonstrate this with a signed memo from a specific, empowered AF end-user and customer (likely not the same person) ready and willing to participate in the proposed prototype solution's trial. This should include specific objectives and measurable (quantitative) key results the proposed solution can achieve to meet AF end-user and customer needs. Technical/Team - The proposed approach's soundness, technical merit, and innovation and incremental progress toward fulfilling an AF need and the qualifications of the proposed Principal Investigators/Project Managers, supporting staff, and consultants to execute against the proposed approach. Proposals should demonstrate a product-market fit between an AF end-user and the proposed R/R&D adaptation of an existing or emerging 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 an AF customer's specific need, supported by documentation from a specific motivated, empowered AF end-user and customer ready and willing to participate in the proposed prototype solution's trial. The USAF S&T Strategy identifies five (5) Strategic Capabilities, listed below. The offeror should address the solution's connection to at least one of them. Global Persistent Awareness Resilient Information Sharing Rapid, Effective Decision-Making Complexity, Unpredictability, and Mass Speed and Reach of Disruption and Lethality BLUE SKY* US Air Force

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-market fit between the proposed solution and a potential AF stakeholder. The offeror should have defined a clear, immediately actionable plan with the proposed solution and the AF customer. The feasibility study should have: Identified the prime potential AF end user(s) for the non-Defense commercial offering to solve the AF need, i.e., how it has been modified; Described integration cost and feasibility with current mission-specific products; Described if/how the demonstration 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. This demonstration should focus specifically on: Evaluating the proposed solution against the proposed objectives and measurable key results. Describing in detail how the installed solution differs from the non-Defense commercial offering to solve the Air Force need, as well as how it can be scaled for wide adoption, i.e., modified for scale. 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. Specifying the solution's integration with other current and potential future solutions. Describing the solution's sustainability, i.e., supportability. Identifying other specific DoD or Governmental customers for the solution

PHASE III DUAL USE APPLICATIONS: Phase II solutions may transition quickly to Phase III after the product-market fit is verified. The firm will transition the adapted non-Defense commercial solution to provide expanded mission capability to a broad range of potential Government/civilian users and alternate mission applications. NOTES: Due to heavy interest in this topic, the AF will not answer questions via email, except in rare cases. Teleconferences will be held to efficiently address all questions. a. Please monitor <https://af-ventures.com/> for specific telecom 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.

NOTES: N/A

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>;

KEYWORDS: Open; Other; Disruptive; Radical; Dual-Use; Commercial

AF NUMBER: X224-ODCSO2

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

TECH FOCUS AREAS: Quantum Sciences; Microelectronics; Cybersecurity; Network Command, Control and Communications; Autonomy; Artificial Intelligence/Machine Learning; General Warfighting Requirements (GWR)

TECHNOLOGY AREAS: Sensors; Electronics; Space Platform; Materials; Information Systems; Battlespace

OBJECTIVE: A D2P2 may be awarded for a maximum period of 21 months, including 18 months technical performance and three months for reporting, at a maximum of \$1,250,000 SBIR funds. This is a Department of the Air Force (DAF) Special Topic in partnership with SpaceWERX. Primary objectives of this topic include exploring innovative technologies 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 later stage research and development efforts rather than "front-end" or basic R/R&D.

DESCRIPTION: The Space Force wishes to explore innovative technology domains with demonstrated commercial value in the non-defense sector, i.e., through existing products/solutions, in order to obtain Space Force applications, i.e., Dual-Purpose Technologies/Solutions. It is impossible to release SBIR topics addressing every Space Force technological area. Therefore, this topic is seeking open ideas and technologies not currently covered elsewhere. 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 innovatively adapted to meet Space Force stakeholders' needs in a short timeframe, at a low cost. The Space Force is seeking solutions to improve its portfolio of military space systems. These include, but are not limited to: Battle Management Command and Control (BMC2): Applications to observe, control, and assess the space domain on tactically relevant timelines in support of joint, multi-domain operations. Digital Engineering (DE)/Model Based Systems Engineering (MBSE): Virtual environment enabling rapid architectural design studies and change analysis for data-driven decision making. Tools enabling enterprise development against realistic, representative threats. Advanced Production/Manufacturing: Rapid/innovative production applications such as additive manufacturing and enabling factors such as standardized interfaces and common components. Data Analytics/Artificial Intelligence/Machine Learning: Applications to quickly convert and exploit data, stored in various locations and levels, to provide actionable information. Space Cyber: Applications to enhance space system mission assurance across all segments and across highly cyber-contested system lifecycles, including cyber-secure processing architectures, and tailorable assurance modules. Space Logistics: Opportunities to provide mission capabilities in non-traditional orbits, including sub-orbital, very low LEO, HEO, and beyond GEO. Applications to enable resiliency through maneuverability by opening up trade spaces for high delta-v propulsion systems and on-orbit refueling/servicing. Weather Monitoring: Applications to enhance existing space and terrestrial weather monitoring capabilities to contribute towards a future DoD proliferated weather architecture. Position Navigation & Timing (PNT): Assured PNT applications that are resilient to jamming, spoofing, and other emerging threats; employ software defined security features; have low size, weight, and power characteristics. Satellite Communications (SATCOM): Secure communication options to create path diversity between operations

center and satellite for Telemetry, Tracking, and Commanding (TT&C) and mission data. Missile Warning: MW detection and tracking applications for contested environments. Operator Training: Applications to enhance operator's understanding of satellite structure, terminology, fuel usage, tactics, command and control, etc. that could be accessed and edited anywhere by multi-modal means. Space Resilience: Satellite technologies that provide added resilience and protection from both natural and man-made hazards. Submissions should focus on the following characteristics: • Commercialization Potential - The potential for Government or 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 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.

PHASE I: This topic is intended for technology proven ready to move directly into Phase II. Therefore, a Phase I award is not required. Phase I like proposals will not be evaluated and will be rejected as nonresponsive. 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-market fit between the proposed solution and a potential Space Force stakeholder. The offeror should have defined a clear, immediately actionable plan with the proposed solution and the customer and end-user. The feasibility study should have: 1. Clearly identified the potential stakeholders of the adapted solution for solving the 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. This demonstration 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 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: Phase II solutions may transition quickly to Phase III after the product fit is verified. The firm will transition the adapted non-defense commercial solution to provide expanded mission capability to a broad range of potential Government and civilian users and alternate mission applications. NOTES: To answer questions about this topic, SpaceWERX will host webinars alongside AFWERX discussing this opportunity. Details about these events will be published on <https://afwerx.com/events/>. DAF 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. 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. 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.

NOTES: N/A

REFERENCES: 1) FitzGerald, B., Sander, A., & Parziale, J. (2016). Future Foundry: A New Strategic Approach to Military- Technical Advantage. Retrieved 12 June 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 12 June 2018, <https://steveblank.com/2016/02/23/the-mission-model-canvas-an-adapted-business-model-canvas-for-mission-driven>; 3) DoD 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; Commercial

14. APPENDICES

14.1. Appendix A – Phase I Technical Volume Slide Deck Instructions

The Technical Volume should contain a MAXIMUM of 25 slides, although fewer is permissible. Brevity and clarity are important when communicating complex topics.

There are **11 required slides** and **6 additional slides that are required only if applicable** to the proposal. The remaining slides are not required and may be used at the proposer's discretion. Proposals without the required slides will not be considered.

The Slide Deck should cover the following items in the order given below. A sample Slide Deck is available at Attachment 1. While the notes in the template are suggestions, the items described below are required. Additionally, offerors are not required to use the template's style/format. As these instructions cover Phase I, unless otherwise noted.

REQUIRED SLIDES

1. **Overall Summary Slide** - Including Company Name and Overview of Proposal
2. **Technical Merit Summary** – Clearly communicate the scientific merit of the solutions central and/or enabling technological concepts, including the most effective points that demonstrate the technical merit of your solution. Identify the current scientific and/or technical baseline, referencing relevant scientific and technical literature, and describe the RDT&E effort's advancement of this baseline.
3. **Concept and Significance of Problem/Opportunity** – Define the specific technical problem and/or opportunity addressed and its importance to your prospective customers. Describe how your solution is better than the customers' current alternative. Communicate if and how the private sector variant of the proposed solutions is different from the DoD-variant. Work proposed to the SBIR program MUST be R/R&D (Phase 1) or RDT&E (Phase 2). Non-RDT&E procurement of commercially-available solutions is not appropriate for the SBIR program.
4. **Summary of the Solution's Commercialization Potential** – Effectively demonstrate the firm's ability to commercialize the solutions in both DoD AND commercial markets. Include any applicable pilots, revenue, users, and/or other types of interest or resource investment to date that demonstrates the presence of viable customer markets and government/commercial investment for the solution. Describe the solution's competitive landscape and potential to scale the proposed solution.
5. **Team's Ability to Perform Research and Commercialize the Solution:** Identify the team and highlight relevant education, experience, and/or capabilities demonstrating the ability to develop the solution AND adapt it to prospective AF customer needs. Full resumes, including a publications list, for the PI and other key technical personnel shall be included in Volume 5: Supplemental Documents.
6. **Defense Need** – Demonstrate knowledge of prospective AF End-User(s)/Customer(s)

and their most reasonable use-case for your solution. Explore differentiation from current customer alternatives, and incremental progress toward fulfilling the identified Defense need. Highlight previous DoD funding for the solution or underlying technology. Include a description of the proposed solution and how it compares to the user's current alternative. If applicable, reference a Strategic Capability area, as described in Section 2.1.

7. **Objectives:** Describe how success will be measured in helping the prospective users and the plan to identify stakeholders other than end-users, e.g. safety, test or certification authorities, cybersecurity, acquisition specialists supporting prospective end-users, etc.
8. **Plan Outline (including Subcontractors' Efforts):** Provide a clear description of the approach. Indicate what tasks are planned, how and where the work will be conducted, a schedule of major events, and the final product(s) to be delivered. The Phase I effort should attempt to determine the technical feasibility of the proposed concept. Include an outline of the work plan in the following format: (a.) Scope: List the major requirements and specifications of the effort. (b.) Task Outline: Provide a brief outline of the work to be accomplished over the span of the effort. (c.) Deliverables (preliminary and final report) (d.) Kickoff meeting within 30 calendar days of contract start (e.) Preliminary report (f.) Final report with SF 298 and DD Form 882
9. **Transition Plan:** Describe your plan to transition your solution into the Air Force. Describe *briefly* how your proposed solution could integrate with the existing efforts of your proposed Air Force customer.
10. **Related Work (Dual-Use)** – Describe significant activities directly related to the proposed effort, including any conducted by the PI, proposing firm, consultants, or others. Describe these activities' interface with the proposed project and discuss planned coordination with outside sources. The technical volume must persuade reviewers of the proposer's awareness of the state-of-the-art in the specific topic. Describe similar previous and parallel work not directly related to the proposed effort. Provide the following: (1) short description, (2) client POC name/phone number), and (3) completion date. Describe Defense customers and interviews with them, if any. Describe the Defense customers and interviews with them, if any. 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).
11. **Clearances/Certifications/Approvals/Registrations** – Include the DUNS, CAGE code, and SBA SBIR/STTR ID number. If the firm does not have these numbers, include the date on which the application was submitted. Note: A valid CAGE code is required at submission or the proposal may be disqualified.

SLIDES TO INCLUDE IF APPLICABLE – Include the following slides if they apply to the proposed effort. If not, do not include them in the slide deck.

12. **Foreign Citizens** - 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 country of origin, the type of visa or work permit under which they are performing, and the tasks they will be assigned for the proposed effort.

- a. Offerors frequently assume individuals with dual citizenship or a work permit will be allowed to work on a SBIR project and do not report them. This is not necessarily the case. The proposal will be rejected if the requested information is not provided. Therefore, firms should report all foreign citizens expected to be involved on this project. The firm may be asked to provide additional information during negotiations in order to verify the foreign citizen's eligibility to participate.
- b. 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)).

13. **Facilities/Equipment** - Describe available instrumentation and physical facilities necessary to carry out the effort. Justify equipment purchases, including detailed pricing information in the Cost Volume. Verify facilities where the proposed work will be performed meet environmental laws and regulations of Federal, state (name), and local governments. This includes, but not limited to, airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.

14. **Prior, Current, or Pending Support of Similar Proposals or Awards** – If a proposal submitted in response to this CSO is substantially the same as another proposal previously, currently, or pending award by another AF organization, DoD component, or Federal agency, the offeror must state so on the Proposal Cover Sheet and provide the following information:

- a. Other entity's name and the topic number under which the proposal was or will be submitted, or from which an award is pending or has been received.
- b. Proposal submission or award date.
- c. Proposal title.
- d. Principal investigator's name for each proposal submitted or award.
- e. Title, number, and date of CSO/solicitation(s) under which the proposal was submitted, will be submitted, or under which award is pending or has been received.
- f. If award was received, provide contract number.

15. **Technical Data Rights (Assertions)**: 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. The Government obtains a royalty-free license to use the technical data for Government purposes commencing with contract award and ending five years after project completion. This data should be marked with the restrictive legend specified in DFARS 252.227-7018. See Section 11.5 for additional discussion. Upon expiration of the twenty-year restrictive license, the Government has unlimited 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) for use, release, or disclosure 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."

a. **Offerors wishing to assert data rights shall include the following table in the proposal:**

Technical Data/ Computer Software Furnished with Restrictions	Basis for Assertion <ul style="list-style-type: none"> • None • Developed exclusively at private expense • Developed partially at private expense 	Asserted Rights Category <ul style="list-style-type: none"> • None • Government Purpose Rights • Limited Rights (Technical Data) • Restricted Rights (Software) • Specifically Negotiated License • Rights in SBIR Data 	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

If a proposer plans to submit assertions IAW DFARS 252.227-7017, identification and assertion of use, release, or disclosure restrictions MUST be included with the proposal submission. If selected, the contract will not be awarded until assertions are negotiated and/or approved.

16. **Supplemental Information on Direct Labor Costs:** For any notable instances, e.g., a significant number of hours, very high hourly wages, or significant labor overhead/fringe rates, please justify them in this section. Helpful resources for rate comparisons are https://www.bls.gov/oes/current/oes_nat.htm
17. **Supplemental Information for Direct Material Costs:** Justify costs for materials, parts, and supplies with an itemized list containing types, quantities, and price and where appropriate, purposes. For the materials included in the cost volume, please provide the bases for the listed costs. This can be historical information, vendor quotes, catalogs, etc.
18. **Detailed Travel Costs (Included in Other Direct Costs):** If travel was proposed as an Other Direct Cost, justify those expenses here. Cost for travel funds must be justified and related to the needs of the project. Provide the number of trips, travelers per trip, specific locations and purpose. Also include, to the extent practicable, the basis for the proposed flight, lodging, per diem (meals), and ground transportation costs. A useful resource for this section is <https://www.gsa.gov/travel/plan-book/per-diem-rates>.

NOTE: Travel is likely required for the Phase I technical feasibility study so provide

estimated costs here. Actual travel costs incurred will likely differ, which is acceptable. However, this information aids contracting officers to determine proposed costs as fair and reasonable.

19. **Supplemental Information for Special Tooling and Test Equipment:** While special tooling/test equipment and material cost may be included under Phase I or Phase II, these items are carefully reviewed relative to need and appropriateness for the project. Special tooling/test equipment purchases must be determined by the contracting officer to be advantageous to the Government and directly related to the proposed effort. These may include such items as innovative instrumentation or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with the Air Force unless it is determined title transfer to the contractor is more cost effective than equipment recovery by the Air Force.

14.2. Appendix B: 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.

14.2.1 Technical Summary

1.1 **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.

1.2 Identify if the solution to the problem or the opportunity benefits the Air Force or the Space Force or if the solution or opportunity could benefit either or both of the DAF services.

1.3 **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.

1.4 **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:

- How similar is the modified item to others sold in the commercial marketplace to non-US Government customers?
- Does the supplier perform similar modifications for non-US Government customers?

- Do AF unique modifications change the product's essential use and purpose?
- Are there differences in the production/manufacturing/delivery processes used to perform the modification for the Federal Government versus non-Government customers?
- What are the quantitative benefits expected for identified AF end-users?
- When adapting the commercial solution, what is the intended Commercial-Off-the-Shelf (COTS) or commercial product/process modification? Explain.
- 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.*

1.5 **Phase I 'Feasibility Study' Results:** The proposal shall detail the solution's ability to meet AF end-users' and customers' needs. These results shall be framed in the context of AF 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.
- AF End-User and Customer Exploration Methods: Describe methods, both successful and unsuccessful, used to perform technical and scientific feasibility analysis, as well as AF Customer and End-User Exploration, for adapting the non-Defense commercial solution to a specific AF end-user's needs. This should include detailed reports of at least one in-depth interview with an AF End-User and one in-depth interview with an AF Customer.
- Empowered and Committed AF End-Users: List and describe specific AF 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 AF Customers: List and describe the specific AF 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 Air Force need. In these cases, the Primary TPOC must be from the Air Force.
- Empowered and Committed US Non-AF Government End-Users: Commitments from US non-AF Government end-users will also be considered. However, there MUST be at least one AF/Joint end-user and customer as described above.
- **NOTE: Inclusion of a Customer Memorandum is mandatory.** A template is available at Attachment 1. This Customer Memorandum formally captures interest from the empowered and committed AF 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.

1.6 Compliance and Regulatory Activities: Please indicate whether or not the proposed

effort includes any of the following activities (please do not remove/delete these questions):

- (1) Will there be flight testing? (indicate Indoor/outdoor and manned/unmanned)
- (2) 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?
- (3) 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.
- (4) 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).
- (5) Will there be any weapons or munitions testing?
- (6) Does this activity use explosives, propellants, deflagrating materials, or ammunition?
- (7) Does this activity use a directed energy device (including lasers) or radio frequency radiation?
- (8) Does this activity involve hazardous materials?
- (9) Will there be any animal testing?
- (10) Does any testing meet the definition of human subject research per 32 CFR 219?
- (11) Will testing include use of toxins, human derived materials, or recombinant DNA?
- (12) Does this project involve interaction or intervention w/ humans?
- (13) Does this project involve the access to, collection, use, analysis or sharing of human data or human bio specimens?

1.7

1.8 **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 AF 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 AF 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 offeror’s immediate control and plans to work within those constraints.

14.2.2 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 AF 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.**

14.2.2.1 **Scope:** List the effort's major requirements and specifications.

14.2.2.2 **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/SBRF 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.

14.2.2.3 **Milestone Schedule:** Include the mutually agreed upon milestone schedule from your signed Customer Memorandum. 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.

- 14.2.2.4 **Deliverables:** Include a section clearly describing the specific sample/prototype hardware/software to be delivered, as well as data deliverables, schedules, and quantities.
- 14.2.2.5 **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>.
- 14.2.2.6 **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.
- 14.2.2.7 **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.
- 14.2.2.8 **Status Reports:** Status reports are due quarterly, at a minimum. These shall be concise documents describing progress in meeting the selected AF 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 0 and 1 of progress toward each.
- 14.2.2.9 **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.
- 14.2.2.10 **Additional Reporting:** The AF end-user or customer may require additional reporting or documentation including:
 - 14.2.2.11 Software documentation and user manuals;
 - 14.2.2.12 Engineering drawings;
 - 14.2.2.13 Operation and Maintenance documentation;

- 14.2.2.14 Safety hazard analysis when the project will result in partial or total development/ delivery of hardware; and
- 14.2.2.15 Updated commercialization results.

14.2.2.16 **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.

14.2.2.17 **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:

14.2.2.18 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.

14.2.2.19 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.

14.2.3 Commercialization Strategy

14.2.3.1 **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:

14.2.3.2 **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.

14.2.3.3 **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.

14.2.3.4 **Market.** Milestones, target dates, market size analysis, and estimated market share after first year and fifth

year sales; plan to obtain market share.

14.2.3.5 **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.

14.2.3.6 **Financing.** Plans for securing necessary funding in Phase II.

14.2.4 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.

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, 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.

14.2.5 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.

14.2.6 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.

14.2.7 Key Personnel

Identify key personnel involved in the project, including subcontractors and consultants. The offeror 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.

14.2.8 Non-Defense Commercial Customers

14.2.8.1 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.

14.2.8.2 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.

14.2.9 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.

14.2.10 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.

14.3 Appendix C: 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 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 as described in section 3.22 of this CSO, 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 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 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 involved SBIR and/or STTR funds, your proposal will be disqualified.
9. Has your firm met the performance benchmarks in section 3.1 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?

- **(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.
- 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. 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?
- a. **(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):
 - a. 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;
 - b. for 2) documentation verifying review and approval for the research from the Institutional Animal Care and Use Committee; and
 - c. for 3) evidence of approval by the Institutional Biosafety Committee.
 - b. 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?

- a. **(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 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.

AF X22.4 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, if applicable)

Attachment 5- X22.4 Sample Slide Deck (can be accessed at: <https://afwerx.com/sbir-sttr-program-overview/>)

Attachment 6- Customer Memorandum MANDATORY Template (Direct-to-Phase II Only)

Attachment 7- AF X22.2 SBIR CSO Phase II Funding Commitment Form (Required if Proposal includes non-SBIR Government funding or private investment)

Attachment 8- Proposal Checklist

**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 IN FULL TEXT:

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

The Offeror shall not complete the representation at paragraph (d)(1) of this provision if the Offeror has represented that it “does not provide covered telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument” in the provision at 52.204-26, Covered Telecommunications Equipment or Services—Representation, or in paragraph (v) of the provision at 52.212-3, Offeror Representations and Certifications-Commercial Items.

(a) *Definitions.* As used in this provision-

Backhaul, covered telecommunications equipment or services, critical technology, interconnection arrangements, reasonable inquiry, roaming, and substantial or essential component have the meanings provided in the clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) **Prohibition.** (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract or extending or renewing a contract with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(c) *Procedures.* The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (<https://www.sam.gov>) for entities excluded from receiving federal awards for “covered telecommunications equipment or services.”

(d) *Representations.* The Offeror represents that—

(1) It **will**, **will not** provide covered telecommunications equipment or services to the Government in the performance of any contract, subcontract or other contractual instrument resulting from this solicitation. The Offeror shall provide the additional disclosure information required at paragraph (e)(1) of this section if the Offeror responds “will” in paragraph (d)(1) of this section; and

(2) After conducting a reasonable inquiry, for purposes of this representation, the Offeror represents that—

It **does**, **does not** use covered telecommunications equipment or services, or use any equipment, system, or service that uses covered telecommunications equipment or services. The Offeror shall provide the additional disclosure information required at paragraph (e)(2) of this section if the Offeror responds “does” in paragraph (d)(2) of this section.

(e) *Disclosures.* (1) Disclosure for the representation in paragraph (d)(1) of this provision. If the Offeror has responded “will” in the representation in paragraph (d)(1) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the original equipment manufacturer (OEM) or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(ii) For covered services—

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the Product Service Code (PSC) of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(2) Disclosure for the representation in paragraph (d)(2) of this provision. If the Offeror has responded “does” in the representation in paragraph (d)(2) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(ii) For covered services—

(D) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(E) If not associated with maintenance, the PSC of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(End of provision)

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

- *Definitions.* As used in this clause—

Backhaul means intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network (*e.g.*, connecting cell phones/towers to the core telephone network). Backhaul can be wireless (*e.g.*, microwave) or wired (*e.g.*, fiber optic, coaxial cable, Ethernet).

Covered foreign country means The People's Republic of China.

Covered telecommunications equipment or services means—

(1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);

(2) For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);

(3) Telecommunications or video surveillance services provided by such entities or using such equipment; or

(4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Critical technology means—

(1) Defense articles or defense services included on the United States Munitions List set forth in the International Traffic in Arms Regulations under subchapter M of chapter I of title 22, Code of Federal Regulations;

(2) Items included on the Commerce Control List set forth in Supplement No. 1 to part 774 of the Export Administration Regulations under subchapter C of chapter VII of title 15, Code of Federal Regulations, and controlled—

(i) Pursuant to multilateral regimes, including for reasons relating to national security, chemical and biological weapons proliferation, nuclear nonproliferation, or missile technology; or

(ii) For reasons relating to regional stability or surreptitious listening;

(3) Specially designed and prepared nuclear equipment, parts and components, materials, software, and technology covered by part 810 of title 10, Code of Federal Regulations (relating to assistance to foreign atomic energy activities);

(4) Nuclear facilities, equipment, and material covered by part 110 of title 10, Code of Federal Regulations (relating to export and import of nuclear equipment and material);

(5) Select agents and toxins covered by part 331 of title 7, Code of Federal Regulations, part 121 of title 9 of such Code, or part 73 of title 42 of such Code; or

(6) Emerging and foundational technologies controlled pursuant to section 1758 of the Export Control Reform Act of 2018 (50 U.S.C. 4817).

Interconnection arrangements means arrangements governing the physical connection of two or more networks to allow the use of another's network to hand off traffic where it is ultimately delivered (*e.g.*, connection of a customer of telephone provider A to a customer of telephone company B) or sharing data and other information resources.

Reasonable inquiry means an inquiry designed to uncover any information in the entity's possession about the identity of the producer or provider of covered telecommunications equipment or services used by the entity that excludes the need to include an internal or third-party audit.

Roaming means cellular communications services (*e.g.*, voice, video, data) received from a visited network when unable to connect to the facilities of the home network either because signal coverage is too weak or because traffic is too high.

Substantial or essential component means any component necessary for the proper function or performance of a piece of equipment, system, or service.

(1) *Prohibition.* Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. The Contractor is prohibited from providing to the Government any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for

Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract, or extending or renewing a contract, with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract.

- *Exceptions.* This clause does not prohibit contractors from providing—
 - A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
 - Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.
 - *Reporting requirements.*
 - (1) In the event the Contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the Contractor is notified of such by a subcontractor at any tier or by any other source, the Contractor shall report the information in paragraph (d)(2) of this clause to the Contracting Officer, unless elsewhere in this contract are established procedures for reporting the information; in the case of the Department of Defense, the Contractor shall report to the website at <https://dibnet.dod.mil>. For indefinite delivery contracts, the Contractor shall report to the Contracting Officer for the indefinite delivery contract and the Contracting Officer(s) for any affected order or, in the case of the Department of Defense, identify both the indefinite delivery contract and any affected orders in the report provided at <https://dibnet.dod.mil>.
 - (2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause:
 - (i) Within one business day from the date of such identification or notifications: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.
 - (ii) Within ten business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the Contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.
 - *Subcontractor.* The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts and other contractual instruments, including subcontracts for the acquisition of commercial items.
- (End of clause)

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

(a) *Definitions.* As used in this provision, “covered telecommunications equipment or services” has the meaning provided in the clause [52.204-25](#), Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) *Procedures.* The offeror shall review the List of Excluded Parties in SAM.gov for entities excluded from receiving federal awards for “covered telecommunications equipment or services”.

(c) *Representation.* The Offeror represents that it **does**, **does not** provide covered telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument.

(End of provision)

ATTACHMENT 4 - AF X22.4 SBIR CSO D2P2
Department of Defense (DoD)
Small Business Innovation Research (SBIR) Program
Small Business Technology Transfer (STTR) Program

OMB No. 0704-0187 OMB approval expires August 31,

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 252.209-7002 Disclosure of Ownership or Control by a Foreign Government (JUN2010)

(a) Definitions. As used in this provision—

(1) “Effectively owned or controlled” means that a foreign government or any entity controlled by a foreign government has the power, either directly or indirectly, whether exercised or exercisable, to control the election, appointment, or tenure of the Offeror’s officers or a majority of the Offeror’s board of directors by any means, e.g., ownership, contract, or operation of law (or equivalent power for unincorporated organizations).

(2) “Entity controlled by a foreign government”—

(i) Means—

(A) Any domestic or foreign organization or corporation that is effectively owned or controlled by a foreign government; or

(B) Any individual acting on behalf of a foreign government.

(ii) Does not include an organization or corporation that is owned, but is not controlled, either directly or indirectly, by a foreign government if the ownership of that organization or corporation by that foreign government was effective before October 23, 1992.

(3) “Foreign government” includes the state and the government of any country (other than the United States and its outlying areas) as well as any political subdivision, agency, or instrumentality thereof.

(4) “Proscribed information” means—

(i) Top Secret information;

(ii) Communications security (COMSEC) material, excluding controlled cryptographic items when unkeyed or utilized with unclassified keys;

(iii) Restricted Data as defined in the U.S. Atomic Energy Act of 1954, as amended;

(iv) Special Access Program (SAP) information; or

(v) Sensitive Compartmented Information (SCI).

(b) Prohibition on award. No contract under a national security program may be awarded to an entity controlled by a foreign government if that entity requires access to proscribed information to perform the contract, unless the Secretary of Defense or a designee has waived application of 10 U.S.C. 2536(a).

(c) Disclosure. The Offeror shall disclose any interest a foreign government has in the Offeror when that interest constitutes control by a foreign government as defined in this provision. If the Offeror is a subsidiary, it shall also 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. Use separate paper as needed, and provide the

information in the following format:

Offeror's Point of Contact for Questions about Disclosure

(Name and Phone Number with Country Code, City Code and Area Code, as applicable)

Name and Address of Offeror

Name and Address of Entity Controlled by a Foreign Government

Description of Interest, Ownership Percentage, and Identification of Foreign Government

(End of provision)

ATTACHMENT 5- X22.4 SAMPLE SLIDE DECK can be accessed at <https://afwerx.com/sbir-sttr-program-overview/>.

ATTACHMENT 6- CUSTOMER MEMORANDUM (Direct-To-Phase-II Only)

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.



DEPARTMENT OF THE AIR FORCE

<<Air Force Organization (Please use their desired letterhead)>>

<<DATE>>

MEMORANDUM FOR AFRL/RGV (AF Ventures)

References: (a) 15 U.S.C. §638

(b) U.S. Small Business Administration SBIR/STTR Policy Directive (May 2019) (c) 5 C.F.R. §2635.702(c), Exception (1)

FROM: <<DAF Organization>>

SUBJECT: AFRL/RGV <<X2X.X>> Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Phase II – DAF Organization Defense Need and Participation Interest in the SBIR/STTR Program under Topic AFX2X.X-CSO1 / AFX2X.X-TCSO1 with <<SBIR/STTR Company>>.

BLUE TEXT IS INFORMATIONAL; REMOVE BEFORE SIGNING!

NOTE – The use of this template is MANDATORY; all elements MUST BE present and complete. Proposals without completed and signed memoranda accomplished IAW this template will be determined non-responsive to the solicitation and not considered for award.

R/R&D/RDT&E SUITABILITY – To ensure efforts submitted are appropriate for the SBIR/STTR Programs, general definitions and R/R&D/RDT&E suitability language may be found in the attachments. This language is not exhaustive but meant only for reference.

To learn more about AF Ventures SBIR/STTR open topics and access additional resources including videos, sample applications, and more, visit <https://afwerx.com/sbirsttr/>.

Purpose: This memorandum is executed in furtherance of references (a) and (b) and the applicable Air Force SBIR/STTR solicitation, which constitute authority to promote products, services, and enterprises within the

meaning of reference (c). The purpose of this memorandum is to document interest from a Department of the Air Force organization(s) in working with AFWERX and an open topic SBIR/STTR Phase II awardee on a proposed Phase II effort.

Defense Mission Need: <<DAF Organization>> has a national Defense-related mission need in the area of <<Area of Interest>>, specifically <<describe the mission need and impact>>. We believe technology development under this effort could contribute to future mission need fulfillment. The mission impact of this project on the DAF and DoD will be <<impact statements>>.The main goals of our involvement in this project are:

<< measurable goal 2>>

<< measurable goal 1>>

<< measurable goal 3>>

Etc.

Project Timeline: If this SBIR/STTR Phase II proposal is selected and awarded, we expect this project to be executed from <<start month/year>> to <<end month/year>>.

Phase II Funding Commitment from <<DAF Organization>>: [DAF Customer's Government funding commitments are not required for Phase II SBIR/STTR awards. However, a DAF Customer may wish to provide its own funds to supplement SBIR/STTR program funds in order to increase project scope or likelihood of success, according to Reference \(b\), \(Appendix I\)\(e.\)§4\(b\)\(1\)\(v\)\(B\).](#)

[Pursuant to Reference \(b\), DAF Customer may expend its non-SBIR/STTR funds as supplements to the Phase II award. Additionally, non-SBIR/STTR Federal matching, as well as non-Federal \(in certain circumstances found in Reference b\), funding may be used for Phase IIB enhancements. DFARS Subpart 204.71, Uniform Contract Line Item Numbering System, contains procedures for applying multiple lines of accounting to a single contract, including modifications.](#)

[In order to be included in the contract award, if selected, funding must be provided to AFRL/RGF no later than 30 calendar days after the corresponding solicitation's closing date. To initiate the funds transfer process, email \[AFRL.SBIR.STTR@us.af.mil\]\(mailto:AFRL.SBIR.STTR@us.af.mil\). An automated response including the funds transfer request template and further guidance will be received.](#)

[If non-SBIR/STTR Federal funding commitments are planned, include this language: If a Phase II award is executed, <<DoD/DAF Organization>> will provide <<amount and type of funds>> non-SBIR/STTR Government funds. <<DAF Customer Finance Office symbol>> concurs with this type funding's use and verifies funds availability.](#)

[If funds will be applied directly to Phase II via funds transfer to AFRL/RGF, also include: <<DAF Organization>> will transfer the funds to AFRL/RGF no later than 30 days after the applicable solicitation's closing date. It is understood if these funds do not arrive within the specified period of time, the Phase II may not be awarded. If the Phase I company is not selected for Phase II award, the funds will be returned to the providing DAF organization.](#)

Additional agreement: Prior to and/or following award, if necessary for project success, <<DAF Organization>>

will consult with Air Force SBIR/STTR Legal, Contracting, and Program Office personnel to formalize cooperation in the manner protecting the Government's interests.

Prior to award, determine if the proposed effort will require specific clauses or other special features to accommodate the work to be performed. This could include program elements such as Government-Furnished Equipment/Information (GFE/I), use of Government facilities for testing or demonstration, use of Government-provided licenses, environment considerations, etc.

After award, if assistance is necessary, request guidance to award a Phase III contract or other appropriate agreement for transition to an identified Defense mission need.

Phase III Interest: Further, if the Phase II project is successful but the technology is not able to fully meet the mission need, <<DAF Organization>> will consider transitioning the resulting innovations to Phase III contracts, subcontracts, or other instruments with other DAF and/or Federal customers. The transition effort will give due regard to the Phase III transition preference for SBIR/STTR funded technologies set forth in references (a) and (b). Phase IIIs are subject to Government organizations' acquisition planning, funds availability, security assessments, and Small Business/Legal/Contracting/other review requirements.

Milestones: The milestones found in Attachment 1.1, Schedule of Milestones, will provide value as End- Users and/or Customers of the proposed solution.

Stakeholders: It is understood the successful transition of innovative solutions requires multiple engaged and empowered stakeholders. Responsibilities have been assigned to, and concurrence received from, the following stakeholders relative to the proposed project:

Primary End-User Organization: <<DAF End-User Organization>>

POC: <<Name, Rank, Title, Email>>

[The organization which will operationally benefit from the solution.](#) Primary Customer Organization: <<DAF Customer Organization>> POC: <<Name, Rank, Title, Email>>

[The organization responsible for acquiring the solution on behalf of the End-User.](#)

Phase II Technical Points of Contact (TPOCs):

[\(TPOCs must be notified of their duties for awareness prior to Memo signature; please keep the format below\)](#)

Primary: <<Name; Rank; Organization; Email; Phone>>

Alternate: <<Name; Rank; Organization; Email; Phone>>

TPOCs will work closely with the company during Phase II performance to achieve project success. This includes but is not limited to receiving and accepting/rejecting deliverables; providing performance and progress feedback to the company; working to overcome tactical execution barriers (e.g., base access, waivers/certifications, etc.); and driving the effort towards Phase III transition if successful. Please see the TPOC Designation Letter provided in the attachments, this letter will need to be signed if the proposal is selected for a potential award. [Note: TPOCs are not required to be in the End-User or Customer organization. Another organization may provide a TPOC with expertise in the technology area. TPOCs MUST be Government personnel; support contractors, including SETA contractors,](#)

may not be TPOCs. Primary TPOCs MUST DAF military or civilian personnel.

Strategic Stakeholders (for data collection purposes):

Name of MAJCOM or HQ function this proposal most directly impacts (required): Name of PEO or Center this proposal most directly impacts (required):

Staff Functions (as applicable) Providing Concurrence:

Security Office: (required for base access/CACs/classified accesses; see Section 10):

Information Assurance/Cybersecurity: (required for a Risk Management Framework; see Section 11): Finance: (required for Phase II Government Funding Commitments, if applicable; see Section 4):

Contracting:

Strategy, Integration, and Requirements (A5):

Small Business Office:

Commander:

Legal:

Engineering/SPO/Test:

Public Affairs:

<<Insert additional stakeholders here as necessary>>

Phase III Transition Strategy: The program's core objective is transition of SBIR/STTR-funded small business innovations to Phase III. Describe this efforts' transition strategy; address at a minimum Phase III funding strategy, requirements personnel role (if applicable), contract vehicle, and integration plan.

The DAF Customer's Small Business Office should advise the Customer regarding potential contracting, subcontracting, or other opportunities suitable for the SBIR/STTR company.

Additional ideas/resources available in the attachments. Don't use boilerplate attachment language in this section. Tailor the Transition Strategy narrative to the specific organization and solution.

Security: The SBIR/STTR Company <<will/will not>> requires <<access to military installations and facilities/Common Access Cards (CACs) to access DoD networks/classified accesses documented via a DD254>> to perform the proposed work under Phase II. **If Base Access is required, include the following:** <<Customer or TPOC>> confirms if a Phase II is awarded, it will work with applicable visitor centers or security offices to sponsor the individuals onto the installation when required. **If CACs are required, include the following:** <<Security Office or Trusted Agent>> confirms if a Phase II is awarded, it will process the documentation required to issue the required CACs. **If classified access is required, include the following:** <<Security Office>> confirms if a Phase II is awarded, it will work with the DAF customer to draft a DD254, and work with the company to obtain required classified accesses. (AFVentures does not manage security processes, the customer/TPOC are responsible)

Cybersecurity: If the proposed solution involves software or information technology and will connect to DoD networks/systems or utilize CUI data, it will likely require an Authorization to Operate (ATO) or Interim Authorization To Test (IATT) granted by an Authorizing Official (AO), or utilize established DevSecOps environments within Platform One. The Air Force Customer or TPOC must consult with the applicable wing-level Cybersecurity or Information Assurance office to begin this process. Fundamental cybersecurity control requirements are outlined in NIST SP 800-171 Rev 1 and DFARS PGI 239.76 - Cloud Computing, serving as the backbone to Air Force cyber and data security. More information can be found at <https://www.safcn.af.mil/Organizations/CISO-Homepage/Small-Business-Cybersecurity-Information/> (AFVentures does not manage ATO or cybersecurity processes, the customer/TPOC are responsible)

The proposed solution <<does/does not>> involve software or IT that will connect to DoD networks/systems or utilize CUI data.

If yes, include the following:

<<Information Assurance/Cybersecurity Office>> will work with <<SBIR/STTR Company>> and <<applicable Authorizing Official or Platform One>> to determine whether an ATO or IATT is required, submit required paperwork, and ensure cybersecurity requirements are met.

Flight Testing or Utilization of Unmanned Aerial Systems (UAS): The SBIR/STTR company

<<will/will not>> require flight testing or UAS utilization to accomplish the proposed Phase II work. There is a blanket waiver for AFRL/DO to “procure Commercial-Off-The-Shelf Unmanned Aerial Systems for the purposes of conducting cyber analysis, signature, system check out, or profile data in a benign or controlled RF environment”. However, contractors proposing UAS purchases will need to work with the Government TPOC to also pursue a “use waiver”. Contract execution is not dependent on use waiver completion. But it is important to start the process as early as possible, as completion could impact efforts’ milestone schedules.

Conclusion and Signatures. Please contact the individuals below with questions or concerns. Certain ranks/grades for signatories are not required to sign. However, the individuals should be in positions to speak for their organizations, e.g., individuals must understand and exert influence over operational needs, formal requirements, or funding. Customer Memoranda without two signatures will NOT be accepted. Rarely, the End-User and Customer will be the same organization/individual. The organization/individual must sign TWICE.

AF End-User Suitability. Briefly describe the AF End-User signatory’s appropriateness for this effort.

AF Customer Suitability. Briefly describe the AF Customer signatory’s appropriateness for this effort.

(Handwritten/Digital Signature) (Handwritten/Digital Signature)

DAF CUSTOMER DAF End-User

FIRST MI LAST, Rank/Grade, USAF FIRST MI LAST, Rank/Grade, USAF

Attachment 1a: Schedule of Milestones (required) Attachment 1b: Non-Proprietary Work Plan (required)

Attachment 1c: TPOC Designation Letter (informational; do not include in the signed memo) Attachment 1d: Phase

III Transition Resources (do not include in signed memo)

Attachment 1e: SBIR/STTR Definitions and Suitability Resources (do not include in signed memo)

ATTACHMENT 6a - SCHEDULE OF MILESTONES

SBIR/STTR funds will not exceed \$1,250,000.00

The below chart should detail the proposed milestone list. Milestones will correspond to a measurable event's completion, e.g., baseline execution plan, test plan, prototype production or a component thereof, final report, etc. Status reports shall not be milestones. The milestone description should indicate demonstrated completion. Associated milestone payments must reflect comprehensive completion costs.

<u>TASK</u> <i>Max 15 milestones</i>	<u>EXPECTED DELIVERY (MONTH AFTER CONTRACT AWARD)</u> <i>Please follow the Period of Performance in the solicitation.</i>	<u>DELIVERABLE</u>	<u>ACCEPTANCE CRITERIA</u>	<u>PAYMENT</u> <i>Max SBIR/STTR funds \$1.25M; non-SBIR/STTR Federal funds, which have no max, must be identified. Do not include Phase III/private funds.</i>
NOTE – All milestones in this table are examples only. (EXAMPLE) 01 – Deliver 5 working prototypes of the Flux Capacitor.	Award + 2 months	Produce, test, and deliver 5 working prototypes of the final design for the Flux Capacitor along with the detailed design package drawings.	The DAF end-user will physically accept the adapted widgets	\$100,000 (DAF Customer 3600)
(EXAMPLE) 02 - Deliver 3 adapted commercial widgets	Award + 4 months	Three adapted widgets will be delivered to the DAF end- user, meeting the specifications XYZ.	The DAF end-user will physically accept the adapted widgets	\$250,000

ATTACHMENT 1b - NON-PROPRIETARY WORK PLAN

This section allows the Air Force Stakeholders to review the Work Plan before signing the Memorandum, rather than basing signature on proposed milestones only. The Work Plan will be incorporated into the Phase II award document, if selected.

ATTACHMENT 6c - TPOC DESIGNATION LETTER

(Info only; do not include in Memo.)



DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY (AFRL)

Date

MEMORANDUM FOR org/office symbol

ATTENTION TPOC name and rank/grade

FROM: AFRL/RGK

711 E Monument Street Dayton OH 45402

SUBJECT: Designation of AFWERX Technical Point of Contact (TPOC) Duties for Proposal
<<Proposal Number>>, entitled <<Proposal Title>>

Reference: Federal Acquisition Regulations (FAR) 2.101, Definitions

Defense Federal Acquisition Regulations Supplement (DFARS) Part 201.602-2, Responsibilities

IAW the above references, you are hereby designated the Technical Point of Contact (TPOC) for the subject proposal. A contract number will be designated upon award. You will be designated by name in the contract, when awarded, as the TPOC. If for any reason the proposal is determined non-awardable, the AFRL/RGK Contracting Officer (CO) will provide notification.

You are not authorized to discuss performance or any other matter related to the proposed effort until contract execution (i.e. award) is complete. Award notice will include appropriate POCs, including the CO, for award administration. (The undersigned may not be the permanently assigned CO.) The AFWERX Phase II Program Manager (PM) for this activity is Lt Col Ray Khan. Please use the p2@afwerx.af.mil for all PM-related correspondence.

As the designated TPOC, it is your responsibility to monitor the contractor's performance to ensure successful contract completion, including timely contract deliverable submission up to and including the final technical report. Specifically, you will be responsible for the following:

Monitor cost, technical, and schedule performance to identify and promptly inform the Phase II PM and CO of marginal or unsatisfactory performance; contractor's failure to meet delivery schedules; or any non-compliance with contract requirements. As the TPOC, you are not authorized to make commitments or changes affecting price, quality, quantity, delivery schedule/period of performance, scope of work, place of performance, or other terms and conditions of the contract/award, and may be personally liable for unauthorized acts. The CO is the only individual authorized to obligate Government funds or execute contract changes.

Ensure contractor personnel performing on-site at Government facilities are briefed by responsible and knowledgeable persons, e.g. the TPOC or facility leadership, on all required training, which may include security, emergency management, or accountability procedures.

Receive and accept contract deliverables. To ensure timely payment is made to the contractor after acceptance, please send an email to p2@afwerx.af.mil using the following format:

EMAIL SUBJECT: Company Name, Contract Number, Deliverable Approval/Rejection

EMAIL BODY:

Company Name

Contract Number

Deliverable or Milestone # (e.g., CLIN 003, ALIN 002, Milestone 0002, etc.)

Recommendation: Approve/Reject (select one)

Approval/Rejection (select one) Date:

Instructions to (company name): Upon receipt of this email, please submit your invoice for payment of the approved (deliverable) in WAWF

Other relevant information (optional)

Maintain close liaison with the identified Phase II PM and CO, as well as the Administrative CO, if other than AFRL/RGK.

Work with the contractor, installation, and other local Government organizations to gain required approvals/waivers and/or resolve execution issues including but not limited to security requirements, (e.g. CACs, DD254 coordination), program protection compliance, cybersecurity compliance, flight testing, unmanned aerial systems (UAS) regulations, and safety measures, when required. Coordinate these actions with the Phase II PM using p2@afwerx.af.mil.

Maintain records, including a copy of the contract and all modifications, unless available electronically; TPOC designation memorandum (this document); correspondence with the contractor; correspondence with the Contracting Officer; records of inspection activities and results; and all other documented actions taken as the TPOC. This information must be made available to the CO upon request. Contact the CO with any documentation questions.

If unable to perform the assigned TPOC duties, you are responsible for identifying a replacement TPOC. Notify the PM immediately to initiate the transition process. Replacement TPOCs must acknowledge their assumed responsibilities by signing a new version of this memorandum. Your role as TPOC expires upon official re-designation.. At that time, you must ensure all documentation is provided to the newly-designated TPOC.

During contract performance:

Do not discuss acquisition plans/strategies or provide advance information with potential to give one contractor an advantage over another in forthcoming procurements.

Do not instruct the contractor how to perform but rather of the contract/award's requirements.

Do not participate in the contractor hiring/termination processes.

It is essential you maintain a well-documented project folder/R&D case file. Each contract/order memorandum for record, other similar records, and other correspondence shall cite the contract number/order number. Copies of documentation and correspondence shall be furnished to the CO and others at the CO's request. Strictly adhere to restrictions regarding contractor proprietary data and business sensitive information. Contracting personnel are available for advice and guidance regarding fulfillment of contract terms.

You are required to complete on-line training modules. The training is accessible through Defense Acquisition University, <https://www.dau.edu>, and Air Force myLearning, <https://lms-jets.cce.af.mil/moodle/>. If the courses have been completed or annual recertification is current, the requirements are met. Training-related questions, completion certificates, or signed memorandum of completion should be sent to p2@afwerx.af.mil. Required course numbers:

ACQ 1010 Fundamentals of Systems Acquisition Management (8 hrs) or ACQ101 - DAU

CLC 106 Contracting Officer's Representative with a Mission Focus (3 hrs) - DAU

CLC 011 Contracting for the Rest of Us (2 hrs) - DAU

U.S. Air Force Annual Ethics Training - C08937 (1 hr) – myLearning

Additional training available for SBIR/STTR management and/or program-specific requirements, if specified by program office

Standards of Conduct and Conflicts of Interest. You are reminded that Government employment, as a public trust, requires DoD personnel to place loyalty to the country, ethical principles, and law above private gain and other interests. You must comply with DOD 5500.7-R, Joint Ethics Regulation. As a TPOC, you shall read and understand FAR 3.2, Contractor Gratuities to Government Personnel, to ensure official responsibilities are performed without actions which might result in, or reasonably be expected to create the appearance of, conduct prejudicial to the Government. You are required to avoid being placed in positions from which conflicts of interest might arise or justifiably be suspected. You are reminded the FAR and DFARS includes direction relating to gratuities. This direction applies not only to you but also to your family members. You are cautioned if any Standards of Conduct are violated, you will be subject to the full range of statutory and regulatory sanctions.

Upon award, a dually-signed copy of this designation shall be disseminated. Retain a copy of this designation letter for your official files. Should you have questions regarding this letter of appointment, please contact the Phase II PM and CO, to be identified upon contract execution.

By signing this memorandum, you acknowledge you understand, accept, and will abide by the full terms and conditions documented above.

TPOC SIGNATURE BLOCK

CO SIGNATURE BLOCK (AFWERX)

ATTACHMENT 6d - PHASE III TRANSITION RESOURCES

(Info only; do not include in Memo)

Transition strategies include, but are not limited to, the following:

DAF Customer may consider transitioning the SBIR/STTR technology by pursuing one or more specific strategies, e.g., an acquisition program transition plan, found in *Equipping Warfighter with Small Business Ingenuity: The Air Force SBIR/STTR Phase III Desk Reference* (v. 2.0, JAN 2019).

Transition plans may focus on risk reduction, new technology insertion, increased competition, equipment replacement, etc. The *Desk Reference* contains several sample transition strategies. The *Desk Reference* is found at: <https://www.dropbox.com/sh/eczamsk1bxf4dph/AAB5cDrWfd-0KQFDjaepNXMa?dl=0>

DAF Customer may consider transitioning the SBIR/STTR technology by awarding the company a Phase III contract via the Phase III special acquisition preference and/or through other small business programs such as Section 8(a), HUBZone, WOSB, or SDVOSB. This Phase III contract may be for further development, testing, evaluation, or production/delivery.

DAF Customer may consider transitioning the SBIR/STTR Technology into their acquisition program(s) via stated preference for SBIR/STTR subcontractors in solicitations for contracts, orders, or assistance instruments. Evaluation criteria may be written to provide additional consideration for companies having searched for and entered into sub-agreements with SBIR/STTR Phase I, II, or III awardees whose technologies are pertinent to the solicited effort.

DAF Customer may consider transitioning the SBIR/STTR technology by awarding the SBIR/STTR company, or a team including the SBIR/STTR company, a Phase III assistance instrument or other transaction with or without a follow-on procurement, e.g., grant, cooperative agreement, or other transaction for prototype agreement with or without a follow-on production contract.

DAF Customer may consider transitioning the SBIR/STTR technology by supporting funding and/or other assistance for the SBIR/STTR company under the Defense Production Act (DPA) and/or the Air Force's/other Federal agency's Mentor-Protégé Program (MPP).

ATTACHMENT 6e - SBIR/STTR DEFINITIONS & SUITABILITY RESOURCES

(Info only; do not include in Memo.)

Identifying Research, Development, Testing, and Evaluation (RDT&E) in SBIR/STTR Proposals

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 (Oct 2020), and DoD Financial Management Regulation (FMR), Vol. 2A, Chapter 1, Section 0102, *Funding Policies* (June 2004, as amended). Subject to programmatic phase conditions, SBIR/STTR awards are made for research, development, test and evaluation (RTD&E) efforts.

Phase I and Phase II Conditions: Consistent with 15 USC 638 and Combined SBIR/STTR Policy Directive (2019, both Phase I and Phase II awards are aimed at furthering “scientific and technical merit and feasibility” of ideas in the proposals. The object of Phase I is to conduct feasibility-related experimental or theoretical research/research and development related to agency’s described broad or narrow requirements, as to determine the scientific and technical merit and feasibility of the proposed effort and the quality of performance of the offeror. The object of Phase II is to continue the research/research and development effort from the completed Phase I (or from prior non-SBIR/STTR research in case of Direct-to-Phase II award). 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 that the offeror’s idea has sufficient scientific and technical feasibility and merit despite the lack of Phase I award.

Research or Research and Development (R/R&D): Any activity that is: (1) A systematic study directed toward greater knowledge or understanding of the subject studied; (2) a systematic study directed specifically toward applying knowledge and innovation to meet a recognized but unmet need; or (3) a systematic application of knowledge and innovation 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. The term "research and development (R&D)" is intended broadly to include the work performed under a funding agreement with the government. It includes R&D in all fields, including the physical sciences, engineering, etc. Research is systematic study directed toward *fuller scientific knowledge or understanding* of the subject studied. Development is systematic use of *the knowledge and understanding gained from research*, for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes.

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 that significantly changes the performance envelope of the end item. 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, incremental 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.

INSTRUCTIONS TO OFFERORS: *The offeror shall describe its proposed RDT&E effort, i.e., is it research? If so, explain. It is development? Based on the research, what constitutes the development activity?*

Developing COTs or Commercial Product: If adapting a commercial product/process, what is the intended modification to the COTs or commercial product? Explain.

The offeror's proposal must also identify scientific and technical baseline based on relevant literature, and describe the RDT&E effort's advancing this baseline. As part of the Direct to Phase II proposal, the offeror shall provide information sufficiently enable thing agency to make a scientific and technical feasibility and merit determination IAW 15 USC 638(cc). The Team discussion shall address qualifications for conducting RDT&E, as well as commercialization.

Tie to Defense Acquisition Program: In furtherance of 15 USC 638(y), the offeror must identify any Defense Acquisition Program to which the proposal is tied, if known. This information will be used to identify any resulting Phase I or Phase II award in the Federal Procurement Data System (FPDS). If this information is not known, the proposal shall so state.

**ATTACHMENT 7 - AF X22.4 SBIR CSO
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 8- PROPOSAL CHECKLIST

This checklist is for informational purposes only to aid offerors in preparing proposals. Offerors 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 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, 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)

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 Offeror'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

The following are common reasons for which proposals are disqualified. It is not a comprehensive list of potential reasons for disqualification. Offerors shall read ALL solicitation instructions to ensure compliance.

- **System for Award Management is not properly updated at time of submission (Section II.M)**
- **Customer Memorandum missing required number of signatures and/or content (Attachment 1)**
- **Minimum Performance Percentage of Work is not allocated properly (Section II.A.2)**

- **Work as proposed does not meet the definition of Research and Development required for funding (Section VI.P)**
- **Proposal submitted beyond deadline. In the event of technical difficulty contact Component Support (Table 1) immediately.**
- **Proposal submitted exceeds the maximum SBIR funding amount. (Table 2)**

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/>

Attachment 9
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: