

**AIR FORCE (AF) X21.2**  
**SMALL BUSINESS INNOVATION RESEARCH (SBIR)**  
**COMMERCIAL SOLUTIONS OPENING (CSO)**  
**AMENDMENT 2**  
**28 April 2021**

The AF X21.2 SBIR CSO is hereby amended as follows:

In Section 11.3, Appendix C – Direct to Phase II White Paper Instructions, Section 1, Technical Summary, item 1.4, Phase I “Feasibility Study” Results, the fifth, sixth, and seventh bullets are hereby deleted in their entirety. There is NO REQUIREMENT for a Customer Memorandum to be included in the Direct to Phase II proposals submitted under Topic AF212-DCSO1, Air Force Nuclear Weapons Center Pitch Day.

All other CSO information remains unchanged and in full effect.

**AIR FORCE (AF) X21.2**  
**SMALL BUSINESS INNOVATION RESEARCH (SBIR)**  
**COMMERCIAL SOLUTIONS OPENING (CSO)**  
**AMENDMENT 1**  
**26 April 2021**

The AF X21.2 SBIR CSO is hereby amended as follows:

In Section 5.3.b(2), Phase I Proposal Instructions, Content, second paragraph, is changed to read, “Full instructions for the Slide Deck are provided in Appendix A. A sample slide deck is provided at Attachment 1. This information applies to Topic AF212-CSO1, Phase I Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear AF Stakeholder Need **ONLY**.”

As found in Topic AF212-CSO2, Advanced Manufacturing for Rapid, Affordable-Attritable Airframes, it states, “Please follow Section 5.3, ‘Phase I Proposal Instructions’ when preparing proposals, with the exception of Section 5.3.b(1). Instead, the technical volume under this topic will consist of a white paper not to exceed 15 pages and, if needed to provide additional information, a slide deck not to exceed 15 charts. The sample slide deck at Attachment A may, but is not required to, be used as a template.” This information remains UNCHANGED.

All other CSO information remains unchanged and in full effect.

**DEPARTMENT OF THE AIR FORCE (AF)**  
**SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM**  
**X21.2 SBIR COMMERCIAL SOLUTIONS OPENING (CSO)**

*This solicitation applies to Topics AF212-CSO1, AF212-CSO2, and AF212-DCSO1*

**21 April 2021:** Issued for pre-release

**19 May 2021:** Begin accepting proposals

**17 June 2021:** 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. **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, register at <https://af-ventures.com/> and <https://www.afwerx.af.mil/join.html>.

**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](mailto:usaf.team@afsbirsttr.us). Requests for support with using the Defense SBIR/STTR Innovation Portal (DSIP) can be directed to the DSIP Help Desk by email at [DoDSBIRSupport@reisystems.com](mailto:DoDSBIRSupport@reisystems.com). **Support requests can be submitted at any time and will be addressed in the order received during normal operating hours of Monday through Friday, 9:00 a.m. to 5:00 p.m. ET.**

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14.0 APPENDICES

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Attachments:

- 1. X21.2 Sample Slide Deck (Topics AF212-CSO1, CSO2, and DCSO1) (can be accessed at: <https://rt.cto.mil/rtl-small-business-resources/sbir-sttr/>)
- 2. X21.2 Funds Matching Form (Optional for AF212-DCSO1)
- 3. Contractor Certification Regarding Prohibited Video Surveillance and Telecommunications Services and Equipment (MANDATORY Template for All Topics)
- 4. Foreign Ownership or Control Disclosure (MANDATORY Template, if applicable, for All Topics)

## 1.0 INTRODUCTION

The Air Force (AF) invites small business firms to submit proposals under this CSO for the Small Business Innovation Research (SBIR) Program. Firms with the capability to conduct research and development (R&D) in the AF-related topics described in Section 13.0 and to commercialize the results are encouraged to participate.

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 2018-O0016 is considered competitive for the purposes of 10 U.S.C. 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 AF 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 AF 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 AF, as well as business information and upcoming outreach/conference events. Other informative sites include the Small Business Administration (SBA), [www.sba.gov](http://www.sba.gov), and Procurement Technical Assistance Centers, <https://www.ptac-us.org>. These centers provide Government contracting assistance and guidance to small businesses, typically at no cost.

## 2.0 PROGRAM DESCRIPTION

### 2.1 Objectives

The AF 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 the offeror feels their solution does not fit within one of the listed capabilities, they 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&timestamp=1555530064092>

The Air Force process is unique as it is incumbent on small business founders to identify and understand their Government customers and their mission needs. Some methods for exploring Defense needs and opportunities are available below:

- a) **Air Force Focus Areas List** - Focus Areas are collected from across the Air Force and maintained at <https://www.afwerx.af.mil/afventures.html>. If applicable, please reference relevant Focus Area ID number(s) in the Technical Volume's header. Referenced Focus Areas will not be used during the peer review.
- b) **Air Force Tech Connect** - <https://airforcetechconnect.org/>
- c) **Small Business Specialist** - <https://www.airforcesmallbiz.af.mil/Small-Business/Locate-Specialist/>
- d) **Procurement Technical Assistance Centers (PTACs)** - <https://www.sba.gov/local-assistance/find/?type=Procurement%20Technical%20Assistance%20Center>
- e) **AFRL/RG Challenges** - <https://afwerxchallenge.com/>
- f) **Defense Innovation Marketplace** - <https://Defenseinnovationmarketplace.dtic.mil>

The AF SBIR Program follows the policies and practices of the Small Business Administration (SBA) SBIR/STTR Policy Directive (1 Oct 2020), found at

[https://www.sbir.gov/sites/default/files/SBA\\_SBIR\\_STTR\\_POLICY\\_DIRECTIVE\\_OCT\\_2020\\_0.pdf](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, dated 20 July 2020, 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. Any offeror submitting a proposal under this BAA will be required to disclose via self-report any foreign ownership or control. Offerors shall also require any proposed subcontractors included in their proposal under this BAA to disclose via self-report any foreign ownership or control. 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. 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. Proposers 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 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, discreet 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 Consolidated Topic Information:** All chart content applies to Topics AF212-CSO1. Award amount, technical/reporting periods, and additional information specific to Topic AF212-CSO2 and AF212-DCSO1 may be found in the topic write-ups.

CHART 1	Phase I		Phase II			
Technical Volume (Vol 2)	Award Amnt	Technical & Reporting Duration	Technical Volume (Vol 2)	Additional Info (Vol 5)	Technical & Reporting Duration	Initial Award Amount
NTE 25-slide deck (template attached)	NTE \$50K	NTE 3 mos, including 2 mos tech performance and 1 mo reporting	NTE 15-pg. white paper	Signed Customer Memo using MANDATORY template	NTE 15 mos, including 12 mos tech performance and 3 mos reporting	NTE \$750K SBIR funds; no non-SBIR Govt or private investment cap

## 3.0 DEFINITIONS

The following definitions from the SBA SBIR/STTR Policy Direction, 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 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](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**

- (1) Any new technology, process, or method, including research and development; or
- (2) 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 instruments, 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:

- d. Any research, development, test, evaluation or training (including experimentation) involving an animal or animals.
- e. 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.
- f. 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](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](http://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.

## 4.0 PROPOSAL FUNDAMENTALS

Unless otherwise specified, this section applies to Phase I and II proposals, including Direct to Phase II.

### 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. Proposers 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. This applies to the SBIR-funded portion of the effort ONLY. The SBIR-funded work percentage calculation considers both direct and indirect costs after removal of the SBC's proposed profit.
- c. 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 at another organization.
- d. All Phase I and Phase II R/R&D work must be performed by the small business concern and its subcontractors and suppliers in the U.S.
- e. **Benchmarks.** Proposers 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 each year.
  - 1. For all proposers with greater than 20 Phase I awards over the past five fiscal years, excluding the most recent year (currently FY 2016-2020), the ratio of Phase II awards to Phase I awards must be at least 0.25.
  - 2. For all proposers with greater than 15 Phase II awards over the last ten fiscal years excluding the last two years (currently FY 2009-2019), 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.**Benchmarks.**

3. SBA is not compiling a list of companies deemed ineligible to submit proposals for new Phase I (or Direct-to-Phase II) awards based on failure to meet the Commercialization Benchmark requirement. This is subject to change; more information is found at <https://www.sbir.gov/performance-benchmarks>.

### 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. Proposers 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 SBIR/STTR Center of Excellence (CoE) 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. **Therefore, proposals not meeting the requirements as identified below will not be considered for award.**

#### 4.4.1 Registrations and Certifications.

Firms shall be registered in the DoD SBIR/STTR Innovation Portal (DSIP) to prepare and submit proposals, <https://www.dodsbirsttr.mil/submissions/login>.

Firms shall register in the System for Award Management (SAM), <https://www.sam.gov/>, to be eligible for proposal acceptance. Follow instructions therein to obtain a Commercial and Government Entity (CAGE) code and Dunn and Bradstreet (DUNS) number. Firms shall also verify “Purpose of Registration” is set to “I want to be able to bid on federal contracts or other procurement opportunities. I also want to be able to apply for grants, loans, and other financial assistance programs”, **NOT** “I only want to apply for federal assistance opportunities like grants, loans, and other financial assistance programs.” Firms registered to compete for federal assistance opportunities 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.

SAM.gov will be incorporated into the modernized beta.SAM.gov environment on May 24, 2021. Once integrated, legacy SAM.gov will be decommissioned, the new environment will retire the “beta”, and the system will be renamed SAM.gov. Once the integration occurs, the system will provide a modern portal for entities to register, update, renew, and check registration status. Core functions of SAM and core data will not change. No action is required from entities with active registrations. The process for registering to do business with the Government will not change.

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 (see Section 3.3) 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 not eligible to submit proposals under this CSO.

#### ***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 3.12).

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 3.11).

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 Principal Investigator (PI) and Corporate Official (CO) indicated on the Proposal Cover Sheet (Volume 1) will be notified by email regarding proposal selection or non-selection. The SBC will receive a notification for each proposal submitted. Please read each notification carefully and note the proposal number referenced. **If changes occur to the company mail or email address(es) or points of contact after proposal submission, the information must be provided to the AF at [usaf.team@afsbirsttr.us](mailto:usaf.team@afsbirsttr.us). The message shall include the subject line, “X21.2 Address Change”.**

**Feedback requests will be accommodated for D2P2 offerors with proposals determined “Not Selectable” ONLY.** Feedback will not be provided for Phase I proposals determined “Not Selectable” nor for D2P2 proposals determined “Selectable – Not Funded”. Feedback requests shall be submitted in writing within 30 calendar days after non-selection notification receipt. Instructions to request feedback will be included in the post-selection notification. Feedback requests received more than 30 calendar days after non-selection notification receipt will not be fulfilled. Unsuccessful offerors are entitled to no more than one feedback response for each proposal.

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. Requests shall include the company name, solicitation number, proposal number, and contact information, including name, title, email address, and phone number, for primary and alternate company representatives. **Requests not including this information will be 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 CSO Contracting Officer 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, Ms. Kris Croake, [kristina.croake@us.af.mil](mailto:kristina.croake@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 Ms. Croake, 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 I Award Information***

- a. Number of Phase I Awards.** It is anticipated the Air Force will make 300 Phase I awards under Topic AF212-CSO1. The actual number of awards will depend upon funds availability. The Government reserves the right to make no awards. The Federal Government is not responsible for any costs incurred before award receipt.

- b. **Type of Funding Agreement.** Phase I awards will be made as firm-fixed-price purchase orders.
- c. **Dollar Value.** Maximum Phase I award value will be \$50,000, unless otherwise stated in the specific topic.
- d. **Timing.** It is intended peer review, proposal selection, negotiations, and award will be complete within 180 calendar days of solicitation close.

#### 4.4.14 *Phase II Award Information*

- a. **Number of Awards.** The actual number of Phase II awards will depend upon funds availability. The Government reserves the right to make no awards. The Federal Government is not responsible for costs incurred before award receipt.
- b. **Type of Funding Agreement.** Phase II awards are executed as firm-fixed-price purchase orders 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, consistent with normal profit margins provided to profit-making firms for R/R&D work.” Therefore, zero dollar profit proposals cannot be accepted. Awards may be negotiated; award type is at the Contracting Officer’s discretion.
- c. **Average Dollar Value.** Maximum Phase II contract value is found in Section 2.3, Chart 1.
- d. **Timing.** It is intended that peer review, proposal selection, negotiations, and award will be complete within 180 calendar days of solicitation close.

#### 4.4.15 *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](mailto:usaf.team@afsbirsttr.us).
2. **DoD SBIR/STTR Help Desk** is prepared to address general questions about the proposal preparation and electronic submission process and other DSIP-related areas. The Help Desk may be contacted via email at [DoDSBIRSupport@reisystems.com](mailto:DoDSBIRSupport@reisystems.com). Requests will be addressed in the order received during normal operating hours of Monday through Friday, 9:00 a.m. to 5:00 p.m. ET.
3. **Topic Q&A.** Once DSIP is opened for proposal receipt on **19 May 2021**, the only direct contact between potential offerors and Topic Authors may be when the latter is responding to a question submitted during the prerelease period. Proposers may submit written questions through the Topic Q&A at <https://www.dodsbirsttr.mil/submissions/login>. All questions and answers are posted electronically for general viewing. Identifying information for the questioner and respondent is not posted.

Questions are limited to those related to improving topic requirement understanding. Other questions, e.g., asking for advice or guidance on solution approach, will not receive a response. Proposing firms may locate the topic about which they have technical question by using the Topic Search feature on DSIP. 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).

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.

**Proposing firms should monitor the Topic Q&A during the CSO period. Proposing firms should also frequently monitor DSIP for solicitation/topic updates and amendments.**

4. **AF SBIR/STTR Open Topic Updates and Notices.** To receive notifications about AF Ventures and other AF innovation opportunities, please register at <https://af-ventures.com/> and <https://www.afwerx.af.mil/join.html>.
5. **‘Ask Me Anything (AMAs).** For information regarding these webinars, please visit <https://www.afwerx.af.mil/sbir.html>. Tentative dates for the three AMAs are 30 April, 21 May, and 4 June; all will begin at 12:00 EST.

#### **4.4.16 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 (2020), and DoD Financial Management Regulation (FMR), Vol. 2A, Chapter 1, Section 0102, *Funding Policies* (June 2004, as amended).

##### **Phase I and 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 I is to conduct feasibility-related experimental or theoretical R/R&D 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 R&D 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 the offeror’s idea has sufficient scientific and technical feasibility and merit despite the lack of Phase I award.

##### **a. 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.

b. **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).

c. **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 of funds are 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.

d. **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 included in Volume 5, Supporting Documents, of the proposal.

#### 4.4.17 **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.

#### 4.4.18 **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/](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](mailto:hotline@dodig.mil).



#### **4.4.19      *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#](https://www.sbir.gov/state_services?state=105813#) for further information.

#### **4.4.20      *Use of Support Contractors for the AF SBIR Program***

Proposals may be handled for administrative purposes only by support contractors, including TEC Solutions, Inc., MonTech, Inc., APEX, Oasis Systems, Riverside Research, Peerless Technologies, HPC- COM, Mile Two, Wright Brothers Institute, 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 4.12 with concerns regarding the listed contractors.

#### **4.4.21      *Innovation in Manufacturing***

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

#### **4.4.22      *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.

#### **4.4.23      *Proposal Preparation Tips***

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

- a. Read and follow all CSO instructions.
- b. Register the firm on the secure, password-protected DSIP system and, as instructed, prepare the firm's submission. The Air Force will only accept proposals submitted via DSIP.
- c. 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 "I want to be able to bid on federal contracts or other procurement opportunities. I also want to be able to apply for grants, loans, and other financial assistance programs", NOT "I only want to apply for federal assistance opportunities like grants, loans, and other financial assistance programs." Firms registered to compete for grants federal assistance opportunities only at the time of proposal submission will not be considered for award. **Begin this process early, as it can take more than 30 days for registration to be issued or updated.**
- d. Register the firm with SBA's Company Registry at [www.sbir.gov](http://www.sbir.gov) and provide the SBA SBC

- Identification for each proposal Cover Sheet submitted in response to this CSO.
- e. Ensure cost adheres to Section 5.3.d (Phase I) or 9.3.d (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 it IS represented in the Cost Volume.
  - f. Ensure the Project Abstract and other Cover Sheet content DOES NOT contain proprietary information.
  - g. Mark proprietary Technical Volume information as instructed in 5.2 (Phase I) or 9.3 (D2P2).
  - h. Ensure Technical Volume content includes the items in Section 5.2.c (Phase I) or 9.4.b (D2P2).
  - i. Ensure the proposal is submitted to the correct Command (AFWERX or AFNWC) and topic number. Submission to the wrong Command will result in disqualification.

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](mailto:usaf.team@afsbirsttr.us).



## 5.0 PHASE I PROPOSAL

### 5.1 Introduction

A complete proposal consists of the following:

**0. Registration**

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

**1. Volume 1: Proposal Cover Sheet**

- 1.1. CAGE, DUNS
- 1.2. Certification Questions
- 1.3. Business Information
- 1.4. Proposal Information
- 1.5. Contact Information

**2. Volume 2: Technical Volume**

- 2.1. Up to 25 Page Slide Deck (Sample slide deck at Attachment 1.)

**3. Volume 3: Cost Volume**

- 3.1. Direct Labor Costs
- 3.2. Direct Material Costs
- 3.3. Other Direct Costs

**4. Volume 4: Company Commercialization Report**

**5. Volume 5: Supporting Documents**

- 5.1. Coversheet Supplement
- 5.2. Supplemental Cost Information
- 5.3. Resumes of Key Personnel
- 5.4. \*Non-Proprietary\* Work Plan
- 5.5. DoD Funding Agreement Certification (Signed)
- 5.6. DD Form 2345, Militarily Critical Technology Data Agreement
- 5.7. Letters of Support
- 5.8. Allocation of Rights
- 5.9. Lifecycle Certification
- 5.10. Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)
- 5.11. Foreign Ownership or Control Disclosure (Offerors must review Attachment 5 to determine applicability)

**6. Volume 6: Fraud, Waste and Abuse Training**

**NOTE: Refer to [Chart 1](#) for AF212-CSO1 submission requirements. Requirements for other topics may be found in the topic material in Section 13.0.** 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 proposers are required to submit Company Commercialization Report (CCR) (Volume 4); Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (Volume 5); Foreign Ownership or Control Disclosure (proposers must review Attachment 5 to determine applicability) (Volume 5); and Fraud, Waste and Abuse training (Volume 6).

## 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:

- (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.

## 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 \$50,000.

### a. 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.

### b. 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.**

Full instructions for the Slide Deck are provided in Appendix A. A sample slide deck is provided at Attachment 1. The white paper is optional and the content is at the offeror's discretion; therefore, a template is not provided.

### **c. 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 that information. 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 Chart 1) 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 submitted in Volume 5, Supporting Documents, under the "Additional Cost Information" dropdown options..

- (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. 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 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.

**d. Company Commercialization Report (Volume 4):**

The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. The Company Commercialization Report (CCR) is required for Phase I, Phase II, and Direct to Phase II proposals. During proposal submission, proposing firms with no prior DoD or non-DoD SBIR/STTR awards can select “No” for the question “Do you have a new or revised Company Commercialization Report to upload?”.

Proposing firms with prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards must complete the CCR, regardless of whether the project has any commercialization to date, by logging into their account at <https://www.sbir.gov/>. To view or print the information currently contained in the Company Registry Commercialization Report, navigate to My Dashboard => My Documents. To create or update the commercialization record, from the company dashboard, scroll to My Commercialization and click the Create/Update Commercialization tab under Current Report Version. Please refer to the Instructions and Guide documents in this Dashboard section for more information.

After certification and submission on SBIR.gov, click the Company Commercialization Report .pdf under the Dashboard My Documents section and download. The file must be uploaded to Volume 4 CCR area in

the Firm Information section of DSIP by the Firm Admin. To confirm upload, all other firm users will have read-only access to the CCR from the proposal submission page.

**WARNING:** Uploading a new Company Commercialization Report (CCR) under the Firm Information 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 previously certified and submitted Phase I or Direct to Phase II proposals under ***any*** still-open BAA or CSO, those proposals will be automatically reopened. Those proposals must be recertified and resubmitted. If the proposals are not recertified and resubmitted, they will not be considered fully submitted nor will they be evaluated.

#### **e. 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.

The following documents apply to Volume 5:

- Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)
- Foreign Control or Ownership Disclosure (Offerors must review Attachment 5; if applicable, inclusion in Volume 5 is REQUIRED)

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 should 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](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. **Cost Match/Share:** Phase I funding commitments/cost share are 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 I 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 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. Some specific items that are suitable for inclusion in a Letter of Support are: the name of organization 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. 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>

**f) 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, proposers 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.

#### **g) Foreign Ownership or Control Disclosure**

Proposers must review Attachment 5, Foreign Ownership or Control Disclosure, to determine applicability. If applicable, an authorized firm representative must complete and sign the document. The completed and signed disclosure must be uploaded to proposal Volume 5.

#### **h) 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 can be found in the Volume 6 section of the proposal submission module in DSIP and must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline. FWA training must be completed by one DSIP firm user with read/write access (Proposal Owner, Corporate Official or Firm Admin) on behalf of the firm.

**NOTE TO PHASE I OFFERORS:** Inclusion of a Customer Memorandum will be mandatory for the Phase II proposals under Topic AF212-CSO1 **ONLY**. A mandatory template will be made available. 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 8.0, Phase II Review Criteria. Phase II proposals without a signed Customer Memorandum will not be considered for award.



## 6.0 PHASE I REVIEW 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 under Topic AF212-CSO1 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 will also be considered.
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 consultant qualifications to execute the proposed approach.

Price reasonableness 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 conclusions solely on proposal content. 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.
- IAW EO 13329, proposals advancing innovation in U.S. small business manufacturing are given high priority.
- The Energy Independence and Security Act of 2007 (Act), 19 December 2007, P.L. 110-140, prioritizes energy efficiency/renewable energy system R&D projects. Proposals from eligible US-owned SBCs accomplishing biomedical research in energy efficiency/renewable energy systems are encouraged.
- Total cost to the Government may be considered to determine the successful offeror when multiple proposals are determined equal in technical merit.

\*Evaluation criteria for all other topics are included in the Topic Descriptions located in Section 13.0

## 7.0 PHASE II PROPOSAL

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 AF STTR Program management. This section is for informational purposes for Phase I awardees. A more specific letter Request for Proposal will be provided to all Phase I awardees Section 7.1).

### 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 5.4.c(11).

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 and the STTR Policy Directives 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. The transition may be proposed prior to award or during Phase II performance. Agency disapproval of a change request shall not be grounds for granting relief from contractual performance requirements. All approved transitions 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 for topic AF212-CSO1, AFRL/RQ for topic AF212-CSO2 and AFNWC for AF212-DCSO1. **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.

## 8.0 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 under Topic AF212-CSO1 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.
  - 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 1), 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 9.0) may be indicators of the appropriateness, relevance, and specificity of an identified Defense Need. Adequacy of the proposed effort and its relationship to fulfilling the identified Defense Need.
3. 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.

Price reasonableness 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 conclusions solely on proposal content. 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.
- IAW EO 13329, proposals advancing innovation in U.S. small business manufacturing are given high priority.
- The Energy Independence and Security Act of 2007 (Act), 19 December 2007, P.L. 110-140, prioritizes energy efficiency/renewable energy system R&D projects. Proposals from eligible US-owned SBCs accomplishing biomedical research in energy efficiency/renewable energy systems are encouraged.
- Directly related Phase II funding commitments from non-SBIR Government sources may be considered to determine the successful offeror when multiple proposals are determined equal in technical merit.

\*Evaluation criteria for all other topics are included in the Topic Descriptions located in Section 13.0

## 9.0 DIRECT TO PHASE II (D2P2) 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 9.7. 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.** Documentation of this information is further discussed in Appendix C, Direct to Phase II White Paper Instructions.

A complete proposal consists of the following:

#### 0. Registration

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

#### 1. Volume 1: Proposal Cover Sheet

- 1.1. CAGE, DUNS
- 1.2. Certification Questions
- 1.3. Business Information
- 1.4. Proposal Information
- 1.5. Contact Information

#### 2. Volume 2: Technical Volume

- 2.1. Slide Deck NTE 25 Charts (Sample at Attachment 1; contents discussed in Appendix A.)
- 2.2. White Paper NTE 15 Pages (Contents discussed in Appendix C.)

3. **Volume 3: Cost Volume**
  - 3.1. Direct Labor Costs
  - 3.2. Direct Material Costs
  - 3.3. Other Direct Costs
  - 3.4. Second Phase Funding Commitments and/or Cost Share, if applicable
4. **Volume 4: Company Commercialization Report**
5. **Volume 5: Supporting Documents**
  - 5.1. Coversheet Supplement
  - 5.2. Supplemental Cost Information
  - 5.3. Resumes of Key Personnel
  - 5.4. \*Non-Proprietary\* Work Plan
  - 5.5. DoD Funding Agreement Certification (Signed)
  - 5.6. DD Form 2345, Militarily Critical Technical Data Agreement (if applicable)
  - 5.7. Allocation of Rights (optional)
  - 5.8. Lifecycle Certification (required prior to award, if selected)
  - 5.9. SBIR/STTR Environment, Safety and Occupational Health (ESOH)
  - 5.10. Phase II Funding Commitment Documentation
    - 5.10.1. Phase II Fund Commitment Form (Optional template for Topic AF212-DCSO1 at Attachment 2.)
    - 5.10.2. Private Investment Letter (if applicable)
  - 5.11. Additional Letters of Support (if applicable)
  - 5.12. Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (REQUIRED)
  - 5.13. Foreign Ownership or Control Disclosure (Offerors must review Attachment 5 for applicability)
6. **Volume 6: Fraud, Waste and Abuse Training**

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.

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 Government and Private Funding Commitments

Proposers 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 “Volume 5” (this section).

For Governmental second phase commitments, or if the funds are to be applied directly to the D2P2 contract, the funds must be received by AFRL/RGF within 30 days of CSO closing. To initiate Governmental funding transfer, the interested Government organization should send an email to AFRL/RGF Incoming Documents mailbox, [AFRL.SBIR.STTR@us.af.mil](mailto: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.

For private investment, a letter as detailed in Section 9.4.e.11 must be submitted with the proposal. Additionally, the awardee must provide evidence of funds receipt within 90 days of award and provide it to the Government Agreements Officer. It is anticipated Phase II efforts with Federal second phase commitments will be awarded via FAR-based fixed price contracts. Proposed efforts with private investment may be awarded via Firm Fixed Price FAR-based contracts or OTs for Prototype. Award type determination is at the Contracting Officer's discretion.

**Additional Private Investment Reporting Requirement:** The Phase II final report for awards including private investment shall include a brief description in company format of investor funding expenditures in support of the project. This report shall be submitted by the deadline specified in the award document.

**9.3 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.

#### **9.4 Direct to Phase II Proposal Instructions**

A Direct to 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.

##### **a. 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.

Proposers will be required to disclose foreign ownership or control. Offerors must review Attachment 5 to determine applicability. If applicable, an authorized company representative must complete and sign the document. The completed, signed disclosure should be uploaded to proposal Volume 5.

**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, AFNWC (Topic AF212-DCSO1).

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.

## **b. Technical Volume (Volume 2)**

### **(1) Format**

**Type of File:** The Technical Volume is comprised of a slide deck not to exceed 25 charts and a white paper not to exceed 15 pages. It must be submitted as 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 25 charts; charts in excess of 25 will not be considered. The white paper is limited to 15 pages; pages in excess of 15 will not be considered.

**Layout:** Number all charts and pages consecutively. Each chart/page should contain the company name, topic number, and proposal number assigned by DSIP when the Cover Sheet was created. For the white paper, use type no smaller than 10-point on standard 8-1/2" x 11" paper with one-inch margins; the header may be included in the one-inch margin.

### **(2) Content**

For Direct-to-Phase II, the Technical Volume must include a slide deck and a white paper. Full instructions for the mandatory slide deck are provided in Appendix A and instructions for the mandatory white paper are provided in Appendix C.

## **c. 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 SBRF 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 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 submitted in Volume 5, Supporting Documents, under the "Additional Cost Information" dropdown option.

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. Estimation of travel costs need not be an overly onerous exercise, and actual travel cost may differ from 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-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
- 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.

**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 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, Kris Croake, [kristina.croake@us.af.mil](mailto:kristina.croake@us.af.mil).

**d. Commercialization Report (Volume 4)**

The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. The Company Commercialization Report (CCR) is required for Phase I, Phase II, and Direct to Phase II proposals. During proposal submission, proposing firms with no prior DoD or non-DoD SBIR/STTR awards can select "No" for the question "Do you have a new or revised Company Commercialization Report to upload?".

Proposing firms with prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards must complete the CCR, regardless of whether the project has any commercialization to date, by logging into their account at <https://www.sbir.gov/>. To view or print the information currently contained in the Company Registry Commercialization Report, navigate to My Dashboard => My Documents. To create or update the commercialization record, from the company dashboard, scroll to My Commercialization and click the Create/Update Commercialization tab under Current Report Version. Please refer to the Instructions and Guide documents in this Dashboard section for more information.

After certification and submission on SBIR.gov, click the Company Commercialization Report .pdf under the Dashboard My Documents section and download. The file must be uploaded to Volume 4 CCR area in the Firm Information section of DSIP by the Firm Admin. To confirm upload, all other firm users will have read-only access to the CCR from the proposal submission page.

**WARNING:** Uploading a new Company Commercialization Report (CCR) under the Firm Information 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 previously certified and submitted Phase I or Direct to Phase II proposals under *any* still-open BAA or CSO, those proposals will be automatically reopened. Those proposals must be recertified and resubmitted. If the proposals are not recertified and resubmitted, they will not be considered fully submitted nor will they be evaluated.

## e. 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.

Documents acceptable for inclusion in Volume 5 are:

- 1) **Coversheet Supplement:** The online coversheet asks many question, 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](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 lists, 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, Militarily Critical Technology Data Agreement:** 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) **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>.
  - 8) **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](https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/SBIR_Ph_II_ESOH_Questionnaire.pdf).
  - 9) **Phase II Second Phase Funding Commitment Documentation:** If proposed, include the following:
    - a. **A completed Phase II Funding Commitment form**, found at Attachment 2 (optional template)
    - b. **Private Investor/Non-SBIR Governmental Funding Documentation:**
      - Private investors must provide documentation commitment to provide Phase II funding in cash, contingent on selection for award. Milestones for private investment funding must be appropriately structured to avoid front-loading and unbalanced SBIR funds expenditure. Specifically, non-SBIR Government or private funds cannot be conditioned on expenditure of all or the majority of SBIR funds before non-SBIR Government or private funds are expended.
      - A page or less statement describing the investor’s (i) experience evaluating companies' ability to successfully commercialize technology; and (ii) the particular technology’s market assessment, including the company’s ability to bring it to market.
  - 10) **Additional Letters of Support:** Letters of support demonstrate 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.
- f. 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, proposers 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.

**g. Foreign Disclosure Addendum**

Proposers must review Attachment 5, Foreign Ownership or Control Disclosure, to determine applicability. If applicable, an authorized firm representative must complete and sign the document. The completed and signed disclosure must be uploaded to proposal Volume 5.

**h. 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 can be found in the Volume 6 section of the proposal submission module in DSIP and must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline. FWA training must be completed by one DSIP firm user with read/write access (Proposal Owner, Corporate Official or Firm Admin) on behalf of the firm.

## 10.0 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. 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 which are of descending importance:

1. The adequacy of the proposed effort and its relationship to fulfilling the Air Force Nuclear Weapons Center's needs.
2. The soundness, technical merit, and innovation of the proposed approach and the qualifications of the proposed Principal Investigators/Project Managers, supporting staff, and consultants to execute against the proposed approach.
3. The potential for commercial (Government or private sector) application 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.

Price reasonableness 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 conclusions solely on proposal content. 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.
- IAW EO 13329, proposals advancing innovation in U.S. small business manufacturing are given high priority.
- The Energy Independence and Security Act of 2007 (Act), 19 December 2007, P.L. 110-140, prioritizes energy efficiency/renewable energy system R&D projects. Proposals from eligible US-owned SBCs accomplishing biomedical research in energy efficiency/renewable energy systems are encouraged.
- Directly related Phase II funding commitments from non-SBIR Government sources may be considered to determine the successful offeror when multiple proposals are determined equal in technical merit.

## 11.0 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.

#### **Applicable Federal Acquisition Regulation (FAR) and/or Defense Federal Acquisition Regulation Supplement (DFARS) Clauses:**

- 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. **Disclosure of Information.** In accordance with FAR 252.204-7000, Government review and approval will be required prior to any dissemination or publication, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract except within and between the Contractor and any subcontractors, of unclassified and non-fundamental information developed under this contract or contained in the reports to be furnished pursuant to this contract.
- s. **Publication Approval.** Government review and approval will be required prior to dissemination 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.

- t. **Animal Welfare.** Awards involving research, development, test, evaluation, or training on vertebrate animals will incorporate DFARS clause 252.235-7002 or similar verbiage.
- u. **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.
- v. **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. 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. Disclosure of Ownership or Control by a Foreign Government. DFARS 252.209-7002, Disclosure Ownership or Control by a Foreign Government (JUN 2010), is incorporated into this solicitation. In accordance with DFARS 252.209-7002, any SBC submitting a proposal in response to this solicitation is required to disclose any interest in foreign government has in the SBC when that interest constitutes control by a foreign government, as defined in DFARS provision 252.209-7002. The SBC shall disclose such interest, by completing Attachment 5 to this solicitation, Foreign Ownership or Control Disclosure. If the SBC is a subsidiary, it is also required to disclose any reportable interest in a foreign Government of any entity that owns or controls the subsidiary, including immediate parent or intermediate parents, and ultimate parent.
- y. **Safeguarding Covered Defense Information Controls.** As prescribed in DFARS 252.204-7008, for covered contractor information systems that are not part of an information technology service or system operated on behalf of the Government, the SBC represents that it will implement the security requirements specified by National Institute of Standards and Technology (NIST) Special Publication (SP) 800-171, "Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations".
- z. **Limitations on the Use or Disclosure of Third- Party Contractor Reported Cyber Incident Information.** As required in DFARS 252.204-7009, the Contractor must agree that certain conditions apply to any information it receives or creates in the performance of a resulting contract that is information obtained from a third-party's reporting of a cyber incident pursuant to DFARS clause 252.204-7012, Safeguarding Covered Defense Information and Cyber Incident Reporting (or derived from such information obtained under that clause).
- aa. **Notice of NIST SP 800-171 DoD Assessment Requirements.** As prescribed by DFARS 252.204-7019, in order to be considered for award, the SBC is required to implement NIST SP 800-171. The SBC shall have a current assessment (see 252.204-7020) for each covered contractor information system that is relevant to the offer, contract, task order, or delivery order. The Basic, Medium, and High NIST SP 800-171 DoD Assessments are described in the NIST SP 800-171 DoD Assessment Methodology located at [https://www.acq.osd.mil/dpap/pdi/cyber/strategically\\_assessing\\_contractor\\_implementation\\_of\\_NIST\\_SP\\_800-171.html](https://www.acq.osd.mil/dpap/pdi/cyber/strategically_assessing_contractor_implementation_of_NIST_SP_800-171.html). In accordance with DFARS 252.204-7020, the SBC shall provide access to its facilities, systems, and personnel necessary for the Government to conduct a Medium or High NIST SP 800-171 DoD Assessment, as described in NIST SP 800-171 DoD Assessment Methodology, linked above. Notification of specific requirements for NIST SP 800-171 DoD assessments and assessment level will be provided as part of the component instructions, topic, or award.
- bb. **Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.** FAR 52.204-25 - 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 AND 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.

FAR 52.204-24 - 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.

- cc. **Disclosure of Ownership or Control by a Foreign Government.** In accordance with DFARS 252.209-7002, Disclosure of Ownership or Control by a Foreign Government (Jun 2010), any SBC submitting a proposal in response to this solicitation is required to disclose, by completing Attachment 5, Foreign Ownership or Control Disclosure, any interest a foreign Government has in. If the SBC is a subsidiary, it is also required to disclose any reportable interest concerning the SBC’s immediate, intermediate, or ultimate parent.

## 11.2 Basic Safeguarding of Covered Contractor Information Systems

FAR 52.204-21, Basic Safeguarding of Covered Contractor Information Systems, is incorporated into this solicitation. In accordance with FAR 52.204-21, the contractor shall apply basic safeguarding requirements and procedures when the contractor or a subcontractor at any tier may have Federal contract information residing in or transiting through its information system.

### **FAR 52.204-21 Basic Safeguarding of Covered Contractor Information Systems (JUN 2016)**

#### **a) Definitions.** As used in this clause -

*Covered contractor information system* means an information system that is owned or operated by a contractor that processes, stores, or transmits Federal contract information.

*Federal contract information* means information, not intended for public release, that is provided by or generated for the Government under a contract to develop or deliver a product or service to the Government, but not including information provided by the Government to the public (such as on public Web sites) or simple transactional information, such as necessary to process payments.

*Information* means any communication or representation of knowledge such as facts, data, or opinions, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual (Committee on National Security Systems Instruction (CNSSI) 4009).

*Information system* means a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information (44 U.S.C. 3502).

*Safeguarding* means measures or controls that are prescribed to protect information systems.

**(b) Safeguarding requirements and procedures.**

(1) The Contractor shall apply the following basic safeguarding requirements and procedures to protect covered contractor information systems. Requirements and procedures for basic safeguarding of covered contractor information systems shall include, at a minimum, the following security controls:

- (i) Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).
- (ii) Limit information system access to the types of transactions and functions that authorized users are permitted to execute.
- (iii) Verify and control/limit connections to and use of external information systems.
- (iv) Control information posted or processed on publicly accessible information systems.
- (v) Identify information system users, processes acting on behalf of users, or devices.
- (vi) Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.
- (vii) Sanitize or destroy information system media containing Federal Contract Information before disposal or release for reuse.
- (viii) Limit physical access to organizational information systems, equipment, and the respective operating environments to authorized individuals.
- (ix) Escort visitors and monitor visitor activity; maintain audit logs of physical access; and control and manage physical access devices.
- (x) Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.
- (xi) Implement subnetworks for publicly accessible system components that are physically or logically separated from internal networks.
- (xii) Identify, report, and correct information and information system flaws in a timely manner.
- (xiii) Provide protection from malicious code at appropriate locations within organizational information systems.
- (xiv) Update malicious code protection mechanisms when new releases are available.
- (xv) Perform periodic scans of the information system and real-time scans of files from external sources as files are downloaded, opened, or executed.

(2) **Other requirements.** This clause does not relieve the Contractor of any other specific safeguarding requirements specified by Federal agencies and departments relating to covered contractor information systems generally or other Federal safeguarding requirements for controlled unclassified information (CUI) as established by Executive Order 13556.

(c) **Subcontracts.** The Contractor shall include the substance of this clause, including this paragraph (c), in subcontracts under this contract (including subcontracts for the acquisition of commercial items, other than commercially available off-the-shelf items), in which the subcontractor may have Federal contract information residing in or transiting through its information system.

### **11.3 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.

## 11.4 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.

## 11.5 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.

## 11.6 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 restricted rights in noncommercial software and limited rights in noncommercial technical data during the period commencing with contract/Other Transaction award and ending after 20 years. This data should be marked with the restrictive legend specified in DFARS 252.227-7018 or similar. Upon expiration of the 20 year restrictive license, the Government has Government Purpose Rights in the SBIR data. During the license period, the Government may not release or disclose SBIR data to any entity other than its support services contractors except (1) for evaluation purposes; (2) as expressly permitted by the contractor; or (3) use, release, or disclosure is necessary for emergency repair or overhaul of Government-operated items. See DFARS clause 252.227-7018, "Rights in Noncommercial Technical Data and Computer Software – Small Business Innovation Research (SBIR) Program" at [https://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=48%3A3.0.1.8.48#se48.3.252\\_1227\\_67018](https://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=48%3A3.0.1.8.48#se48.3.252_1227_67018). If a proposer plans to submit assertions IAW DFARS 252.227-7018 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.

## 11.7 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.

## 11.8 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](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](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.

d. **252.225-7973 Prohibition on the Procurement of Foreign-Made Unmanned Aircraft Systems—Representation. (DEVIATION 2020-O0015)**

(a) *Prohibition.* Section 848 of the National Defense Authorization Act for Fiscal Year 2020 (Pub. L. 116-92) prohibits DoD from using or procuring—

- (1) An unmanned aircraft system (UAS), or any related services or equipment, that—
  - (i) Is manufactured in the People's Republic of China or by an entity domiciled in the People's Republic of China;
  - (ii) Uses flight controllers, radios, data transmission devices, cameras, or gimbals manufactured in the People's Republic of China or by an entity domiciled in the People's Republic of China;
  - (iii) Uses a ground control system or operating software developed in the People's Republic of China or by an entity domiciled in the People's Republic of China; or
  - (iv) Uses network connectivity or data storage located in, or administered by an entity domiciled in, the People's Republic of China; or
- (2) A system for the detection or identification of a UAS, or any related services or equipment, that is manufactured—
  - (i) In the People's Republic of China; or
  - (ii) By an entity domiciled in the People's Republic of China.

- (b) *Representations*. By submission of its offer, the Offeror represents that it will not provide or use—
- (1) A UAS, as described in paragraph (a)(1) of this provision, in the performance of any contract, subcontract, or other contractual instrument resulting from this solicitation; and
  - (2) A system for the detection or identification of a UAS, as described in paragraph (a)(2) of this provision, in the performance of any contract, subcontract, or other contractual instrument resulting from this solicitation.

(End of provision)

## 12.0 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).

### 11.9 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 the AF SBIR/STTR Center of Excellence Finance Division (AFRL/SBRF) 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.

### 11.10 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.

## **13.0 Phase I and Direct to Phase II Topics**

- 13.1 AF212-CSO1** Phase I Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear AF Stakeholder Need
- 13.2 AF212-CSO2** Advanced Manufacturing for Rapid, Affordable-Attritable Airframes
- 13.3 AF212-DCSO1** Air Force Nuclear Weapons Center (AFNWC) Pitch Day



### **13.1 AF212-CSO1** Phase I Open Call for Innovative Defense-Related Dual-Purpose Technologies/ Solutions with a Clear AF Stakeholder Need

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

TECHNOLOGY AREA(S): Ground Sea, Nuclear, Weapons, Bio Medical, Sensors, Electronics, Chem Bio Defense, Space Platform, Materials, Information Systems, Human Systems, Air Platform Battlespace

**OBJECTIVE:** This is an Open Topic in partnership with AFWERX (AFRL/RGS). Phase I awards will have a maximum of \$50,000 SBIR funds. The period of performance will be three months, including two months technical performance and one month for reporting. Phase II awards will have a maximum of \$750,000 SBIR funds. The period of performance will be 15 months, including 12 months technical performance and three months for reporting. The objective of this topic is to explore Innovative Defense-Related Dual-Purpose Technologies not covered by other specific SBIR topics. Therefore, the topic will explore options for solutions outside the AF's current focus fields but could be useful. An additional objective is to grow the AF's industrial base. 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 later stage research and development efforts rather than "front-end" or basic R/R&D.

**DESCRIPTION:** The AF is a large and complex organization consisting of many functions with similar counterparts in the commercial sector. The AF wishes to explore innovative technology domains with demonstrated commercial value in the non-Defense sector, i.e., through existing products/solution, in order to obtain Air Force applications, i.e., Dual-Purpose Technologies/ Solutions. It is impossible to release SBIR topics addressing every AF technological area. Therefore, this topic seeks open ideas and technologies including topics not currently covered. It is important potential solutions have a high probability of keeping pace with the technological change. Thus, they should be closely tied to commercial technologies and solutions supporting the solution's development.

This topic is meant for non-Defense commercial solutions to innovatively adapt to meet DoD stakeholders' needs in a short timeframe, at a low cost. 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 an identified Defense Need.

3. The soundness, technical merit, and innovation of the proposed approach, as well as its differentiation from current customer alternative, and incremental progress toward fulfilling the identified Defense need. Includes the proposal Principal Investigator's/Project Manager's supporting staff, and consultants' qualifications to execute the proposed approach.

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.

In summary, proposals for this topic should demonstrate a high probability of identifying a product-market fit between an AF end user and the proposed solution through a non-Defense commercial solution's adaptation. This is initiated through proposal of R/R&D being applied to a mature non-Defense technical solution and a starting point to find an AF Customer.

The topic is truly 'Open' (agnostic of industry, technology, and problem area), to facilitate streamlined customer discovery for Phase I companies. In Phase I, certain problem areas for which potential customers and/or funding exists have already been identified.

The USAF S&T Strategy identifies five (5) Strategic Capabilities, listed below. 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. As applicable, the offeror should address the solution's connection to one or multiple of them in the Technical Volume.

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&timestamp=1555530064092>

\*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 their solution does not fit within one of the listed capabilities, they can reference the "BLUE SKY" strategic capability, including an explanation of the solution's ability to provide increased strategic capability within the context of USAF, national, and global constraints.

PHASE I: Determine, insofar as possible, the scientific and technical merit and feasibility of ideas that appear to have commercial potential. Additionally, must validate the product-market fit between the proposed solution and a potential AF stakeholder. Define a clear, immediately

actionable plan with the proposed solution and the AF customer. This feasibility study should directly:

1. Determine the prime potential AF end-user(s) and the scientific and technical R/R&D required for the non-Defense product to solve the organization(s) need(s).
2. Describe integration cost and feasibility with current mission-specific products.
3. Describe if and how the demonstration can be used by other DoD or Governmental customers

PHASE II: Continue RDT&E to develop, install, integrate, demonstrate, and/or test and evaluate a prototype system determined to be the most feasible solution during the Phase I study. This demonstration should focus specifically on:

1. Evaluating the proposed 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 AF need and how it can be modified for scale.
3. The proposed 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:

- a. To answer questions about this topic, AFRL/RGS will utilize Ask Me Anything video calls. Dates and time are found in Section 4.4.15.a.4.
- b. The SBIR CSO results in Firm Fixed Price purchase orders and Other Transactions for Prototype, NOT grants. Therefore, SAM.gov registration should reflect "I want to be able to bid on federal contracts or other procurement opportunities. I also want to be able to apply for grants, loans, and other financial assistance programs" for "Purpose of Registration". Firms registered to receive grants only will be ineligible.
- c. 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.
- d. If already registered in SAM, ensure the CAGE code, company name, address information, DUNS numbers, etc., are correct and current.
- e. Purchase orders shall be signed and emailed back to AFRL/SBRK at [sbrk.sprints@us.af.mil](mailto:sbrk.sprints@us.af.mil) within five business days of receipt or the award will not be issued.
- f. 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>

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

### 13.2 AF212-CSO2 TITLE: Advanced Manufacturing for Rapid, Affordable-Attritable Airframes

TECH FOCUS AREAS: General Warfighting Requirements (GWR)

TECHNOLOGY AREAS: Space Platform; Materials; Air Platform

OBJECTIVE: Develop and demonstrate a cost-effective combination of advanced manufacturing technologies that produce unitized, aerospace-grade-airframe assemblies in a fraction of the time required by current manufacturing strategies and technologies.

DESCRIPTION: Attritable aircraft are an emerging class of un-manned air vehicle that prioritize cost and efficacy for a limited mission set over multi-mission capability or durability and sustainment considerations typical of other USAF platforms. This dramatic shift in requirements affects every aspect of the design and fabrication process and provides opportunities previously unavailable to researchers and designers alike. One such opportunity is the partnering of various advanced fabrication techniques, such as additive manufacturing (AM), incremental sheet metal forming (ISMF), and out-of-autoclave composites that, with the proper investment, could provide increasingly unitized airframe structure at a reduced price point and time-to-market than current manufacturing paradigms. This solicitation seeks the demonstration of multiple advanced manufacturing technologies used in concert to produce highly-integrated or unitized skin-and-sub-structural assemblies for attritable aircraft. These technologies include, but are not limited to: metal AM, i.e., directed energy deposition, metal powder bed fusion, ultrasonic AM, etc., infusion and out-of-autoclave cure of dry fiber pre-forms, incremental sheet metal forming, composite AM, e.g., continuous fiber fabrication, reinforced filament fusion, fused filament fusion, etc., and hydroforming. The solution will:

- (1) Produce assemblies with gross dimensions on the scale of multiple feet in either width or length and several inches deep;
- (2) Meet typical aerospace dimensional tolerances and surface roughness callouts for lofted/conformal surfaces, e.g., skins, and sub-structure, e.g., spars, bulkheads, ribs, etc.;
- (3) Demonstrate the ability to repeatably produce components at rates competitive with, or faster than, conventional manufacturing alternatives;
- (4) Utilize conventional raw materials, e.g., standard thickness aluminum/titanium sheet stock, carbon fiber yarn, and industrial or aerospace grade resin systems; and
- (5) Produce components at a reduced price point over current conventional manufacturing approaches. Additionally, the solution should accept component definitions from industry standard CAD/CAM software tools.

PHASE I: Determine the scientific, technical, and commercial feasibility of the concept. This shall include: a down-selection of specific advanced manufacturing technologies; collaborating with AFRL to determine a specific demonstration application sufficiently testing the selected technologies, e.g., complexity of shape, assembly tolerances, mechanical performance, etc., and a business case analysis contrasting the proposed approach with the conventional paradigm.

PHASE II: The contractor will develop and demonstrate the proposed approach from Phase I, delivering a pre-determined number of demonstration articles to AFRL for vetting of tolerances and mechanical testing. A business case validation report will also be developed comparing and contrasting the new methodology to the conventional paradigm both from a financial and time-from-order-to-delivery perspective.

PHASE III DUAL USE APPLICATIONS: Collaborate with original engine manufacturers (OEMs) and other Government Agencies (i.e. – Navy, NASA, Army) to refine the approach and select partner specific applications for prototyping and incorporation.

PHASE I PROPOSAL PREPARATION: Awards under this topic will include a maximum of \$50,000 SBIR funds. The period of performance will be no more than three months, including two months for technical performance and one month for reporting. Please follow Section 5.3, “Phase I Proposal Instructions” when preparing proposals, with the exception of Section 5.3.b(1). Instead, the technical volume under this topic will consist of a white paper not to exceed 15 pages and, if needed to provide additional information, a slide deck not to exceed 15 charts. The sample slide deck at Attachment A may, but is not required to, be used as a template.

Additionally, rather than using the criteria found in Section 6.0, Phase I Review Criteria, proposals under this topic will be peer reviewed based on the criteria below. Selections will represent best value to the Government considering the following factors which are of descending importance:

- a. The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution.
- b. The qualifications of the proposed principal/key investigators, supporting staff, and consultants. Qualifications include not only the ability to perform the research and development but also the ability to commercialize the results.
- c. The potential for commercial (Government or private sector) application and the benefits expected to accrue from this commercialization.

#### REFERENCES:

1. Li, F., Chen, S., Evaluation and Optimization of a Hybrid Manufacturing Process Combining Wire Arc Additive Manufacturing with Milling for the Fabrication of Stiffened Panels, Applied Sciences, 2017, 7, 1233
2. Li, F., Chen, S., In-process control of distortion in wire and arc additive manufacturing based on a flexible multipoint support fixture, Science and Technology of Welding and Joining, 2018, 24, 1
3. Gupta, P., Jeswiet, J., Manufacture of an aerospace component by single point incremental forming, Procedia Manufacturing, 2019, 29
4. Riley, G., Wing Structural Design and Manufacturing (WiSDM) Volume 1, 2020, DTIC Report #: AFRL-RQ-WP-TR-2020-0041V1
5. Geng, H., Li, J., Theoretical Model of Residual Stress and Warpage for Wire and Arc Additive Manufacturing Stiffened Panels, Metals, 2020, 10, 666

NOTES: The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the proposed tasks intended for accomplishment by the FN(s) in accordance with section 5.4.c.(8) of the Announcement and within the AF Component-specific instructions. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws. Please direct questions to the Air Force SBIR/STTR Contracting Officer, Ms. Kris Croake, [kristina.croake@us.af.mil](mailto:kristina.croake@us.af.mil).

KEYWORDS: Attritable; UAV; Additive manufacturing; Dry fiber pre-form; Incremental sheet metal forming; Unitized structure; Out-of-autoclave

### 13.3 AF212-DCSO1 Air Force Nuclear Weapons Center Pitch Day

TECH FOCUS AREAS: Cybersecurity; Network Command, Control and Communications; Nuclear; Artificial Intelligence/Machine Learning

TECHNOLOGY AREAS: Nuclear; Sensors; Materials; Information Systems

OBJECTIVE: The Air Force Nuclear Weapons Center (AFNWC) is seeking technologies and solutions that support the mission of its execution and functional directorates. Our fourteen technological areas of interest include - Test methods and modeling for re-entry vehicle materials, adaptive network interchange, dynamic cognitive network management, data synchronization, nuclear aircraft decision integration support system, predictive Minuteman III sustainment capability, radiated emissions estimator, strategic system telemetry as a service, explainable formal methods for field programmable gate arrays (FPGA), unique item identifier compatible scanners, predictive analytics for weapons system product support, data science & management solutions for supply chain risk management (SCRM), digitization and management of authoritative resources, and aeroacoustics coupled with computational fluid dynamics (CFD).

DESCRIPTION: The Air Force Nuclear Weapons Center (AFNWC) consists of several functional directorates and five major execution directorates - Air Delivered Capabilities; Ground Based Strategic Deterrent Systems; Minuteman III Systems; Nuclear Command, Control and Communications (NC3) Integration; and Nuclear Technology and Integration. The AFNWC commander is dual-hatted as the Air Force Program Executive Officer (PEO) for Strategic Systems, and the NC3 Integration director is dual-hatted as the Air Force PEO for NC3.

TEST METHODS AND MODELING FOR RE-ENTRY VEHICLE MATERIALS – The AFNWC is seeking Low-cost aeroshell heat shield material characterization, testing, and modeling concepts to inform re-entry vehicle design analysis & trade studies. Examples of areas of interest include

- Low-cost material testing and characterization for extreme environments.
- Development and characterization of new and existing materials and structures for re-entry flight Environments.
- Development of robust sensing methodologies for characterization of species, reaction pathways represented in liberated gases, real-time profilometry, in combination with temperature gradients, pressure, velocity, and aerodynamic (actual or simulated) loading.
- Polymer Infiltration and Pyrolysis (PIP) process modeling for re-entry and propulsion materials Fluid structure interaction modeling for flows, especially ablative.

ADAPTIVE NETWORK INTERCHANGE – We are in search of beyond-line-of-sight (BLOS) radio frequency (RF) augmentation concepts to quickly restore RF network performance when degraded by natural or hostile events (i.e., sabotage, terrorism, cyber, weather, etc.). Examples include rapidly deployable (specify timelines) communication nodes (e.g., drones, rail, etc.) with open interface/exchange architecture and Open Mission System (OMS) compliance where applicable.

DYNAMIC COGNITIVE NETWORK MANAGEMENT – We are interested in comprehensive information sharing network management concepts to facilitate the dissemination of short (i.e., 280 characters) messages to globally dispersed network nodes before, during, and after a crisis. The optimal solution would be dynamic, change-cognitive, and able to traverse multiple disparate internet protocol (IP)-based and non-IP-based radio frequency (RF) waveforms while maintaining appropriate security and integrity. Relevant technology would provide link availability and network status



information (such as signal-to-noise ratio, probability of timely message receipt, etc.) between nodes in order to provide real-time situational awareness of network integrity. Proposed solutions should include an open interface system architecture that is open mission system (OMS) compliant where applicable.

**DATA SYNCHRONIZATION** – We are in search of a cross-domain digital air-delivered nuclear health assessment concept which integrates and synchronizes nuclear data, maintains version control, data integrity, and meets classification requirements.

**NUCLEAR AIRCRAFT DECISION INTEGRATION SUPPORT SYSTEM** – The AFNWC is interested in a digital, automated, integrated nuclear data decision tool to help senior leaders identify issues, gaps, risks, view the current state, and predict the future state of the nuclear air-delivered capability. Technology will require algorithms (e.g., artificial intelligence (AI)/machine learning (ML)) that analyze historical data and statistics to predict future outcomes.

**PREDICTIVE MINUTEMAN III SUSTAINMENT CAPABILITY** – We are in search of a predictive health monitoring system to proactively assess Minuteman III parts supply (i.e., D043, Integrated Logistics Support and Service (ILSS)), failure/usage data (e.g., International Material Data Systems (IMDS)), and aging surveillance and operational test results in order to identify and address risk items before they become issues. Technology should leverage all available data sources to efficiently allocate resources to prevent a negative impact on mission and weapon system key performance parameters (KPPs).

**RADIATED EMISSIONS ESTIMATOR** – We are seeking a technical solution to accelerate electromagnetic compatibility (EMC) assessment for new hardware and support equipment used in close proximity to sensitive Minuteman III ground and missile components. Proposed solution must comply with Air Force Risk Management Framework guidelines and should allow engineers to quickly predict the maximum possible radiated emissions of candidate equipment based on readily available hardware parameters (i.e., materials, spacing, dimensions, etc.).

**EXPLAINABLE FORMAL METHODS FOR FIELD PROGRAMMABLE GATE ARRAYS (FPGA)** – We are in search of a closed-loop validation tool to facilitate the nuclear certification process for FPGAs. Technical solution must be re-configurable to enable hardware-in-the-loop (HIL) testing of a representative FPGA in desirable and undesirable conditions. Ideally, the HIL testing tool would enable users to confirm or disprove analytical results, identify problematic logic, and suggest alternative logic that will preserve desirable behavior while minimizing possibility of undesirable behavior.

**UNIQUE ITEM IDENTIFIER COMPATIBLE SCANNERS** – We are seeking a modified commercial-off-the-shelf (COTS) scanner to read 2-D unique item identifier (UII) markings (such as quick response (QR) codes) located on Air Force line replaceable units (LRU). Desired solution would interface with the Integrated Maintenance Data System (IMDS) and the standard base supply system (SBSS) and automate the data entry and retrieval process. Tool needs to be able to adapt to changing cybersecurity and operational security (OPSEC) needs and comply with the weapon system requirements (e.g., safety, security, electromagnetic compatibility (EMC), etc.).

**PREDICTIVE ANALYTICS FOR WEAPON SYSTEM PRODUCT SUPPORT** – The AFNWC is in search of an adapted COTS predictive analytics software solution compatible with enterprise data management systems used by the government (such as Teamcenter® and Tableau). This will become the foundation and standard for data and configuration management to achieve total asset visibility (TAV) - In other words, full awareness of weapon system health based on part and component historical data (production, maintenance, testing, etc.).

**DATA SCIENCE AND MANAGEMENT SOLUTIONS FOR SUPPLY CHAIN RISK MANAGEMENT (SCRM)** – We are interested in a digital tool to integrate infrastructure data for supply and maintenance solutions (such as supply chain risk management). Proposed software tool must integrate data, enable data visualization, provide data analytic functions, and have the ability to share information between various government organizations, agencies, and contractors. Enterprise-wide solution must allow individual users to access all appropriate and relevant data in order to make data-driven decisions based on their individual role/function.

**DIGITIZATION AND MANAGEMENT OF AUTHORITATIVE RESOURCES** – We are seeking alternatives to establish digitization and management of authoritative resources. These efforts require resource models and a general way to provide precise descriptions of how to manage such resources. Digitization also requires that the notion of a document and its elements can be distributed, but still be authoritative.

**AEROACOUSTICS COUPLED WITH COMPUTATIONAL FLUID DYNAMICS (CFD)** – The AFNWC is looking for a method to improve computational speed of solving aeroacoustics codes coupled with CFD models of rocket motor plumes. There is a need to model the aeroacoustics wave behavior and identify the incident frequency spectrum during launch and shroud separation to develop proper mitigation solutions. A point of interest is ignition overpressure (IOP).

**INNOVATIVE TECHNOLOGIES** – Seeking technology opportunities to develop innovative approaches and designs integratable into AFNWC systems.

**DIGITAL ENGINEERING SOLUTIONS** – Seeking solutions integrating data, enabling data visualization, providing data analytic functions and the ability to communicate information among systems (both government and contractor owned plus individuals among different organizations).

Proposals for technologies and solutions not previously considered and which may not fit directly within one of the fifteen areas are also welcomed.

**PHASE I:** This topic is intended for technology proven ready to move directly into a 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; and
- Described if/how the demonstration can be used by other DoD or Governmental customers.

**PHASE II:** Under the Phase II effort, the offeror shall sufficiently develop the technical approach, product, or process in order to conduct a small number of advanced manufacturing and/or sustainment relevant demonstrations. Identification of manufacturing/production issues and or business model modifications required to further improve product or process relevance to improved sustainment costs, availability, or safety, should be documented. Air Force sustainment stakeholder engagement is paramount to successful validation of the technical approach. These Phase II awards are intended to provide a path to commercialization, not the final step for the proposed solution.

PHASE III DUAL USE APPLICATIONS: Phase III efforts will focus on transitioning the developed technology to a working commercial or warfighter solution.

DIRECT TO PHASE II (D2P2) PROPOSAL PREPARATION - Eligibility for D2P2 is predicated on the offeror having performed a “Phase I-like” effort at least in part separate from the SBIR/STTR Programs. Awards under this topic will include a maximum of \$1,500,000 SBIR funds. The period of performance will be no more than 27 months, including 24 months for technical effort and three months for reporting.

Please follow Section 9.0, “Direct to Phase II Proposal Instructions” when preparing proposals. Guidance for the mandatory NTE 25 chart slide deck is available in Appendix A. Guidance for the mandatory NTE 15 page white paper is available in Appendix C.

Offerors are encouraged but not required to identify the above technical area under which their proposed effort best fits in the proposal’s title or subtitle.

Proposals will be evaluated using a two-step process. After proposal receipt, an initial evaluation will be conducted IAW the criteria below. Based on the results of that evaluation, selectable companies will be invited to the Air Force Nuclear Weapons Center Pitch Day, dates and location (potentially virtual) to be determined. Companies’ demonstrations will be evaluated, again using the criteria below. Companies must participate in the pitch event to be considered for award.

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 descending importance:

1. The adequacy of the proposed effort and its relationship to fulfilling the Air Force Nuclear Weapons Center’s needs.
2. The soundness, technical merit, and innovation of the proposed approach and the qualifications of the proposed Principal Investigators/Project Managers, supporting staff, and consultants to execute against the proposed approach.
3. The potential for commercial (Government or private sector) application 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.

#### REFERENCES:

1. For more information on the Air Force Nuclear Weapon Center and its overarching technical need areas, please visit our website – <https://www.afnwc.af.mil/Innovation/>
2. Snyder, Don, Shrrill Lingel, Feorge Nacouzi, Brian Dolan, Jake McKeon, John Speed Meyers, Kurt Klein, and Thomas Hamilton, Managing Nuclear Modernization Challenges for the U.S. Air Force A Mission-Centric Approach, Santa Monica, Calif. RAND Corporation,RR-3178-AF, 2019.

KEYWORDS: Nuclear; Digital Engineering; Communications; Modeling & Simulation; Missile Technology

## 11.0 APPENDICES

### 11.1 Appendix A – Technical Volume Slide Deck Instructions for AF212-CSO1 and DCSO1 (CSO2 – charts only if desired); follow directions specific to each topic for length.

The Technical Volume should contain a MAXIMUM of 25 slides (AF212-CSO1 and AF212-DCSO1), although fewer is permissible. Brevity and clarity are important when communicating complex topics.

There are **11 required slides** and **6 additional slides for use 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. These instructions cover both Phase I and Direct-to-Phase II, 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 solution's 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 Commercial 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. 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** - Enumerate the specific Phase I objectives, including R/R&D methods to determine the proposed approach's feasibility. 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

- (a) **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. The list of high-level Air Force 'Customers' (Program Executive Offices) can be found here:  
<https://www.dropbox.com/s/e00ljab5qjdjb9d/AF%20Acquisitions%20%28PEOs%29%20Cheat%20Sheet.pdf?dl=0>

9. **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).

10. **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.

11. **Foreign Citizens** - Identify foreign citizens or individuals holding dual citizenship proposed for 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)).
- 12. **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.
- 13. **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.
- 14. **Technical Data Rights (Assertions):** 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 restricted rights in noncommercial software and limited rights in noncommercial technical data during the period commencing with contract/Other Transaction award and ending after 20 years. This data should be marked with the restrictive legend specified in DFARS 252.227-7018 or similar. Upon expiration of the 20 year restrictive license, the Government has Government Purpose Rights in the SBIR data. During the license period, the Government may not release or disclose SBIR data to any entity other than its support services contractors except (1) for evaluation purposes; (2) as expressly permitted by the contractor; or (3) use, release, or disclosure is necessary for emergency repair or overhaul of Government-operated items. See DFARS clause 252.227-7018, "Rights in Noncommercial Technical Data and Computer Software – Small Business Innovation Research (SBIR) Program" at [https://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=48%3A3.0.1.8.48#se48.3.252\\_1227\\_67018](https://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=48%3A3.0.1.8.48#se48.3.252_1227_67018). If a proposer plans to submit assertions IAW DFARS 252.227-70187 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.

14.2 Offerors wishing to assert data rights shall include the following table in the proposal:

<b>Technical Data/ Computer Software Furnished with Restrictions</b>	<b>Basis for Assertion</b>	<b>Asserted Rights Category</b>	<b>Name of Person Asserting Restrictions</b>
	-None -Developed exclusively at private expense -Developed partially at private expense	-None -Government Purpose -Limited (Tech Data) -Restricted (Software) -Specifically Negotiated License -SBIR/STTR	
(LIST)	(LIST)	(LIST)	(LIST)

**If a proposer plans to submit assertions IAW DFARS 252.227-7018, 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.**

**15. 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](https://www.bls.gov/oes/current/oes_nat.htm).

**16. 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.

**17. 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.

**18. 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.

## 11.2 Appendix B – Certification Questions and Coversheet Supplement

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

- 1) Do you allow for the release of contact information to Economic Development Organizations? Either answer is awardable.
- 2) Are you a small business as described in section 3.15 of this CSO, with no more than 500 employees including affiliates?
  - i. 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?
  - i. 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?
  - i. **(If YES, additional information required in Volume 5)** If YES, and the corporate entity is also a small business as described in section 3.15 of this CSO, please include in this section a description of the corporate relationship, including other affiliates of the owning corporate entity.
  - ii. 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?
  - i. 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?
  - i. 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?
  - i. 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?
- i. 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?
- i. **(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.
  - ii. If your firm is majority-owned by venture capital operating companies, hedge funds, or private equity firms, your proposal will be disqualified.
- 11) Is your firm more than 50% owned by a **single** Venture Capital Owned Company (VCOC), hedge fund, or private equity firm?
- i. **(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.
- 12) Is your firm more than 50% owned by **multiple** business concerns that are VCOCs, hedge funds, or private equity firms?
- i. If your firm is more than 50% owned by multiple venture capital operating companies, hedge funds, or private equity firms, your proposal will be disqualified.

**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](https://www.jhuapl.edu/vendorforms/forms/data_rights_assertion_table.pdf).

- 13) Number of employees including all affiliates (average for preceding 12 months):
- i. If your firm and affiliates have employed, on average over the last 12 months, more than 500 employees, your proposal will be disqualified.
- 14) Is your firm affiliated as set forth in 13 CFR 121.103?
- i. **(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>.
  - ii. 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.

- 15) As defined by SBA: All answers may be “yes” or “no” without impacting eligibility.
- Are you a socially or economically disadvantaged small business?
  - Are you a Woman-Owned small business (WOSB)?
  - Are you a certified HUBZone small business concern?
  - Are you a Service-Disabled Veteran-Owned small business (SDVOSB)?
- 16) 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.
- 17) Does the proposed cost include Technical and Business Assistance (TABAs)? The AF does not allow for TABAs.
- 18) Has a proposal for essentially equivalent work (Section 3.3 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)

The identification of similar proposals or awards is particularly important for the special topics, as they are broader in nature than many of the traditional SBIR/STTR topics. **Failure to disclose similar proposals or awards will result in your proposal being disqualified.** Additionally, reusing parts or whole proposals from previously awarded proposals will likely result in your proposal being deemed essentially equivalent.

- 19) Has a contract been awarded for any of the proposals listed above?
- i. If your firm has been awarded a contract from the US Government for essentially equivalent work, your proposal will be disqualified.
- 20) Are you submitting assertions in accordance with DFARS 252.227-7017 "Identification and assertions use, release, or disclosure restriction"?
- i. **(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](https://www.jhuapl.edu/vendorforms/forms/data_rights_assertion_table.pdf)
    - The contract cannot be awarded until assertions have been approved.
  - ii. 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."

- 21) Is the firm proposing research utilizing human/animal subjects or recombinant DNA as described in section 3.11, 3.12, and 3.13 of the solicitation?
- i. **(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):
    - 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;
    - for 2) documentation verifying review and approval for the research from the Institutional Animal Care and Use Committee; and for
    - 3) evidence of approval by the Institutional Biosafety Committee.
  - ii. 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.

- 22) Are teaming partners or subcontractors proposed?
- (If YES, additional information required in Volume 5)** If yes, be sure to include this information in the proposal Coversheet (Volume 1), Cost Volume (Volume 3) and Supplemental Cost Information (Volume 5).

- 23) Is the firm proposing to use foreign nationals as defined in section 3.5 of the solicitation for work under the proposed effort?
- (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)

- 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 may be disqualified.
- 24) What percentage of the principal investigator's total time will be on the project?
- Any non-zero answer is awardable.
  - (If less than 25%, additional information required in Volume 5.)** If the answer is below 25%, please describe the principal investigator's other roles.
- 25) Is the principal investigator a woman? Either answer is awardable. This information is required for the SBA's Award Information Database.
- 26) Is the principal investigator socially/economically disadvantaged? Either answer is awardable. This information is required for the SBA's Award Information Database.

## 11.3 Appendix C – Direct-to-Phase II White Paper Instructions

The NTE 15-page white paper is optional for AF212-CSO2 and mandatory for AF212-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.

### 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 **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.
- 1.3 **Proposed Adaptation of Non-Defense Commercial Solution:** Describe the proposed R/R&D adaptation of or the T&E 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.

**1.4 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.

**1.5 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.

NOTE: This includes clearances, e.g., DD Form 254, Authorities to Operate (ATO) on DoD networks, etc. This is a crucial proposal component.

## 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.

- 2.1 **Scope:** List the effort's major requirements and specifications.
- 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.
- 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.
- 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.
- 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>.
- 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.
  - **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.

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

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

- 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.
- 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.

### 3 Commercialization Strategy

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:

- **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.
- **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.



- **Market.** Milestones, target dates, market size analysis, and estimated market share after first year and fifth year sales; plan to obtain market share.
- **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.
- **Financing.** Plans for securing necessary funding in Phase II.
- **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.

3.2 **Military Applications/DoD Customers:** Briefly describe the proposed solution's existing potential military requirement. Identify the DoD agency/organization most likely to become the solution's customer. In many cases the potential DoD customer will be different than the end user. For example, the user may be in an operational flying unit and the customer in a system program office for the related aircraft. State whether a DoD agency has expressed interest in, or commitment to, a non-SBIR, Federally-funded Phase III effort or a Phase II enhancement with matching SBIR funds. If so, please include relevant details regarding funding availability, e.g.,

fiscal year, for solution transition, and other relevant funding details, such as funding type, e.g., RDT&E, Operations and Maintenance, etc. Include agency points of contact names, email addresses, and telephone numbers.

### 3.3 *Non-Defense Commercial Customers*

- Past revenue from commercial customers of the proposed non-Defense commercial solution. Clearly list non-Defense commercial customers, including revenue received as a result of the proposed solution's sales. Do not include other solutions the company may offer.
- Potential revenue-generating projects directly related to the proposed non-Defense commercial solution or adaptation thereof. Separately list potential revenue-generating projects with Defense or non-Defense customers directly related to the proposed solution(s). NOTE: On-going or completed projects/sales, such as those in section 2.5.1, are strongly preferred to potential projects.

**4 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.

**4.1 Non-U.S. 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.

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

**5 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.



# ATTACHMENT 2 TO AIR FORCE X21.2 SBIR CSO PHASE II FUNDING COMMITMENT FORM

## Attachment 2 - Phase II Funding Commitment Form

1. For Government funding commitment

Government Funding Organization	Government POC Name/E-mail	Amount of Funding	Year/Type of Funding (i.e. R&D, Operations and Maintenance)
			e.g. FY19 (3600), FY20 (3400)

2. For Private funding commitment

Private Funding Organization	Private POC Name/E-mail	Amount of Funding	Type of Funding (i.e. investment, 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 or 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 or additional R&D or marketing under the proposed SBIR project?]*

**Attachment 3**  
**TO AIR FORCE X21.2 SBIR CSO**  
**Department of Defense (DoD)**  
**Small Business Innovation Research (SBIR)/**  
**Small Business Technology Transfer (STTR) Program**

**CONTRACTOR CERTIFICATION REGARDING  
PROVISION OF PROHIBITED VIDEO SURVEILLANCE AND  
TELECOMMUNICATIONS SERVICES AND EQUIPMENT**

<b>Contractor's Name</b>	
<b>Company Name</b>	
<b>Office Tel #</b>	
<b>Mobile #</b>	
<b>Email</b>	

**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 VIDEO  
SURVEILLANCE 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—

(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 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)**

(a) *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.

**(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. 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.

**(c) Exceptions.** This clause does not prohibit contractors from providing—

(1) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(2) 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.

**(d) Reporting requirement.** (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 notification: 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 10 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.

(e) *Subcontracts*. 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 the System for Award Management (SAM) (<https://www.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  
TO AIR FORCE X21.2 SBIR CSO**

**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, 2021c
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**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.

<b>DISCLOSURE</b>		
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 (JUN 2010)**

(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)