

**DEPARTMENT OF THE AIR FORCE (DAF)
SMALL BUSINESS INNOVATION RESEARCH (SBIR)
SBIR X23.5 COMMERCIAL SOLUTIONS OPENING (CSO)**

Proposal Submission Timelines

- **12 January 2023:** CSO issued for pre-release
- **19 January 2023:** DAF begins accepting proposals
- **23 February 2023:** Full proposals due **no later than 12:00 p.m. ET**
- **Deadline for Receipt:** No exceptions will be made to the above submission deadline. DAF recommends early submission, as computer traffic intensifies near announcement closing. **Do not wait until the end of the submission period to submit proposal materials. DAF is not responsible for missed proposal submission due to system lag or inaccessibility.**

Proposal Submission Overview

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

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

DSIP Support Desk:

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

Solicitation at a Glance:

DAF Topic Number	AFX235-CSO1
OUSD (R&E) Critical Technology Areas	FutureG; Trusted AI and Autonomy; Biotechnology; Advanced Computing and Software; Integrated Sensing and Cyber; Directed Energy; Hypersonics; Microelectronics; Integrated Network Systems-of-Systems; Quantum Science; Space Technology; Renewable Energy Generation and Storage; Human-Machine Interfaces; Advanced Materials
Maximum Period of Performance	Three (3) Months; proposals that exceed this duration will not be considered for award.
Maximum SBIR Funding Amount	\$75,000.00; proposals that exceed this amount will not be considered for award.
Technical Volume Slide Limit	Twenty-five (25) Slides; slides in excess of this number will not be considered for review or award.
Solicitation Open Date	19 January 2023
Solicitation Close Date/Time	23 February 2023; 12:00pm ET. NOTE: no exceptions will be made to the submission deadline.
Minimum Performance of Work Requirement	A minimum of two-thirds of the research and/or analytical work must be performed by the proposing firm. The percentage of work is measured by both direct and indirect costs, not including profit.

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1. Introduction

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

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

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

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

2. Program Description

a. Objectives

The DAF SBIR Program's objectives include stimulating technological innovation, strengthening the small business role in meeting DoD research, development, test, and evaluation (RDT&E) needs, fostering and encouraging minority and disadvantaged persons-owned small businesses in technological innovation, and increasing commercial application of DoD-supported RDT&E results.

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

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

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

Additionally, the USAF and USSF have identified key technology strategies and challenges in the documents below.

US Air Force S&T Strategy:

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

USSF Long-Term Science and Technology Challenges:

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

The AF SBIR Program follows the policies and practices of the Small Business Administration (SBA) SBIR/STTR Policy Directive (1 Oct 20), https://www.sbir.gov/sites/default/files/SBA_SBIR_STTR_POLICY_DIRECTIVE_OCT_2020_0.pdf. This CSO incorporates and makes use of Policy Directive flexibilities to encourage proposals based on scientific and technical approaches most likely to yield important results for the DAF and private sector.

b. Three Phase Program

Phase I

The purpose of Phase I is to determine, to the extent possible, the scientific, technical, and commercial merit and feasibility of ideas submitted under the SBIR Program. Phase I awards are made in accordance with the SBA Policy Directive guidelines. The period of performance is generally between six to twelve months with twelve months being the maximum period allowable. Proposals should concentrate on research or research and development which will significantly contribute to proving the scientific and technical feasibility, and commercialization potential of the proposed effort, the successful completion of

which is a prerequisite for further DoD support in Phase II. Proposers are encouraged to consider whether the research or research and development being proposed to DoD Components also has private sector potential, either for the proposed application or as a base for other applications.

Phase II

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

Phase III

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

c. Definitions

Certified HUBZone Small Business Concern

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

Commercialization

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

Cooperative Research and Development

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

Covered Individual

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

Essentially Equivalent Work

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

Export Control

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

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

Federal Laboratory

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

Foreign Affiliation

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

Foreign Country of Concern

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

Foreign Entity

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

Foreign Government

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

Foreign Nationals

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

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

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

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

Fraud, Waste and Abuse

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

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

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

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

Funding Agreement

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

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

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

Malign Foreign Talent Recruitment Program

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

- (i) engaging in the unauthorized transfer of intellectual property, materials, data products, or other nonpublic information owned by a United States entity or developed with a Federal research and development award to the government of a foreign country or an entity based in, funded by, or affiliated with a foreign country regardless of whether that government or entity provided support for the development of the intellectual property, materials, or data products;
- (ii) being required to recruit trainees or researchers to enroll in such program, position, or activity;
- (iii) establishing a laboratory or company, accepting a faculty position, or undertaking any other employment or appointment in a foreign country or with an entity based in, funded by, or affiliated with a foreign country if such activities are in violation of the standard terms and conditions of a Federal research and development award;
- (iv) being unable to terminate the foreign talent recruitment program contract or agreement except in extraordinary circumstances;
- (v) through funding or effort related to the foreign talent recruitment program, being limited in the capacity to carry out a research and development award or required to engage in work that would result in substantial overlap or duplication with a Federal research and development award;
- (vi) being required to apply for and successfully receive funding from the sponsoring foreign government’s funding agencies with the sponsoring foreign organization as the recipient;
- (vii) being required to omit acknowledgment of the recipient institution with which the individual is affiliated, or the Federal research agency sponsoring the research and development award, contrary to the institutional policies or standard terms and conditions of the Federal research and development award;
- (viii) being required to not disclose to the Federal research agency or employing institution the participation of such individual in such program, position, or activity; or
- (ix) having a conflict of interest or conflict of commitment contrary to the standard terms and conditions of the Federal research and development award; and

(B) a program that is sponsored by—

- (i) a foreign country of concern or an entity based in a foreign country of concern, whether or not directly sponsored by the foreign country of concern;

- (ii) an academic institution on the list developed under section 1286(c)(8) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. 2358 note; Public Law 115–232); or
- (iii) a foreign talent recruitment program on the list developed under section 1286(c)(9) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. 2358 note; Public Law 115–232).

Performance Benchmark Requirements for Phase I

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

Principal Investigator

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

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

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

Proprietary Information

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

Research Institution

Any organization located in the United States that is:

- a. A university.
- b. A nonprofit institution as defined in Section 4(5) of the Stevenson-Wydler Technology Innovation Act of 1980.
- c. A contractor-operated federally funded research and development center, as identified by the National Science Foundation in accordance with the government-wide Federal Acquisition Regulation issued in accordance with

Section 35(c)(1) of the Office of Federal Procurement Policy Act. A list of eligible FFRDCs is available at: <https://www.nsf.gov/statistics/ffrdclist/>.

Research or Research and Development

Any activity that is:

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

Research Involving Animal Subjects

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

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

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

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

Research Involving Human Subjects

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

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

- a. Any research involving an intervention or an interaction with a living person that would not be occurring or would be occurring in some other fashion but for this research.
- b. Any research involving identifiable private information. This may include data/information/specimens collected originally from living individuals (broadcast video, webuse logs, tissue, blood, medical or personnel records, health

data repositories, etc.) in which the identity of the subject is known, or the identity may be readily ascertained by the investigator or associated with the data/information/specimens.

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

Research Involving Recombinant DNA Molecules

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

Recombinant DNA is defined as

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

Service-Disabled Veteran-Owned Small Business (SDVOSB)

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

Small Business Concern (SBC)

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

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

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

Subcontract

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

Subcontractor

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

United States

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

Women-Owned Small Business Concern

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

3. Proposal Fundamentals

a. Introduction

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

b. Registrations and Certification Requirements

i. Defense SBIR/STTR Innovation Portal

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

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

Please note that the email address you use for Login.gov should match the email address associated with your existing DSIP account. If you do not recall the email address associated with your DSIP account, or if you already have an existing Login.gov account using a different email address, you will need your Firm's DUNS number and your Firm PIN in order to link your Login.gov account with your DSIP account. If the email address associated with your existing DSIP account has been used for multiple DSIP August 24, 2022 17 accounts within your Firm, you will also need your Firm's DUNS number and

your Firm PIN in order to link your Login.gov account with your DSIP account. The Firm PIN can be obtained from your Firm Admin. You can view the Firm Admin's contact information by entering your Firm's DUNS number when prompted. If you are the Firm Admin, please ensure that you contact all DSIP users in your Firm and provide them with the Firm PIN.

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

ii. SAM.gov

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

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

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

c. Applicant Eligibility Requirements

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

For Phase I, a minimum of **two-thirds** of the research and/or analytical work must be performed by the proposing firm. The percentage of work is measured by both direct and indirect costs, not including profit. Occasionally, deviations from these requirements may occur. These deviations must be approved in writing in advance and such approval must be submitted with the applicant's proposal.

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

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

d. Joint Ventures

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

A small business joint venture offeror must submit, with its offer, the representation required in paragraph (c) of FAR solicitation provision 52.212-3, Offeror Representations and Certifications-Commercial Products and Commercial Services, and paragraph (c) of FAR solicitation provision 52.219-1, Small Business Program Representations, in accordance with 52.204-8(d) and 52.212-3(b) for the following categories:

- (A) Small business;
- (B) Service-disabled veteran-owned small business;
- (C) Women-owned small business (WOSB) under the WOSB Program;
- (D) Economically disadvantaged women-owned small business under the WOSB Program; or
- (E) Historically underutilized business zone small business.

These representations can be found as Attachment 7 to this CSO and must be uploaded to Volume 5, Supporting Documents of the proposal submission, if applicable.

e. Benchmarks

- i. Applicants with prior SBIR/STTR awards must meet two benchmark requirements for progress toward commercialization as determined by the Small Business Administration (SBA) on 1 June of each year.
- ii. For all applicants that have received or receive 20-49 Phase I awards over the past five fiscal years, excluding the most recent year (currently FY 2017-2021), the ratio of Phase II awards to Phase I awards must be at least 0.25.
- iii. For applicants that have received or receive more than 50 Phase I awards over the past five fiscal years, excluding the most recent year (currently FY2017-2021), the ratio of Phase II awards to Phase I awards must be at least .5.
- iv. For all applicants with greater than 15 Phase II awards over the last ten fiscal years excluding the last two years (currently FY 2012-2021), the proposer must have received, to date, an average of at least \$100,000 of sales and/or investments per Phase II award received or have received a number of patents resulting from the SBIR work equal to or greater than 15% of the number of Phase II awards received during the period.

Consequence of failure to meet the benchmarks:

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

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

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

Companies' benchmark information is not available to the public.

4. Administrative Proposal Requirements

The DAF is committed to reducing proposal-to-award lead times. To this end, processes and tools have been developed allowing for rapid, streamlined contracting via periodic expedited contracting events, sometimes known as "contracting sprints". Such speed dictates stringent administrative practices in the proposal submission process. The DAF reserves the right to disqualify proposals for failing to meet the requirements below.

a. Additional Reporting

In addition to the standard federal and DoD procurement certifications, the SBA SBIR Policy Directive requires the collection of certain information from firms at time of award and during the award life cycle. Each firm must provide this additional certification at the time of the Phase I award and prior to final payment on the Phase I award. This certification must state that the awardee meets the size, ownership, and other requirements of the SBIR program.

b. Administrative Proposal Matters

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

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

ii. Proprietary Information

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

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

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

iv. Air Force Research Laboratory Instruction (AFRLI) 61-113

In accordance with AFRLI 61-113, S&T Protection for the Air Force Research Laboratory, applicants are required to submit with their proposal a “Research and Related Key/Senior Person Profile” (Attachment 6) and a Program Security Questionnaire (Attachment 7).

Applicants will be required to provide documentation of their Security Program Plan for initial Institution S&T Protection Program Review. The purpose of requesting the plan is to evaluate the offeror’s capacity for protecting the Government’s S&T and failure to demonstrate a plan adequate to meet the needs of the requirement may be grounds for non-award of a proposal, even if previously Selected for negotiation and award.

Applicants may also be asked to provide a mitigation plan for any identified S&T Protection risks. The Government reserves the right not to award if the submitted SF 424 and Security Program Questionnaire are not acceptable to the Government.

In the event a security risk is identified and the Government has determined the security risk exceeds the acceptable threshold, the applicant will be notified and informed of the termination/decline of award. The Government will be only required to provide a general statement of the reasoning due to Government OPSEC measures.

v. Conflicts of Interest

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

vi. Classified Proposals

Classified proposals will not be accepted in response to this CSO. If efforts will require classified work during 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>.

vii. Research Involving Human Subjects

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

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

Additional Federal Assurance documentation may also be requested by the DAF. 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.**

viii. Research Involving Animal Subjects

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

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

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

ix. 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.

x. 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.**

xi. Proposal Status and Feedback

The PI and Corporate Official indicated on the Proposal Cover Sheet will be notified by email regarding proposal selection or non-selection. The small business will receive one notification for each proposal submitted. Please note the referenced proposal number and read each notification carefully. If changes occur to the company mail or email addresses or points of contact after proposal submission, the information must be provided to the DAF via AF SBIR/STTR One Help Desk.

Feedback requests will be provided to applicants with proposals determined "Not Selected". The notification letter will include instructions for submitting an automated feedback request. Applicants are entitled to no more than one feedback per proposal, and applicants are instructed not to contact the DAF for additional feedback.

NOTE: Feedback is not the same as a FAR Part 15 debriefing.

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

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

Proposal Review Information

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

xii. CSO, Selection, and Award Protests

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

xiii. Award Information

1. **Number of Awards.** The number of awards will depend upon funds availability. The DAF reserves the right to make no awards under this solicitation. The DAF is not responsible for costs incurred before award receipt.
2. **Type of Funding Agreement.** Awards are executed as firm-fixed-price contracts or Other Transactions for Prototype. The Small Business Administration SBIR/STTR Policy Directive states, "Except as expressly excluded or limited by statute, awarding agencies must provide for a reasonable fee or profit on SBIR/STTR Funding Agreements."

xiv. Questions About This CSO and CSO Topics

1. Air Force One SBIR/STTR Help Desk

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

2. DSIP Support

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

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

3. Topic Q&A

Once the Air Force begins accepting proposals on 19 January 2023, applicants may submit written questions through Topic Q&A at <https://www.dodsbirsttr.mil/submissions/login>. In Topic Q&A, all questions and answers are posted electronically for general viewing. Identifying information for the questioner and respondent is not posted.

Questions submitted through the Topic Q&A are limited to technical information related to improving the understanding of a topic's requirements. Any other questions, such as those asking for advice or guidance on solution approach, or administrative questions, such as SBIR or STTR program eligibility, technical proposal/cost proposal structure and page count, budget and duration limitations, or proposal due date WILL NOT receive a response.

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

The Topic Q&A for this CSO opens on 12 January 2023 and closes to new questions on 9 February 2023 at 12:00 PM ET. Once the CSO closes to proposal submission, no communication of any kind through Topic Q&A regarding your submitted proposal is allowed.

4. DAF SBIR/STTR Open Topic Updates and Notices

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

xv. Identifying RDT&E in SBIR/STTR Proposals

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

Phase I Conditions:

Consistent with 15 U.S.C. 638 and the SBA SBIR/STTR Policy Directive (2020), the object of Phase I is to determine the scientific and technical merit and feasibility of the proposed effort and the quality of performance of the awardee

with a relatively small agency investment before consideration of further Federal support in Phase II.

xvi. 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.

xvii. 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).

xviii. 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.

xix. Fraud and False Statements

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

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

xx. State and Other Assistance Available

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

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

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

xxi. Use of Support Contractors for the AF SBIR Program

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

xxii. Innovation in Manufacturing

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

xxiii. 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.

5. Phase I Proposal

a. Phase I should address the topic solution's technical feasibility.

b. Proposal Volume Contents

- i. Registration
 - o UEI Number
 - o Commercial or Government Entity (CAGE) Code
 - o SBA Small Business Concern (SBC) Control ID
- ii. Volume 1: Proposal Cover Sheet
 - o CAGE, UEI
 - o Certification Questions
 - o Business Information
 - o Proposal Information
 - o Contact Information
- iii. Volume 2: Technical Volume
 - o Slide Deck (Up to 25 Slides)
- iv. Volume 3: Cost Volume
 - o Direct Labor Costs
 - o Direct Material Costs
 - o Other Direct Costs
- v. Volume 4: Company Commercialization Report
- vi. Volume 5: Supporting Documents
 - o Coversheet Supplement
 - o Supplemental Cost Information
 - o Resumes of Key Personnel
 - o *Non-Proprietary* Work Plan
 - o DD Form 2345, Militarily Critical Technical Data Agreement (required if applicable)
 - o Allocation of Rights (optional)
 - o Attachment 1: SBIR/STTR Lifecycle Certification (required)
 - o Attachment 2: SBIR/STTR Environment, Safety and Occupational Health (ESOH) Questionnaire (required)
 - o Attachment 2: SBIR/STTR Environment, Safety and Occupational Health (ESOH) Questionnaire (required)
 - o Attachment 3: SBIR/STTR Program Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (required)
 - o Attachment 4: SBIR/STTR Program Disclosure of Offeror's Ownership or Control by a Foreign Government (required if applicable)
 - o Attachment 5: AF Security Program Questionnaire (required)
 - o Attachment 6: Research & Related Senior/Key Person Profile (required)
 - o Attachment 7: Certification of Eligibility of Small Business Joint Ventures (required if applicable)
 - o SBIR/STTR Funding Agreement Certification (Attachment 8; encouraged at proposal submission, required prior to award)
 - o DD Form 2345, Militarily Critical Technical Data Agreement (if applicable)
 - o Additional Letters of Support (if applicable)

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

c. Marking Proprietary Information

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

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

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

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

d. Proposal Cover Sheet (Volume 1)

On the Defense SBIR/STTR Innovation Portal (DSIP) at <https://www.dodsbirsttr.mil/submissions/>, prepare the Proposal Cover Sheet.

The Cover Sheet must include a brief technical abstract that describes the proposed R&D project and a discussion of anticipated benefits and potential commercial applications. Each section should be no more than 200 words. Do not include proprietary or classified information in the Proposal Cover Sheet. If your proposal is selected for award, the technical abstract and discussion of anticipated benefits may be publicly released on the Internet. Once the Cover Sheet is saved, the system will assign a proposal number. You may modify the cover sheet as often as necessary until the BAA closes.

Effective January 2023, the amounts listed in the Percentage of Work (POW) certification question on the Proposal Cover Sheet are derived from information entered by the proposing small business concern in the Cost Volume (Volume 3). Details on the calculation can be viewed in DSIP during proposal submission.

If the POW calculations fall below eligibility requirements, a letter of explanation or approval by the Funding Agreement officer must be uploaded to the certification question to complete the submission.

e. **Technical Volume (Volume 2)**

i. **Format**

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

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

Length Limitation: The 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 pages consecutively. Each slide should contain the company name, topic number, and proposal number assigned by DSIP when the Cover Sheet was created.

ii. **Content**

1. The Technical Volume should contain a MAXIMUM of 25 slides, although fewer is permissible.
2. There are 11 required slides and 6 additional slides that are required only if applicable to the proposal. The remaining slides are not required and may be used at the proposer's discretion.
3. Proposals without the required slides will not be considered.
4. The Slide Deck should cover the following items in the order given below. A sample Slide Deck is available as Attachment 9. While the notes in the template are suggestions, the items described below are required. Additionally, applicants are not required to use the template's style/format. To the extent that the template and the instructions below are inconsistent, the instructions below govern.
 - a. **Overall Summary Slide**
Including Company Name and Overview of Proposal
 - b. **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 the 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.
 - c. **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. Non-RDT&E procurement of commercially-available solutions is not appropriate for the SBIR program.
 - d. **Summary of the Solution's Commercialization Potential**

Effectively demonstrate the firm's ability to commercialize the solutions in both DoD and commercial markets. Include any applicable pilots, revenue, users, and/or other types of interest or resource investment to date that demonstrates the presence of viable customer markets and Government/commercial investment for the solution. Describe the solution's competitive landscape and potential to scale the proposed solution.

e. Team's Ability to Perform Research and Commercialization 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 DAF customer needs. Full resumes, including a publications list, for the PI and other key technical personnel shall be included in Volume 5: Supplemental Documents.

f. Defense Need

Demonstrate knowledge of prospective End-User(s)/Customer(s) and their most reasonable use-case for your solution. Explore differentiation from current customer alternatives, and incremental progress toward fulfilling the identified Defense need. Highlight previous DoD funding for the solution or underlying technology. Include a description of the proposed solution and how it compares to the user's current alternative. If applicable, reference a Strategic Capability area.

g. Objectives

Describe how success will be measured in helping the prospective users and the plan to identify stakeholders other than end-users, e.g. safety, test or certification authorities, cybersecurity, acquisition specialists supporting prospective end-users, etc.

h. 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.

i. Transition Plan

Describe your plan to transition your solution into the DAF. Briefly describe how your proposed solution could integrate with the existing efforts of your proposed DAF customer.

j. 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 how 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. 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).

k. Clearances/Certifications/Approvals/Registrations

Include the UEI, 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 the time of proposal submission or the proposal may be disqualified.

5. 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.

a. Foreign Citizens

Identify any foreign citizens or individuals holding dual citizenship expected to be involved on this project as a direct employee, subcontractor, or consultant.

For these individuals, please specify their country of origin, the type of visa or work permit under which they are performing and an explanation of their anticipated level of involvement on this project. Proposing small business concerns frequently assume that individuals with dual citizenship or a work permit will be permitted to work on an SBIR project and do not report them. This is not necessarily the case and a proposal will be rejected if the requested information is not provided. Therefore, proposing small business concerns should report any and all individuals expected to be involved on this project that are considered a foreign national.

You may be asked to provide additional information during negotiations in order to verify the foreign citizen's eligibility to participate on a SBIR contract. 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)).

b. Facilities/Equipment

Describe available instrumentation and physical facilities necessary to carry out the Phase I effort. Justify equipment

purchases in this section and include detailed pricing information in the Cost Volume. State whether or not the facilities where the proposed work will be performed meet environmental laws and regulations of federal, state (name), and local Governments for, but not limited to, the following groupings:
 airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.

c. 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 Federal Government entity, the applicant must state so on the Proposal Cover Sheet and then provide a slide with the following information.

- i. Name and address of the Federal Agency(s) or DoD Component to which a proposal was submitted, will be submitted, or from which an award is expected or has been received.
- ii. Date of proposal submission or date of award.
- iii. Title of proposal.
- iv. Name and title of principal investigator for each proposal submitted or award received.
- v. Title, Number, and date of BAA9s) or solicitation(s) under with the proposal was submitted, will be submitted, or under which award is expected or has been received.
- vi. If award was received, state contract number.
- vii. Specify the applicable topics for each SBIR proposal submitted or award received.

d. Technical Data Rights Assertions

See Appendix A for a robust discussion of the SBIR/STTR Technical Data Rights regime. If an applicant plans to submit assertions IAW DFARS 252.227-7017, identification and assertion of use, release, or disclosure restrictions MUST be included with the proposal submission. If selected, the contract will not be awarded until assertions are negotiated and/or approved. Applicants wishing to assert data rights shall include the following table on this slide:

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

		Negotiated License <ul style="list-style-type: none"> • Rights in SBIR Data 	
List	List	List	List

e. 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.

f. 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 located at

https://www.bls.gov/oes/current/oes_nat.htm

g. 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.

h. Detailed Travel 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>.

i. Supplemental Information for Special Tooling and Test Equipment

While special tooling/test equipment and material cost may be included under Phase I, 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. Special tooling and special test equipment 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.

f. Cost Volume (Volume 3)

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

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

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

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

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

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

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

Recommend budgeting at least one (1) trip to the Air Force location managing the contract. Greater travel expectations will be required as noted in some topic statements and corresponding SBIR/STTR

Interactive Topic Information System (SITIS) Q&A. Estimation of travel costs need not be an overly onerous exercise, and actual travel cost may differ from your proposed travel. This information allows the Government CO to ensure travel costs are not excessive.

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

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

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

ROUND ALL COSTS TO THE NEAREST DOLLAR!

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

g. Company Commercialization Report (Volume 4)

The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. SBIR and STTR awardees are required by SBA to update and maintain their organization’s CCR on SBIR.gov. Commercialization information is required upon completion of the last deliverable under the funding agreement. Thereafter, SBIR and STTR awardees are requested to voluntarily update the information in the database annually for a minimum period of five years.

If the proposing firm has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, regardless of whether the project has any commercialization to date, a PDF of the

CCR must be downloaded from SBIR.gov and uploaded to the Firm Forms section of DSIP by the Firm Admin. Firm Forms are completed by the DSIP Firm Admin and are applied across all proposals the firm submits. The DSIP CCR requirement is fulfilled by completing the following:

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

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

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

1. If the proposing firm has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, and DOES have a new or revised CCR from SBIR.gov to upload to DSIP, select YES.
 - a. If the user is the Firm Admin, they can upload the PDF of the CCR from SBIR.gov directly on this page. It will also be updated in the Firm Forms and be associated with all new or in-progress proposals submitted by the firm. If the user is not the Firm Admin, they will receive a message that they do not have access and must contact the Firm Admin to complete this action.
 - b. **WARNING:** Uploading a new CCR under the Firm Forms section of DSIP or clicking “Save” or “Submit” in Volume 4 of one proposal submission is considered a change for ALL proposals under any open BAAs or CSOs. If a proposing firm has previously certified and submitted any Phase I or Direct to Phase II proposals under any BAA or CSO that is still open, those proposals will be automatically reopened. Proposing firms will have to recertify and resubmit such proposals. If a proposing firm does not recertify or resubmit such proposals, they will not be considered fully submitted and will not be evaluated.
2. If the proposing firm has NO prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, the upload of the CCR from SBIR.gov is not required and firm will select NO. The CCR section of the proposal will be marked complete.

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

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

h. Supporting Documents (Volume 5)

This volume is 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. All applicants are REQUIRED to submit the following documents to Volume 5:

- i. SBIR/STTR Lifecycle Certification (Attachment 1)
- ii. SBIR/STTR Environment, Safety, and Occupational health (ESOH) Questionnaire (Attachment 2)
- iii. Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (Attachment 3)
- iv. AF Security Program Questionnaire (Attachment 5)
- v. Research & Related Key/Senior Profile (Attachment 6)

All applicants are REQUIRED to submit the following documents to Volume 5 if applicable to the applicant's proposal:

- vi. SBIR/STTR Program Disclosure of Offeror's Ownership or Control by a Foreign Government (Attachment 4)
- vii. Certification of Eligibility of Small Business Joint Ventures (Attachment 7)

Documents acceptable for inclusion in Volume 5 are:

- viii. Coversheet Supplement: The online coversheet asks many questions, depending on the answers more information may be needed. The list of questions, and additional information required based on responses to those questions, are provided in Appendix B. Failure to provide supplemental information, when required, may result in company ineligibility.
- ix. Supplemental Cost Information: This document is used to provide additional cost information to augment the Cost Volume (Volume 3) provided in the online form. The Supplemental Cost Information detail must be adequate to enable Department of the Air Force personnel to determine the purpose, necessity, and

reasonableness of each cost element provided in the Cost Volume. Information in this section should include the following where applicable:

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

outdoor noise, solid/bulk waste disposal practices, toxic/hazardous material handling/storage, and others as identified.

8. Indirect Costs: The proposal should identify the specific rates used and allocation bases to which they are applied. Provide proposed rates and applications per FY throughout the anticipated performance period. Do not propose composite rates.

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

9. Resumes of Key Personnel: Full resumes, including a publications list, for the Primary Investigator and other key technical personnel shall be included.
10. Non-Proprietary Work Plan: Provide a complete, non-proprietary work plan, free of proprietary markings. Attach as a stand-alone document, if possible, for inclusion in the contact document, if selected. Failure to provide this document will necessitate a request for revision and may delay contract award.
11. SBIR/STTR Funding Agreement Certification (Signed): Applicants are encouraged to complete a Funding Agreement Certification at the time of proposal submission and include it in Volume 5. These documents are required prior to award, and inclusion of this document with the proposal submission is likely to expedite award for those proposals Selected for negotiations and award. This certification can be found at Attachment 8.
12. DD Form 2345 - ITAR/EAR Certification: For proposals whose solutions fall under export- controlled regulations (either International Traffic in Arms (ITAR) or Export Administration Regulations (EAR)), a copy of the certified DD Form 2345, Militarily Critical Technical Data Agreement, or evidence of application submission must be included. The form, instructions, and FAQs may be found at the United States/Canada Joint Certification Program website, http://www.dla.mil/HQ/InformationOperations/Offers/Products/LogisticsApplications/JCP/DD_2345Instructions.aspx. Approval of the DD Form 2345 will be verified if proposal is chosen for award.
13. Allocation of Rights: If subcontracting to a research institution or other organization, the firm may wish to complete an allocation of rights agreement. This is not required for SBIR awards but may be used at the company's discretion. Example: <https://rt.cto.mil/wp-content/uploads/STTR-Model-Agreement-for-the-Allocation-of-Rights.pdf>
14. Additional Letters of Support: Letters of support demonstrate that the proposed innovation, if developed, would solve a valid market need. More generally, letters of support can validate commercial impact claims made in the proposal. Therefore, letters from potential technology end users (e.g., customers and corporate partners/collaborators) are

appropriate, as well as letters from actual or potential investors. All letters should be uploaded in a single .pdf file organized logically.
NOTE: When combining .pdf documents, ensure digital signatures are not stripped.

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

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

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

15. SBIR/STTR Program Disclosure of Offeror's Ownership or Control by a Foreign Government (Attachment 4)

Applicants must review Attachment 4: SBIR/STTR Program Disclosure of Offeror's Ownership or Control by a Foreign Government. The completed and signed disclosure must be uploaded to Volume 5 of the proposal submission, if applicable.

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

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

i. Common Disqualifiers:

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

- System for Award Management is not properly updated at time of submission
- Minimum Performance Percentage of Work is not allocated properly

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

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

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

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

6. Evaluation Criteria

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

Funding Methodology

Since the Air Force Research Laboratory is one lab supporting two services, DAF has combined both Air Force and Space Force Open Topics in to one open **Topic AFX235-CSO1**, under which both Air Force and Space Force proposals will be accepted. Applicants shall identify whether their proposal is anticipated to meet an Air Force only need, Space Force only need, or both. DAF subject matter experts will make final categorization determinations based upon Air Force and Space Force mission sets and fiscal law. All selections will still be made in accordance with the specified evaluation criteria and the decision to combine topics does not decrease the anticipated number of awards.

EVALUATION CRITERIA

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

1. **Commercialization.** The potential for Government or private sector commercialization and benefits expected to accrue from commercialization.
 - a. The SBC's record of commercializing SBIR or other research, as indicated by pre-sales, pilots, sales, revenue, active users, subscriptions, downloads, and/or other forms of traction/adoption.
 - b. The Existence of Phase II follow-on commitments for the subject research, and funding commitments related to the subject effort, whether from Government sources, as

documented in the DAF Customer Memorandum, or private sources, as documented through a letter of commitment, are evidence of commercialization potential.

2. **Defense Need.** The appropriateness, relevance, and specificity of an identified Defense Need. While not required, signed letters of support from other Government personnel may be indicators of the appropriateness, relevance, and specificity of an identified Defense Need. Adequacy of the proposed effort and its relationship to fulfilling the identified Defense Need.
3. **Technical approach.** The technical approach, soundness, technical merit, and innovation of the proposed technical approach, as well as its differentiation from current customer alternatives. Includes the proposed Principal Investigators'/Project Managers', supporting staff, and consultants' qualifications to execute the proposed approach. All evaluation criteria other than cost or price, when combined, are significantly more important than cost or price. Where technical evaluations are essentially equal in merit, cost and/or price will be considered in determining the successful offeror(s).

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

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

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

Other Factors Considered During the Selection Process:

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

7. Contractual Requirements

a. Other Contractual Requirements

- i. Awardees will be required to make certain legal commitments through acceptance of Government contract clauses or OT articles. The following outline is **illustrative** of provisions required by the FAR or statute for inclusion in Phase I awards. This is not a complete list, nor does it contain specific clause/article wording.
- ii. **Standards of Work**
Work performed under the award must conform to professional standards.

- iii. **Inspection**
Work performed under the award is subject to Government inspection and evaluation at all reasonable times.
- iv. **Examination of Records**
The Comptroller General (or a fully authorized representative) shall have the right to examine any directly pertinent awardee records involving award transactions.
- v. **Default**
The Government may terminate the award for failure to perform the negotiated effort.
- vi. **Termination for Convenience**
The Government may terminate the award at any time if it deems termination in its best interest. The firm will be compensated for work performed and reasonable termination costs.
- vii. **Disputes**
Any award dispute not resolved by agreement shall be decided by the Contracting or Agreements Officer with right of appeal.
- viii. **Contract/OT Work Hours**
The awardee may not require an employee to work more than eight hours a day or forty hours a week unless compensated accordingly through overtime pay.
- ix. **Equal Opportunity**
The firm will not discriminate against any employee or employee applicant because of race, color, religion, sex, or national origin.
- x. **Affirmative Action for Veterans**
The awardee will not discriminate against any employee or applicant for employment because he or she is a disabled veteran.
- xi. **Affirmative Action for Handicapped Individuals**
The awardee will not discriminate against any employee or applicant for employment because he or she is physically or mentally handicapped.
- xii. **Officials Not to Benefit**
No Federal Government official may benefit personally from the SBIR/STTR funding agreement.
- xiii. **Covenant Against Contingent Fees**
No person or agency has been employed to solicit or secure the award upon an understanding for compensation except bona fide employees or commercial agencies maintained by the awardee for the purpose of securing business.
- xiv. **Gratuities**
The Government may terminate the contract if gratuities have been offered to any Government representative to secure the awardee.

- xv. Patent Infringement**
The awardee shall report each notice or patent infringement claim based on contract performance.
- xvi. Military Security Requirements**
The awardee shall safeguard classified information associated with the contracted work IAW applicable regulations.
- xvii. American Made Equipment and Products**
The awardee will purchase equipment and/or products in support of the SBIR award from U.S.-based sources whenever possible.
- xviii. Unique Identification (UID)**
If hardware will be delivered to the Government under the award, there is potential unique item identification will be required IAW DFARS 252.211-7003.
- xix. Publication Approval**
Government review and approval will be required prior to dissemination or publication, except within and between the awardee and its subcontractors (if any), of classified and non- fundamental information developed under this award or contained in reports to be furnished pursuant to this award.
- xx. Animal Welfare**
Awards involving research, development, test, evaluation, or training on vertebrate animals will incorporate DFARS clause 252.235-7002 or similar verbiage.
- xxi. Protection of Human Subjects**
Effective 29 July 2009, contracts including or potentially including research involving human subjects IAW 32 CFR Part 219, DoD Directive 3216.02, and 10 U.S.C. 980, including research meeting exemption criteria under 32 CFR 219.101(b), will incorporate DFARS clause 252.235-7004 or similar verbiage.
- xxii. E-Verify**
Contracts exceeding the simplified acquisition threshold may include the FAR clause 52.222- 54 “Employment Eligibility Verification” unless exempted by the conditions listed at FAR 22.1803.
- xxiii. Similar verbiage will be included in OT awards unless determined exempt through comparable determination.
- xxiv. ITAR**
IAW DFARS 225.7901-4, Export Control Contract Clauses, the clause found at DFARS 252.225- 7048, Export-Controlled Items (June 2013), must be included in all solicitations and contracts; therefore, all awards resulting from this CSO will include DFARS 252.225-7048 or similar verbiage. Full text:
<https://www.acquisition.gov/dfars/part-252-clauses#DFARS-252.227-7018>.
- xxv. Cybersecurity**

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

xxvi. 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".

xxvii. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment

In accordance with DFARS Subpart 204.21, DFARS provisions 252.204-7016, 252.204-7017, and clause 252.204-7018 are incorporated into this solicitation. This subpart implements section 1656 of the National Defense Authorization Act for Fiscal Year 2018 (Pub. L. 115-91) and section 889(a)(1)(A) of the National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232).

xxviii. 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).

xxix. Disclosure of Ownership or Control by a Foreign Government

DFARS 252.209-7002, Disclosure of 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 a foreign government has in the SBC when that interest constitutes control by a foreign government, as defined in DFARS provision 252.209-7002. If the SBC 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 SBC's immediate parent, intermediate parents, and the ultimate parent.

xxx. 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](#).

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.

b. 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.

c. Prohibition on Contracting with Persons that have Business Operations with the Maduro Regime

DFARS 252.225-7055, Representation Regarding Business Operations with the Maduro Regime, is incorporated into this solicitation. In accordance with section 890 of the National Defense Authorization Act for Fiscal Year 2020 (Pub. L. 116-92), DoD is prohibited from entering into a contract for the procurement of products or services with any person that has business operations with an authority of the government of Venezuela that is not recognized as the legitimate government of Venezuela by the United States Government, unless the person has a valid license to operate in Venezuela issued by the Office of Foreign Assets Control of the Department of the Treasury.

d. Copyrights

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

e. 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.

f. Technical Data Rights

Rights in technical data, including software, developed under the award terms resulting from proposals submitted under this CSO, generally remain with the awardee. As detailed in DFARS 252.227-7018(b)(1), the Government shall have unlimited rights in specific technical data or computer software generated under SBIR/STTR contracts, to include form, fit, and function data and data necessary for installation, operation, maintenance, and training purposes. Aside from the unlimited rights afforded under DFARS 252.227-7018(b)(1), the Government shall have SBIR data rights in all other technical data or computer software generated under this contract for a period of 20 years, commencing upon contract award. This data should be marked with the restrictive legend specified in

DFARS 252.227-7018 or similar. Upon expiration of the 20 year restrictive license, the Government has Government Purpose Rights in the SBIR data.

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

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

g. Invention Reporting

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

h. Final Technical Reports

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

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

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

Block 14 (Abstract), "Report Documentation Page" must include as the first sentence, "Report developed under SBIR/STTR contract (or OT) for topic [insert topic number]. [Follow with the topic title, if possible.]" The abstract must identify the work's purpose and briefly describe that

conducted, the findings/results, and potential applications. The abstract will be published by the DoD. Therefore, it shall not contain proprietary or classified data.

Type "UU" in Block 17.

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

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

8. Phase I Topic

AFX235-CSO1 TITLE: Phase I Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions with a Clear Air Force or Space Force Stakeholder Need

OUSD (R&E) CRITICAL TECHNOLOGY AREAS: FutureG; Trusted AI and Autonomy; Biotechnology; Advanced Computing and Software; Integrated Sensing and Cyber; Directed Energy; Hypersonics; Microelectronics; Integrated Network Systems-of-Systems; Quantum Science; Space Technology; Renewable Energy Generation and Storage; Human-Machine Interfaces; Advanced Materials

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. Applicants must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Applicants are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

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

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

- Commercialization Potential - The potential for Government or private sector commercialization as well as the resulting benefits and capabilities.
- Defense Need - Applicant(s) should demonstrate understanding of the potential fit between their solution and Defense stakeholders. Applicant(s) may provide indication of a Defense 'need' by including evidence of preliminary discussions with DAF stakeholders.
- Technical Merit - The soundness, technical merit, and innovation of the proposed approach, as well as its differentiation from current customer alternatives, and incremental progress toward fulfilling the identified Defense need. Includes the proposed Principal Investigators'/Project Managers', supporting staff, and consultants' qualifications to execute the proposed approach. The topic is truly 'open' (agnostic of industry, technology, and problem area), but proposals for

this topic should demonstrate a high probability of identifying a product-market fit between a DAF stakeholder and the proposed adaptation of the non-defense commercial solution.

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

This feasibility study should:

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

PHASE II: Continue RDT&E to develop, install, integrate, demonstrate, and/or test and evaluate the prototype system(s) determined to be the most feasible solution during the Phase I feasibility study. These activities should focus specifically on:

1. Evaluating the adapted solution against the objectives and measurable key results defined in the Phase I feasibility study.
2. Describing in detail how the solution differs from the non-defense commercial offering to solve the Air Force or Space Force need and how it can be modified for scale.
3. The solution's clear transition path including consideration of all affected stakeholders' inputs. This would include, but not be limited to, end users, engineering, sustainment, contracting, finance, legal, and cyber security.
4. Providing specific details about the solution's integration with other current and future solutions.
5. Explaining the solution's sustainability, i.e., supportability.
6. Identifying other DoD or Governmental customers interested in the solution.

PHASE III DUAL USE APPLICATIONS: Some solutions may go straight from Phase I to Phase III as soon as the product-market fit is verified. The contractor will transition the adapted non-Defense commercial solution to provide expanded mission capability for a broad range of potential Governmental and civilian users and alternate mission applications. NOTES: To answer questions about this topic, AFWERX will host webinars discussing this opportunity. Details about these events will be published on <https://afwerx.com/events/> DAF SBIR/STTR Phase I awards are FAR-based firm fixed price purchase orders. Phase II awards are either FAR-based firm fixed price contracts or Other Transactions for Prototype. If already registered in SAM, ensure the CAGE code, company name, address information, UEI numbers, etc., are correct and current. Firms' SAM registrations shall reflect ALL AWARDS for "Purpose of Registration". For more information, visit [SAM.gov](https://sam.gov). 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. Applicants must review the U.S. Munitions List, <https://www.law.cornell.edu/cfr/text/22/121.1>, and provide a tentative determination regarding applicability to their proposed efforts. If determined applicable, a certified DD Form 2345, Militarily Critical Technology Agreement, must be submitted with the proposal. Information regarding the application process and instructions for form completion are found at <https://www.dla.mil/HQ/LogisticsOperations/Services/JCP/DD2345Instructions/>. NOTE: Export control compliance statements are not all-inclusive and do not remove submitters' liability to 1) comply with applicable ITAR/EAR export control restrictions or 2) inform the Government of potential export restrictions as efforts proceed.

REFERENCES:

- 1) FitzGerald, B., Sander, A., & Parziale, J. (2016). Future Foundry: A New Strategic Approach to Military- Technical Advantage. Retrieved 12 June 2018, <https://www.cnas.org/publications/reports/future-foundry> . ;
- 2) Blank, S. (2016). The Mission Model Canvas: An Adapted Business Model Canvas for Mission-Driven Organizations. Retrieved 12 June 2018, <https://steveblank.com/2016/02/23/the-mission-model-canvas-an-adapted-business-model-canvas-for-mission-driven> ;
- 3) DoD 2018 National Defense Strategy of the United States Summary, 11. Retrieved from <https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>;
- 4) Chaplain, C. T. (2016). Space Acquisitions: Challenges Facing DOD as it Changes Approaches to Space Acquisitions. US Government Accountability Office Washington United States. ;
- 5) Space Capstone Publication, Spacepower (SCP). (2020). Retrieved from https://www.spaceforce.mil/Portals/1/Space%20Capstone%20Publication_10%20Aug%202020.pdf

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

9. Appendix

a. Appendix A- 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 2(d) of this CSO, with no more than 500 employees including affiliates?
If your firm is NOT an eligible small business, your proposal will be disqualified.
3. Does your business concern meet the ownership and control requirements in 13 CFR 121.702?
If your firm does NOT meet the ownership and control requirements, your proposal will be disqualified.
4. Is 50% or more of your firm owned or managed by a corporate entity?
 - (If YES, additional information required in Volume 5) If YES, and the corporate entity is also a small business, please include in this section a description of the corporate relationship, including other affiliates of the owning corporate entity.
5. At a minimum, will two-thirds of the research and/or analytical work be carried out by your small business as described in Section 3(c) of this CSO?
 - If your firm will NOT perform the prescribed percentage of the research and/or analytical work, your proposal will be disqualified.
6. Is the primary employment of the principal investigator with your firm as described in section 2(d) of this CSO?
 - If the primary employment of the principal investigator is not with the firm, your proposal will be disqualified.
7. Has your firm been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving Federal funds?
 - If your firm has been convicted of a fraud-related crime involved SBIR and/or STTR funds, your proposal will be disqualified.
8. Has your firm’s Principal Investigator (PI) or Corporate Official (CO), or owner been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving Federal funds?

- If the Principal Investigator or Corporate Official has been convicted of a fraud-related crime involved SBIR and/or STTR funds, your proposal will be disqualified.

9. Has your firm met the performance benchmarks in Section 2(d) of this CSO and listed by the SBA on their website as eligible to participate? Either answer is awardable.

10. Is your firm registered in the SBA's venture capital database as majority-owned by venture capital operating companies, hedge funds, or private equity firms?

- (If YES, additional information required in Volume 5) If YES, please state whether the VCOC, hedge fund, or private equity firm is also a small business as defined by the SBA. If so, then the VCOC, hedge fund, or private equity firm may count as an 'affiliate' and their employee numbers will need to be added to your employee total.

11. Is your firm more than 50% owned by a single Venture Capital Owned Company (VCOC), hedge fund, or private equity firm?

- (If YES, additional information required in Volume 5) If YES, please state whether the VCOC, hedge fund, or private equity firm is also a small business as defined by the SBA. If so, then the VCOC, hedge fund, or private equity firm may count as an 'affiliate' and their employee numbers will need to be added to your employee total.

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

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

12. Number of employees including all affiliates (average for preceding 12 months):

- If your firm and affiliates have employed, on average over the last 12 months, more than 500 employees, your proposal will be disqualified.

13. Is your firm affiliated as set forth in 13 CFR 121.103?

- (If YES, additional information required in Volume 5) If yes, then please detail your affiliations as described at <https://www.sba.gov/document/support--affiliation-guide-size-standards>.
- Note: This may include investors, i.e., VCs, hedge funds or PE firms, and their other controlled entities, if they own a controlling share of the company.

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

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

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

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

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

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

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

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

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

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

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

- (If YES, additional information required in Volume 5) If you answered 'yes' to this question, you must include the table in Volume 5 of your proposal, which can be found at:
https://www.jhuapl.edu/vendorforms/forms/data_rights_assertion_table.pdf
- The contract cannot be awarded until assertions have been approved.

o If claiming data rights assertions without including a Data Rights Assertions Table, the proposal will be disqualified.

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

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

21. Are teaming partners or subcontractors proposed?

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

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

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

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

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

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

a. Any non-zero answer is awardable.

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

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

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

10. Attachments

- Attachment 1: SBIR/STTR Lifecycle Certification (Required)
- Attachment 2: SBIR/STTR Environment, Safety and Occupational Health (ESOH) Questionnaire (Required)
- Attachment 3: SBIR/STTR Program Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (Required)
- Attachment 4: SBIR/STTR Program Disclosure of Offeror's Ownership or Control by a Foreign Government (Required if Applicable)
- Attachment 5: AF Security Program Questionnaire (Required)
- Attachment 6: Research & Related Senior/Key Person Profile (Required)
- Attachment 7: Certification of Eligibility of Small Business Joint Ventures (Required if Applicable)
- Attachment 8: SBIR/STTR Funding Agreement Certification (Attachment 8; encouraged at proposal submission, required prior to award)
- Attachment 9: Phase I Sample Slide Deck

ATTACHMENT 1 – SBIR/STTR LIFECYCLE CERTIFICATION

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

**ATTACHMENT 2 – DAF 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. This form can be found at https://www.afsbirsttr.af.mil/Portals/60/Pages/Phase%20I-II/SBIR_Ph_II_ESOH_Questionnaire.pdf.

ATTACHMENT 3 – DoD SBIR/STTR Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment

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

Name of person authorized to sign:

Signature of person authorized:

Date:

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

FAR CLAUSES INCORPORATED BY REFERENCE:

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

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

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

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

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

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

**DFARS CLAUSE INCORPORATED BY REFERENCE
252.209-7009 DISCLOSURE OF OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT (JUN 2010)**

ATTACHMENT 5- SECURITY PROGRAM QUESTIONNAIRE

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

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

Date Submitted:

Applicant Name:

Cage Code/SCL and level (if applicable):

Completed by Name:

Position/Title:

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

Additional comments:

ATTACHMENT 6- RESEARCH & RELATED SENIOR/KEY PERSON PROFILE

PROFILE - Project Director/Principal Investigator		
Prefix:	* First Name:	Middle Name:
* Last Name:		Suffix:
Position/Title:		
Department:		
Organization Name:		
Division:		
* Street1:		
Street2:		
* City:	County/ Parish:	
* State:		Province:
* Country: USA: UNITED STATES		* Zip / Postal Code:
* Phone Number:	Fax Number:	
* E-Mail:		
Credential, e.g., agency login:		
* Project Role: PD/PI		Other Project Role Category:
Degree Type:		
Degree Year:		
PROFILE – Additional Senior/Key Person(s) Description(s)		
Prefix:	* First Name:	Middle Name:
* Last Name:		Suffix:
Position/Title:		
Department:		
Organization Name:		
Division:		
* Street1:		
Street2:		
* City:	County/ Parish:	
* State:		Province:
* Country: USA: UNITED STATES		* Zip / Postal Code:
* Phone Number:	Fax Number:	
* E-Mail:		
Credential, e.g., agency login:		
* Project Role:		Other Project Role Category:
Degree Type:		
Degree Year:		

ATTACHMENT 7- VERIFICATION OF ELIGIBILITY OF SMALL BUSINESS JOINT VENTURES

A small business joint venture applicant must submit, with its offer, the representation required in paragraph (c) of FAR solicitation provision 52.212-3, Offeror Representations and Certifications- Commercial Products and Commercial Services, and paragraph (c) of FAR solicitation provision 52.219-1, Small Business Program Representations, in accordance with 52.204-8(d) and 52.212-3(b) for the following categories:

- (A) Small business;
- (B) Service-disabled veteran-owned small business;
- (C) Women-owned small business (WOSB) under the WOSB Program;
- (D) Economically disadvantaged women-owned small business under the WOSB Program; or
- (E) Historically underutilized business zone small business.

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

ATTACHMENT 8: SBIR/STTR FUNDING AGREEMENT CERTIFICATION

This certifications must be completed prior to Phase I award. Applicants are encouraged to submit this document with their initial proposal submissions, as early submission is likely to expedite award for those proposals Selected for negotiations and award. All questions must be answered and an authorized officer of the company must sign and date prior to submission of the certification. The document is found at <https://www.afsbirsttr.af.mil/Program/Phase-I-and-II/> under "Phase I and II Certification – Funding Agreement". Include this completed certification in the proposal under Volume 5, Other Documents.

ATTACHMENT 9: PHASE I SAMPLE SLIDE DECK can be accessed at <https://afwerx.com/sbir-sttr-program-overview/>. Review Section 5(e)(ii) for a complete list of required and recommended slides.