

## AMENDMENT 2

### DEPARTMENT OF DEFENSE SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM STTR 23.D Program Broad Agency Announcement (BAA)

The purpose of Amendment 2 is to provide additional information in sections 4.3, 5.3.f, 5.3.h and 5.3.i.

The purpose of Amendment 1 is to incorporate important programmatic changes as required by the SBIR and STTR Extension Act of 2022 (Pub. L. 117-183), to include:

- a. Add Section 2.2 Due Diligence Program to Assess Security Risks; renumber subsequent sections.
- b. Replace Attachment 2: Foreign Ownership or Control Disclosure with Attachment 2: Disclosures of Foreign Affiliations or Relationships to Foreign Countries
- c. Add definitions to Section 3, as highlighted.
- d. Revisions to section 4.2.e., as highlighted.
- e. Add Section 4.3 Disclosures Regarding Ties to People's Republic of China and Other Foreign Countries; renumber subsequent sections.
- f. Revise Section 5.3.h
- g. Add Section 5.3.i and corresponding Attachment 4: Disclosure of Funding Sources
- h. Revisions to section 6.0, as highlighted.
- i. Removal of section 8.1.bb. (DFARS 252.209-7002, Disclosure of Ownership or Control by a Foreign Government).
- j. Add Section 8.2; renumber subsequent sections.
- k. Various text updates, as highlighted below.

#### IMPORTANT

The DoD STTR FY2023.D Annual BAA is structured to allow participating DoD Components to advertise STTR topics throughout the course of the fiscal year, outside of the three pre-determined BAA cycles. To be notified of STTR opportunities released under this BAA and to receive e-mail updates on the DoD SBIR and STTR Programs, it is highly encouraged that proposing small business concerns subscribe to the DoD SBIR/STTR Listserv by visiting <https://www.dodsbirsttr.mil/submissions/login> and clicking "DSIP Listserv" located under Quick Links.

In addition to the instructions provided in this BAA, each topic release will be accompanied by Component-specific proposal submission instructions, which will detail requirements such as proposal content, formatting, structure, budget/duration and proposal submission deadlines. **Only proposals submitted in response to an active topic under this BAA will be evaluated.**

**Active topic releases and associated Component-specific instructions can be viewed at: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/>. A full topic release index can be viewed in Appendix A of this BAA.**

This BAA and the Defense SBIR/STTR Innovation Portal (DSIP) sites are designed to reduce the time and cost required to prepare a formal proposal. DSIP is the official portal for DoD SBIR/STTR proposal submission. Proposing small business concerns are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Proposing small business concerns submitting through this site for the first time will be asked to register. Proposing small business concerns are required to register for a Login.gov account and link it to their DSIP account. See section 4.14 for more information regarding registration.

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**IMPORTANT (continued)**

The Small Business Administration (SBA), through its SBIR/STTR Policy Directive, purposely departs from normal Government solicitation formats and requirements, thus authorizing agencies to simplify the SBIR/STTR award process and minimize the regulatory burden on small business. Therefore, consistent with the SBA SBIR/STTR Policy Directive, the Department of Defense is soliciting proposals as a Broad Agency Announcement. The DoD SBIR/STTR Programs follow the policies and practices of the SBA SBIR/STTR Policy Directive, current version.

The guidelines presented in this BAA incorporate and make use of the flexibility of the SBA SBIR/STTR Policy Directive to encourage proposals based on scientific and technical approaches most likely to yield results important to the DoD and the private sector. The SBIR/STTR Policy Directive is available [HERE](#).

**Classified proposals will not be accepted under the DoD STTR Program.**

This BAA incorporates **MANDATORY** foreign disclosure requirements and other important programmatic changes as required by the SBIR and STTR Extension Act of 2022 (Pub. L. 117-183). These updates can be found in sections **2.2, 2.5, 3.0, 4.2.e., 4.3, 6.0, 8.2 and Attachment 2**. Small business concerns are highly encouraged to review the full BAA to remain apprised of any additional recent programmatic changes.

**Questions:** Please 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.dodsbrsttr.mil/submissions/learning-support/>. Email DSIP Support at [DoDSBIRSupport@reisystems.com](mailto: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). **See section 4.14 for further information on where to direct questions regarding instructions and topics in this BAA.**

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### 1.0 INTRODUCTION

The Department of Defense (DoD), Office of the Undersecretary of Defense, Research and Engineering (OUSD(R&E)) invites small business concerns and research institutions to jointly submit proposals under this BAA for the Small Business Technology Transfer (STTR) Program. Proposing small business concerns with the capability to conduct research and development (R&D) in any of the defense-related topic areas described in this BAA and to commercialize the results of that R&D are encouraged to participate.

The STTR Program, although modeled substantially after the Small Business Innovation Research (SBIR) Program, is a separate program and is separately financed. Subject to availability of funds, DoD Components will support high quality cooperative research and development proposals of innovative concepts to solve the listed defense-related scientific or engineering problems, especially those concepts that also have high potential for commercialization in the private sector. Partnerships between small businesses and Historically Black Colleges and Universities (HBCUs) or Minority Institutions (MIs) are encouraged, although no special preference will be given to STTR proposals from such proposing small business concerns.

DoD Components may elect to release topics under this BAA throughout the duration of fiscal year 2023. Each topic release will have its own corresponding pre-release, open and close dates, which will be outlined within the Component-specific instructions contained in each release. Topics will be published for at least 45 days prior to the deadline for proposal submission. Small business concerns can stay informed of the release of topics by visiting <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/> and <https://www.dodsbirsttr.mil/submissions/login>, as well as by subscribing to the DoD SBIR/STTR Listserv by visiting <https://www.dodsbirsttr.mil/submissions/login> and clicking “DSIP Listserv” located under Quick Links. **Only proposals submitted in response to an active topic under this BAA will be evaluated.**

Active topic releases and associated Component-specific instructions can be viewed at: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/>. A full topic release index can be viewed in Appendix A of this BAA.

This BAA is for Phase I proposals only. All proposing small business concerns that receive a Phase I award originating from this BAA will be eligible to participate in Phases II competitions and potential Phase III awards. A separate BAA will not be issued requesting Phase II proposals. Unsolicited proposals will not be accepted. DoD Components will notify Phase I awardees of the Phase II proposal submission requirements. The details on the due date, content, and submission requirements of the Phase II proposal will be provided by the awarding DoD Component either in the Phase I award or by subsequent notification. Submission of Phase II proposals will be in accordance with instructions provided by the individual Components. If a proposing small business concern submits their Phase II proposal prior to the dates time specified by the individual Components, it will be rejected without evaluation.

DoD is not obligated to make any awards under Phase I, Phase II, or Phase III. All awards are subject to the availability of funds. DoD is not responsible for any monies expended by the proposing small business concern before the issuance of any award.

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### 2.0 PROGRAM DESCRIPTION

#### 2.1 Objectives

The objectives of the DoD STTR Program include stimulating technological innovation, strengthening the role of small business in meeting DoD research and development needs, fostering and encouraging participation by minority and disadvantaged persons in technological innovation, and increasing the commercial application of DoD-supported research or research and development results.

#### 2.2 Due Diligence Program to Assess Security Risks

The SBIR and STTR Extension Act of 2022 (Pub. L. 117-183) requires the Department of Defense, in coordination with the Small Business Administration, to establish and implement a due diligence program to assess security risks presented by small business concerns seeking a Federally funded award. The full text of the SBIR and STTR Extension Act of 2022 is available at <https://www.congress.gov/117/plaws/publ183/PLAW-117publ183.pdf>.

As previously stated, the DoD SBIR/STTR Programs follow the policies and practices of the Small Business Administration (SBA) SBIR/STTR Policy Directive. The SBA revisions to the Policy Directive are in effect as of May 3, 2023. The Federal Register Notice is available at: <https://www.federalregister.gov/documents/2023/04/03/2023-06870/small-business-innovation-research-program-and-small-business-technology-transfer-program-policy>. This revision is incorporated into this BAA, including the utilization of the Appendix III, Disclosure Questions, as Attachment 2 “Disclosures of Foreign Affiliations or Relationships to Foreign Countries”.

In accordance with Section 4 of the SBIR and STTR Extension Act of 2022, the Department of Defense will review all proposals submitted in response to this BAA to assess security risks presented by small business concerns seeking a Federally funded award. The Department will use information provided by the small business concern in response to the Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Attachment 2) and the proposal to conduct a risk-based due diligence review on the cybersecurity practices, patent analysis, employee analysis, and foreign ownership of a small business concern, including the financial ties and obligations (which shall include surety, equity, and debt obligations) of the small business concern and employees of the small business concern to a foreign country, foreign person, or foreign entity. The Department will also assess proposals utilizing open-source analysis and analytical tools, for the nondisclosures of the information set forth in 15 U.S.C. 638(g)(13).

DoD has partnered with Project Spectrum to provide an online course on Understanding Foreign Ownership, Control, or Influence (FOCI). This course defines FOCI, explains what it means to be under FOCI, and details FOCI's effect on a company seeking initial or continued eligibility for access to a federally funded award. Small business concerns can register and access this course by following the instructions below:

1. Go to [projectspectrum.io](https://projectspectrum.io)
2. Click “Profile/Dashboard” in the top right and then click “Sign Up” from the dropdown menu.
3. Follow the instructions to sign up for an account. Descriptions of the account types are provided below each option.
4. Verify your email by entering the code sent to the email address you provided when signing up.
5. Log in to Project Spectrum by clicking “Profile/Dashboard > Login” in the top right.
6. Find the Training Course on “Understanding Foreign Ownership, Control, or Influence (FOCI)” by clicking “Courses > Training Courses”

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7. Copy the provided password.
8. Click on the course and log in to Encite.io using your email address and the copied password.
9. Enroll in the course and click “Enter” to begin.

For assistance with registration or access to the Project Spectrum website, please contact [support@projectspectrum.io](mailto:support@projectspectrum.io).

### 2.3 OUSD(R&E) Critical Technology Areas

Each DoD Component develops SBIR and STTR topics that are mission-oriented to their programs, however topics generally align with the OUSD(R&E) Critical Technology Areas. While many technologies may cross between these categories, these areas represent the broad and different approaches that are required to advance technologies crucial to the Department. By focusing efforts and investments into these critical technology areas, the Department will accelerate transitioning key capabilities to the Military Services and Combatant Commands.

OUSD(R&E) Critical Technology Areas:

- FutureG
- Trusted AI and Autonomy
- Biotechnology
- Advanced Computing and Software
- Integrated Sensing and Cyber
- Directed Energy (DE)
- Hypersonics
- Microelectronics
- Integrated Network Systems-of-Systems
- Quantum Science
- Space Technology
- Renewable Energy Generation and Storage
- Advanced Materials
- Human-Machine Interfaces

Below are additional technology areas supporting DoD Component-specific mission-critical areas:

- Advanced Infrastructure & Advanced Manufacturing
- Combat Casualty Care
- Emerging Threat Reduction
- Military Infectious Diseases
- Military Operational Medicine
- Mission Readiness & Disaster Preparedness
- Nuclear
- Sustainment & Logistics

Full descriptions of the above technology areas can be reviewed here:

[https://media.defense.gov/2023/Mar/21/2003183351/-1/-1/1/USDRE\\_SBIR\\_STTR\\_CRITICAL\\_TECH\\_AREAS.PDF](https://media.defense.gov/2023/Mar/21/2003183351/-1/-1/1/USDRE_SBIR_STTR_CRITICAL_TECH_AREAS.PDF).

### 2.4 Three Phase Program

The STTR Program is a three-phase program. Phase I is to determine, to the extent possible, the scientific, technical, and commercial merit and feasibility of ideas submitted under the STTR Program. Phase I awards are made in accordance with the SBA Policy Directive guidelines, current version. The period of performance is generally between six to twelve months with twelve months being the maximum period allowable. Proposals should concentrate on research or research and development which will significantly contribute to proving the scientific and technical feasibility, and commercialization potential of the proposed effort, the successful completion of which is a prerequisite for further DoD support in Phase II. Proposing small business concerns are encouraged to consider whether the research or research

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

Under Phase III, the Proposing small business concern is required to obtain funding from either the private sector, a non-STTR 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. STTR Phase III refers to work that derives from, extends, or completes an effort made under prior STTR funding agreements, but is funded by sources other than the STTR Program. Phase III work is typically oriented towards commercialization of STTR research or technology.

### 2.5 Program on Innovation Open Topics

Section 7 of the SBIR and STTR Extension Act of 2022 requires the Department of Defense to establish innovation open topic activities in order to—

- (A) increase the transition of commercial technology to the Department of Defense;
- (B) expand the small business nontraditional industrial base;
- (C) increase commercialization derived from investments of the Department of Defense; and
- (D) expand the ability for qualifying small business concerns to propose technology solutions to meet the needs of the Department of Defense.

Unlike conventional topics, which specify the desired technical objective and output, open topics can use generalized mission requirements or specific technology areas to adapt commercial products or solutions to close capability gaps, improve performance, or provide technological advancements in existing capabilities.

**A small business concern may only submit one (1) proposal to each open topic.** If more than one proposal from a small business concern is received for a single open topic, only the most recent proposal to be certified and submitted prior to the submission deadline will receive an evaluation. All prior proposals submitted by the small business concern for the same open topic will be marked as nonresponsive and will not receive an evaluation.

Open topics released under this BAA will be clearly identified as such in the title and objective of the topic. Proposal preparation instructions for open topics may vary significantly across DoD Components. Proposing small business concerns are advised to carefully read and follow all instructions from the DoD Component for the open topic of interest. Unless specifically noted in the Component instructions, all requirements outlined in this BAA remain in effect for open topics.

### 3.0 DEFINITIONS

The following definitions from the SBA STTR Policy Directive and the Federal Acquisition Regulation (FAR) apply for the purposes of this BAA:



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### **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**

For the purposes of the STTR Program this means research and development conducted jointly by a small business concern and a research institution in which not less than 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. The percentage of work is usually measured by both direct and indirect costs; however, proposing small business concerns should verify how it will be measured with their DoD contracting officer during contract negotiations.

### **Covered Individual**

An individual who contributes in a substantive, meaningful way to the scientific development or execution of a research and development (R&D) project proposed to be carried out with a Federally funded award from DoD. DoD has further designated covered individuals as including all proposed key personnel.

### **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.pmdtc.state.gov/ddtc\\_public](https://www.pmdtc.state.gov/ddtc_public).

NOTE: Export control compliance statements found in the individual Component-specific proposal instructions are not meant to be all inclusive. They do not remove any liability from the submitter 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.

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### **Federally Funded Award**

A Phase I, Phase II (including Direct to Phase II, sequential Phase II/subsequent Phase II and cross-agency Phase II), or Phase III SBIR or STTR award made using a funding agreement.

### **Foreign Affiliation**

As defined in 15 U.S.C. § 638(e)(16), foreign affiliation means 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). This includes appointments or positions deemed adjunct, visiting, or honorary with research institutions located in a foreign country of concern.

### **Foreign Country of Concern**

As defined in 15 U.S.C. § 638(e)(17), foreign country of concern means 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

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(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

- a. **Fraud** includes any false representation about a material fact or any intentional deception designed to deprive the United States unlawfully of something of value or to secure from the United States a benefit, privilege, allowance, or consideration to which an individual or business is not entitled.
- b. **Waste** includes extravagant, careless or needless expenditure of Government funds, or the consumption of Government property, that results from deficient practices, systems, controls, or decisions.
- c. **Abuse** includes any intentional or improper use of Government resources, such as misuse of rank, position, or authority or resources.
- d. The STTR Program training related to Fraud, Waste and Abuse is available at: <https://www.sbir.gov/tutorials/fraud-waste-abuse/tutorial-1>. See Section 4.17 for reporting Fraud, Waste and Abuse.

### 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 **contracts and other transaction authority (OTA) agreements** will be used by DoD Components for all STTR 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>.

### 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 small business concern listed in the Dynamic Small Business Search (DSBS).

### **Malign Foreign Talent Recruitment Program**

As defined in 42 U.S.C § 19237, the term “malign foreign talent recruitment program” means-

- (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

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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; 1 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; 1 Public Law 115–232).

### **Performance Benchmark Requirements**

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

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The SBIR and STTR Extension Act of 2022 (Pub. L. 117-183) amended the application of these benchmarks for more experienced firms. Detailed information on benchmark calculations and increased performance standards for more experienced firms can be found at <https://www.sbir.gov/performance-benchmarks>.

### Personal Conflict of Interest

A situation in which an individual has a financial interest, personal activity, or relationship that could impair the employee's ability to act impartially and in the best interest of the Government when performing under the contract. (A de minimis interest that would not "impair the employee's ability to act impartially and in the best interest of the Government" is not covered under this definition.)

Among the sources of personal conflicts of interest are-

- (i) Financial interests of the covered employee, of close family members, or of other members of the covered employee's household;
- (ii) Other employment or financial relationships (including seeking or negotiating for prospective employment or business); and
- (iii) Gifts, including travel.

Financial interests referred to in paragraph (1) of this definition may arise from-

- (i) Compensation, including wages, salaries, commissions, professional fees, or fees for business referrals;
- (ii) Consulting relationships (including commercial and professional consulting and service arrangements, scientific and technical advisory board memberships, or serving as an expert witness in litigation);
- (iii) Services provided in exchange for honorariums or travel expense reimbursements;
- (iv) Research funding or other forms of research support;
- (v) Investment in the form of stock or bond ownership or partnership interest (excluding diversified mutual fund investments);
- (vi) Real estate investments;
- (vii) Patents, copyrights, and other intellectual property interests; or
- (viii) Business ownership and investment interests.

### 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 proposing small business concern or research institution 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 concern or research institution. 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. Further, a small business concern or research institution may replace the principal investigator on an SBIR/STTR Phase I or Phase II award, subject to approval in writing by the contracting officer.

### Proprietary Information

Proprietary information is any information that a small business concern considers to be non-public information that is owned by the small business concern and is marked accordingly.

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### 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. Proposing small business concerns 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

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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, web-use logs, tissue, blood, medical or personnel records, health data repositories, etc.) in which the identity of the subject is known, or the identity may be readily ascertained by the investigator or associated with the data/information/specimens.

See 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](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](http://www.sba.gov/size).)

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### 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

"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.

## 4.0 PROPOSAL FUNDAMENTALS

### 4.1 Introduction

The proposal must provide sufficient information to demonstrate to the evaluator(s) that the proposed work represents an innovative approach to the investigation of an important scientific or engineering problem and is worthy of support under the stated criteria. The proposed research or research and development must be responsive to the chosen topic, although it need not use the exact approach specified in the topic. Anyone contemplating a proposal for work on any specific topic should determine:

- a. The technical approach has a reasonable chance of meeting the topic objective,
- b. This approach is innovative, not routine, with potential for commercialization and
- c. The proposing small business concern has the capability to implement the technical approach, i.e., has or can obtain people and equipment suitable to the task.

### 4.2 Proposing Small Business Concern Eligibility and Performance Requirements

- a. Each proposing small business concern must qualify as a small business concern as defined by 13 CFR §701-705 at time of award and certify to this on the Cover Sheet of the proposal. The eligibility requirements for the SBIR/STTR programs are unique and do not correspond to those of other small business programs (see Section 3 of this BAA). Proposing small business concerns must meet eligibility requirements for Small Business Ownership and Control (see 13 CFR § 121.702 and Section 4.4 of this BAA).
- b. A minimum of 40% of each STTR project must be conducted by the small business concern and a minimum of 30% of the effort performed by the single research institution, as defined in Section 3. The percentage of work is usually measured by both direct and indirect costs.
- c. For both Phase I and II, the primary employment of the principal investigator must be with the small business concern or the research institution at the time of award and during the conduct of the proposed effort. At the time of award of a Phase I or Phase II contract, the small business



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concern must have at least one employee in a management position whose primary employment is with the small business and who is not also employed by the research institution. 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.

- d. For both Phase I and Phase II, all research or research and development work must be performed by the small business concern and its subcontractors in the United States.
- e. **Benchmarks.** Proposing small business concerns with prior SBIR/STTR awards must meet two benchmark requirements as determined by the Small Business Administration (SBA) on June 1 each year.
  - (1) Phase I to Phase II Transition Rate: For all proposing small business concerns with greater than 20 Phase I awards over the past five fiscal years excluding the most recent year, the ratio of Phase II awards to Phase I awards must be at least 0.25.
  - (2) Commercialization Benchmark: For all proposing small business concerns with greater than 15 Phase II awards over the last ten fiscal years excluding the last two years, the proposing small business concern 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 STTR work equal to or greater than 15% of the number of Phase II awards received during the period.

The SBIR and STTR Extension Act of 2022 (Pub. L. 117-183) amended the application of these benchmarks for more experienced firms. Detailed information on benchmark calculations, increased performance standards for more experienced firms and consequence of failure to meet benchmarks can be found at <https://www.sbir.gov/performance-benchmarks>.

As defined by the SBIR/STTR Policy Directive, Department of the Army, Department of the Navy, and Department of the Air Force each constitute its own Federal agency, and the remaining DoD Components fall under the executive agency of the Department of Defense. Companies that fail to meet either of the benchmarks under the Increased Performance Standards for more Experienced Firms may not receive more than an overall total of 80 awards from DoD, as detailed in the breakdown below:

Army – 20 total Phase I and Direct to Phase II awards

Navy – 20 total Phase I and Direct to Phase II awards

Air Force – 20 total Phase I and Direct to Phase II awards

All other DoD Components - 20 Phase I and Direct to Phase II awards, combined

- f. A small business concern must negotiate a written agreement between the small business and the research institution allocating intellectual property rights and rights to carry out follow-on research, development, or commercialization (see [Model Agreement for the Allocation of Rights](#)).

### 4.3 Disclosures Regarding Ties to People's Republic of China and Other Foreign Countries

Each proposing small business concern is required to complete Attachment 2 of this BAA, "Disclosures of Foreign Affiliations or Relationships to Foreign Countries" and upload the form to Volume 5, Supporting Documents. **Proposals that do not include Attachment 2 in Volume 5 will be deemed noncompliant and will not receive an evaluation.** The disclosure requires for following information:

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- (A) the identity of all owners and covered individuals of the small business concern who are a party to any foreign talent recruitment program of any foreign country of concern, including the People's Republic of China;
- (B) the existence of any joint venture or subsidiary of the small business concern that is based in, funded by, or has a foreign affiliation with any foreign country of concern, including the People's Republic of China;
- (C) any current or pending contractual or financial obligation or other agreement specific to a business arrangement, or joint venture-like arrangement with an enterprise owned by a foreign state or any foreign entity;
- (D) whether the small business concern is wholly owned in the People's Republic of China or another foreign country of concern;
- (E) the percentage, if any, of venture capital or institutional investment by an entity that has a general partner or individual holding a leadership role in such entity who has a foreign affiliation with any foreign country of concern, including the People's Republic of China;
- (F) any technology licensing or intellectual property sales to a foreign country of concern, including the People's Republic of China, during the five-year period preceding submission of the proposal; and
- (G) any foreign entity, offshore entity, or entity outside the United States related to the small business concern.

After reviewing the above listed disclosures of the proposing small business concern, and if determined appropriate by the DoD, the Department may ask the small business concern may to provide true copies of any contractual or financial obligation or other agreement specific to a business arrangement or joint-venture like arrangement with an enterprise owned by a foreign state or any foreign entity in effect during the five-year period preceding submission of the proposal with respect to which the small business concern made the disclosures.

#### 4.4 Joint Ventures

Joint ventures and limited partnerships are permitted, provided that the entity created qualifies as a small business in accordance with the Small Business Act, 13 U.S.C. § 121.701. Proposing small business concerns 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 entity must submit, with its proposal, 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 3 to this BAA and must be uploaded to Volume 5, Supporting Documents of the proposal submission in DSIP, if applicable.

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### **4.5 Majority Ownership in Part by Multiple Venture Capital, Hedge Fund, and Private Equity Firms**

Unless otherwise noted in the participating Component instructions, small businesses that are owned in majority part by multiple venture capital operating companies (VCOCs), hedge funds, or private equity funds are ineligible to submit applications or receive awards for opportunities in this BAA. Component instructions will specify if participation by a small business majority owned in part by VCOCs, hedge funds, or private equity funds is allowable **for a specific topic in the BAA**. If a Component authorizes such participation, any proposing small business concern that is owned, in whole in or in part, by any VCOC, hedge fund, and/or private equity fund must identify each foreign national, foreign entity, or foreign government holding or controlling greater than a 5% equity stake in the proposing small business concern, whether such equity stake is directly or indirectly held. The proposing small business concern must also identify any and all of its ultimate parent owner(s) and any other entities and/or individuals owning more than a 5% equity stake in its chain of ownership.

### **4.6 Conflicts of Interest**

Contract awards to small business concerns 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.

### **4.7 Organizational Conflicts of Interest (OCI)**

#### FAR 9.5 Requirements

In accordance with FAR 9.5, proposing small business concerns are required to identify and disclose all facts relevant to potential OCIs involving the proposing small business concern's organization and any proposed team member (subawardee, consultant). Under this Section, the proposing small business concern is responsible for providing this disclosure with each proposal submitted to the BAA. The disclosure must include the proposing small business concern's, and as applicable, proposed team member's OCI mitigation plan. The OCI mitigation plan must include a description of the actions the proposing small business concern has taken, or intends to take, to prevent the existence of conflicting roles that might bias the proposing small business concern's judgment and to prevent the proposing small business concern from having unfair competitive advantage. The OCI mitigation plan will specifically discuss the disclosed OCI in the context of each of the OCI limitations outlined in FAR 9.505-1 through FAR 9.505-4.

#### Agency Supplemental OCI Policy

In addition, DoD Components may have a supplemental OCI policy that prohibits contractors/performers from concurrently providing Scientific Engineering Technical Assistance (SETA), Advisory and Assistance Services (A&AS) or similar support services and being a technical performer. Therefore, as part of the FAR 9.5 disclosure requirement above, a proposing small business concern must affirm whether the proposing small business concern or any proposed team member (sub-awardee, consultant) is providing SETA, A&AS, or similar support to any DoD Component office(s) under: (a) a current award or sub-award; or (b) a past award or sub-award that ended within one calendar year prior to the proposal's submission date.

If SETA, A&AS, or similar support is being or was provided to any DoD Component office(s), the proposal must include:

- The name of the DoD Component office receiving the support;
- The prime contract number;
- Identification of proposed team member (sub-awardee, consultant) providing the support;

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- and
- An OCI mitigation plan in accordance with FAR 9.5.

### Government Procedures

In accordance with FAR 9.503, 9.504 and 9.506, the Government will evaluate OCI mitigation plans to avoid, neutralize or mitigate potential OCI issues before award and to determine whether it is in the Government's interest to grant a waiver. The Government will only evaluate OCI mitigation plans for proposals that are determined selectable under the BAA evaluation criteria and funding availability.

The Government may require proposing small business concerns to provide additional information to assist the Government in evaluating the proposing small business concern's OCI mitigation plan.

If the Government determines that a proposing small business concern failed to fully disclose an OCI; or failed to provide the affirmation of Government support as described above; or failed to reasonably provide additional information requested by the Government to assist in evaluating the proposing small business concern's OCI mitigation plan, the Government may reject the proposal and withdraw it from consideration for award.

### **4.8 Classified Proposals**

Classified proposals will not be accepted under the DoD STTR Program. If topics will require classified work during Phase II, the proposing small business concern must have a facility clearance in order to perform the Phase II work. For more information on facility and personnel clearance procedures and requirements, please visit the Defense Counterintelligence and Security Agency (DCSA) website at: <https://www.dcsa.mil/mc/ctp/fc/>.

### **4.9 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).

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 Federalwide Assurance (<http://www.hhs.gov/ohrp>). Additional Federal Assurance documentation may also be requested by the awarding DoD Component. All institutions engaged in human subject research, to include subcontractors, must also have a valid Assurance. In addition, personnel involved in human subjects 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. Proposing small business concerns should clearly segregate research activities involving human subjects from other research and development activities in their proposal.

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.

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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 awarding DoD Component 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. Submitters proposing research involving human and/or animal use are encouraged to separate these tasks in the technical proposal and cost proposal in order to avoid potential delay of contract award.**

### **4.10 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).

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. Submitters proposing research involving human and/or animal use are encouraged to separate these tasks in the technical proposal and cost proposal in order to avoid potential delay of contract award.**

### **4.11 Research Involving Recombinant DNA Molecules**

All research involving recombinant DNA molecules shall comply with the applicable federal and state law, regulation and any additional agency guidance. Research shall be approved by an Institutional Biosafety Committee.

### **4.12 Debriefing/Technical Evaluation Narrative**

After final award decisions have been announced, the technical evaluations of the submitter's proposal may be provided to the submitter. Please refer to the Component-specific instructions of your topics of interest for Component debriefing processes.

### **4.13 Pre-Award and Post Award BAA Protests**

Interested parties have the right to protest in accordance with the procedures in FAR Subpart 33.1.

Pre-award agency protests related to the terms of this BAA must be served to: [osd.ncr.ousd-r-e.mbx.SBIR-STTR-Protest@mail.mil](mailto:osd.ncr.ousd-r-e.mbx.SBIR-STTR-Protest@mail.mil).

Post award agency protests related to a selection or award decision must be served to the point-of-contact (POC) listed in the instructions of the DoD Component that authored the topic.

Protests filed with the Government Accountability Office (GAO) shall be in accordance with FAR § 33.104, a copy of the protest shall be submitted to the email address above (pre-award ONLY) or DoD Component POC (selection/award decision ONLY) within one day of filing with the GAO.

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Size protests regarding the small business status of a selected proposing small business concern may be made to the Small Business Administration in accordance with the procedures in FAR § 19.302.

### 4.14 Award Information

All Phase I proposals will be evaluated and judged on a competitive basis in terms of technical capability and technical value. Proposals will be initially screened to determine responsiveness to the topic objective. Proposals passing this initial screening will be technically evaluated by engineers or scientists to determine the most promising technical and scientific approaches. As a common statement of work does not exist, each proposal will be assessed on the merit of the approach in achieving the technical objectives established in the topic. DoD is under no obligation to fund any proposal or any specific number of proposals in a given topic. It also may elect to fund several or none of the proposed approaches to the same topic.

- a. **Number of Phase I Awards.** The number of Phase I awards will be consistent with the Component's RDT&E budget. No Phase I contracts will be awarded until evaluation of all qualified proposals for a specific topic is completed.
- b. **Type of Funding Agreement.** Each Phase I proposal selected for award will be funded under negotiated contracts or purchase orders and will include a reasonable fee or profit consistent with normal profit margins provided to profit-making firms for R/R&D work. Firm Fixed Price, Firm-Fixed-Price Level of Effort, Labor Hour, Time & Material, or Cost-Plus-Fixed-Fee type contracts can be negotiated and are at the discretion of the Component Contracting Officer.
- c. **Dollar Value.** The Phase I contract value varies among the DoD Components; it is therefore important for proposing small business concerns to review Component-specific instructions regarding award size.
- d. **Timing.** Proposing small business concerns will be notified of selection or non-selection status for award by the DoD Component that originated the topic within 90 days of the closing date for the topic. Please refer to the Component-specific instructions for details.

The SBA SBIR/STTR Policy Directive, Section 7(c)(1)(ii), states that agencies should issue the Phase I award no more than 180 days after the closing date of the topic. However, across DoD, the median time between the date that the STTR BAA closes and the award of a Phase I contract is approximately four months.

### 4.15 Questions about this BAA and BAA Topics

#### a. General SBIR/STTR Questions/Information.

##### (1) DSIP Support:

Email DSIP Support at [DoDSBIRSupport@reisystems.com](mailto: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 small business concern, 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. Contact the DoD Component that

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originated the topic in accordance with the Component-specific instructions given at the beginning of that Component's topics.

### (2) Websites:

The Defense SBIR/STTR Innovation Portal (DSIP) at <https://www.dodsbirsttr.mil/submissions/login>, which provides the following resources:

- SBIR and STTR Program Opportunities
- Topics Search Engine
- Topic Q&A
- All Electronic Proposal Submission for Phase I and Phase II Proposals. Small business concerns submitting through this site for the first time will be asked to register on <https://www.dodsbirsttr.mil/submissions>.

DoD SBIR/STTR website at <https://www.defensesbirsttr.mil/>, which provides the following resources:

- [Customer Support Information](#)
- SBIR and STTR Program Opportunities
- Dates for Current and Upcoming Opportunities
- Past SBIR and STTR Program Opportunities

### (3) SBIR/STTR Updates and Notices:

To be notified of SBIR/STTR opportunities and to receive e-mail updates on the DoD SBIR and STTR Programs, subscribe to the Listserv by selecting “DSIP Listserv” under Quick Links on the DSIP login page.

- b. **General Questions about a DoD Component.** General questions pertaining to a particular DoD Component and the Component-specific BAA instructions should be submitted in accordance with the instructions given at the beginning of the Component-specific instructions with each topic release.
- c. **Direct Contact with Topic Authors.** During the pre-release period, proposing small business concerns have an opportunity to contact topic authors by telephone or e-mail to ask technical questions about specific BAA topics. Questions should be limited to specific information related to improving the understanding of a particular topic’s requirements. Proposing small business concerns may not ask for advice or guidance on solution approach and you may not submit additional material to the topic author. If information provided during an exchange with the topic author is deemed necessary for proposal preparation, that information will be made available to all parties through Topic Q&A. After this period questions must be asked through Topic Q&A as described below.
- d. **Topic Q&A.** Once DoD a topic enters the open period and DoD begins accepting proposals, no further direct contact between proposing small business concerns and topic authors is allowed, unless the Topic Author is responding to a question submitted during the pre-release period. However, proposing small business concerns 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

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due date WILL NOT receive a response. Refer to the Component-specific instructions given at the beginning of that Component's topics for help with an administrative question.

Proposing small business concerns 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).

**Proposing small business concerns are advised to monitor Topic Q&A during the BAA period for questions and answers. Proposing small business concerns should also frequently monitor DSIP for updates and amendments to the topics.**

### 4.16 Registrations and Certifications

Individuals from proposing small business concerns 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.**

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 UEI or DUNS number and your Firm PIN in order to link your Login.gov account with your DSIP account. If the email address associated with your existing DSIP account has been used for multiple DSIP accounts within your Firm, you will also need your Firm's UEI or 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 UEI or 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.**

The System for Award Management (SAM) allows proposing small business concerns interested in conducting business with the Federal Government to provide basic information on business structure and capabilities as well as financial and payment information. Proposing small business concerns must be registered in SAM. To register, visit [www.sam.gov](http://www.sam.gov). A proposing small business concern that is already registered in SAM should login to SAM and ensure its registration is active and its representations and certifications are up-to-date to avoid delay in award.



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

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

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

### **4.17 Promotional Materials**

Promotional and non-project related discussion is discouraged, and additional information provided via Universal Resource Locator (URL) links or on computer disks, CDs, DVDs, video tapes or any other medium will not be accepted or considered in the proposal evaluation.

### **4.18 Prior, Current, or Pending Support of Similar Proposals or Awards**

**IMPORTANT** -- While it is permissible, with proposal notification, to submit identical proposals or proposals containing a significant amount of essentially equivalent work (see Section 3) for consideration under numerous federal program BAAs or solicitations, it is unlawful to enter into contracts or grants requiring essentially equivalent effort. If there is any question concerning prior, current, or pending support of similar proposals or awards, it must be disclosed to the soliciting agency or agencies as early as possible. See Section 5.4.c(11).

### **4.19 Fraud and Fraud Reporting**

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

The Department of Defense, Office of Inspector General Hotline ("Defense Hotline") is an important avenue for reporting fraud, waste, abuse, and mismanagement within the Department of Defense. The Office of Inspector General 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 Defense 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/> to submit a complaint. Mailed correspondence should be addressed to the Defense Hotline, The Pentagon, Washington, DC 20301-1900, or e-mail addressed to [hotline@dodig.mil](mailto:hotline@dodig.mil).

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### 4.20 State and Other Assistance Available

Many states have established programs to provide services to those small business concerns and individuals wishing to participate in the Federal STTR Program. These services vary from state to state, but may include:

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

Contact your State SBIR/STTR Support office at [https://www.sbir.gov/state\\_services?state=105813#](https://www.sbir.gov/state_services?state=105813#) for further information. Small Businesses may seek general administrative guidance from small and disadvantaged business utilization specialists located in various Defense Contract Management activities throughout the continental United States.

### 4.21 Discretionary Technical and Business Assistance (TAB A)

DoD has mandated the use of TAB A pending further SBA guidance and establishment of a limit on the amount of technical and business assistance services that may be received or purchased by a small business concern that has received multiple Phase II SBIR or STTR awards for a fiscal year. However, proposing small business concerns should carefully review individual component instructions to determine if TAB A is being offered and follow specific proposal requirements for requesting TAB A funding.

## 5.0 PHASE I PROPOSAL

### 5.1 Introduction

This BAA and the Defense SBIR/STTR Innovation Portal (DSIP) sites are designed to reduce the time and cost required to prepare a formal proposal. DSIP is the official portal for DoD SBIR/STTR proposal submission. Proposing small business concerns are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Proposing small business concerns submitting through this site for the first time will be asked to register. It is recommended that small business concerns register as soon as possible upon identification of a proposal opportunity to avoid delays in the proposal submission process.

**Guidance on allowable proposal content may vary by Component. A completed proposal submission in DSIP does NOT indicate that each proposal volume has been completed in accordance with the Component-specific instructions. Accordingly, it is the proposing small business concern's responsibility to consult the Component-specific instructions for detailed guidance, including required proposal documentation and structure, cost and duration limitations, budget structure, TAB A allowance and proposal page limits.**

DSIP provides a structure for providing the following proposal volumes:

Volume 1: Proposal Cover Sheet

Volume 2: Technical Volume

Volume 3: Cost Volume

Volume 4: Company Commercialization Report (upload of CCR from SBIR.gov to DSIP is required for proposing small business concerns with prior Federal SBIR or STTR awards)

Volume 5: Supporting Documents

- a. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Attachment 1) MANDATORY

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- b. Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Attachment 2) MANDATORY
- c. Verification of Eligibility of Small Business Joint Ventures (Attachment 3), if applicable
- d. Disclosure of Funding Sources (Attachment 4) MANDATORY
- e. Other supporting documentation (Refer to Component-specific instructions for additional Volume 5 requirements)

**A completed proposal submission in DSIP does NOT indicate that the mandatory supporting documents have been uploaded. It is the responsibility of the proposing small business concern to ensure that the mandatory documents listed above have been uploaded and included with the proposal submission.**

Volume 6: Fraud, Waste and Abuse Training

All proposing small business concerns must complete the following:

- Volume 4: Company Commercialization Report (upload of CCR from SBIR.gov to DSIP is required for proposing small business concerns with prior Federal SBIR or STTR awards)
- Volume 5(a): Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Attachment 1)
- Volume 5(b): Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Attachment 2)
- Volume 5(c): Disclosure of Funding Sources (Attachment 4)
- Volume 6: Fraud, Waste and Abuse training.

Refer to Section 5.3 below for full details on these proposal requirements.

A Phase I Proposal Template is available to provide helpful guidelines for completing each section of your Phase I technical proposal. This can be found at <https://www.dodsbirsttr.mil/submissions/learning-support/firm-templates>.

Detailed guidance on registering in DSIP and using DSIP to submit a proposal can be found at <https://www.dodsbirsttr.mil/submissions/learning-support/training-materials>. If the proposal status is “In Progress” or “Ready to Certify” it will NOT be considered submitted, even if all volumes are added prior to the BAA close date. The proposing small business concern may modify all proposal volumes prior to the BAA close date.

Although signatures are not required on the electronic forms at the time of submission the proposal must be certified electronically by the corporate official for it to be considered submitted. If the proposal is selected for negotiation and possible award, the DoD Component program will contact the proposing small business concern for signatures prior to award.

### 5.2 Marking Proprietary Proposal Information

Proposing small business concerns that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall:

- (1) Mark the first page of each Volume of the proposal submission with the following legend:

"This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this proposing small business concern as a result of – or in connection with – the submission of this data, the Government shall have the right to duplicate, use, or

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disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in pages [insert numbers or other identification of sheets]"; and

(2) Mark each sheet of data it wishes to restrict with the following legend:

"Use or disclosure of data contained on this page is subject to the restriction on the first page of this volume."

The DoD assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose.

Restrictive notices notwithstanding, proposals and final reports submitted through the Defense SBIR/STTR Innovation Portal (DSIP) may be handled, for administrative purposes only, by support contractors. All support contractors are bound by appropriate non-disclosure agreements.

### 5.3 Phase I Proposal Instructions

#### a. 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 negotiation and possible 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, the small business concern will not be able to proceed with proposal submission. Deviations from the POW minimum requirements for STTR proposals are not allowed.

#### b. Format of Technical Volume (Volume 2)

(1) **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.**

(2) **Length:** It is the proposing small business concern's responsibility to verify that the Technical Volume does not exceed the page limit after upload to DSIP. Please refer to

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Component-specific instructions for how a technical volume is handled if the stated page count is exceeded. Some Components will reject the entire technical proposal if the proposal exceeds the stated page count.

- (3) **Layout:** Number all pages of your proposal consecutively. Those who wish to respond must submit a direct, concise, and informative research or research and development proposal (no type smaller than 10-point on standard 8-1/2" x 11" paper with one-inch margins). The header on each page of the Technical Volume should contain your company name, topic number, and proposal number assigned by the Defense SBIR/STTR Innovation Portal (DSIP) when the Cover Sheet was created. The header may be included in the one-inch margin.

### c. Content of the Technical Volume (Volume 2)

The Technical Volume should cover the following items in the order given below:

- (1) **Identification and Significance of the Problem or Opportunity.** Define the specific technical problem or opportunity addressed and its importance.
- (2) **Phase I Technical Objectives.** Enumerate the specific objectives of the Phase I work, including the questions the research and development effort will try to answer to determine the feasibility of the proposed approach.
- (3) **Phase I Statement of Work (including Subcontractors' Efforts)**
  - a. Provide an explicit, detailed description of the Phase I approach. If a Phase I option is required or allowed by the Component, describe appropriate research activities which would commence at the end of Phase I base period should the Component elect to exercise the option. The Statement of Work should 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. The methods planned to achieve each objective or task should be discussed explicitly and in detail. This section should be a substantial portion of the Technical Volume section.
  - b. This BAA may contain topics that have been identified by the Program Manager as research or activities involving Human/Animal Subjects and/or Recombinant DNA. In the event that Phase I performance includes performance of these kinds of research or activities, please identify the applicable protocols and how those protocols will be followed during Phase I. Please note that funds cannot be released or used on any portion of the project involving human/animal subjects or recombinant DNA research or activities until all of the proper approvals have been obtained (see Sections 4.7 - 4.9). **Submitters proposing research involving human and/or animal use are encouraged to separate these tasks in the technical proposal and cost proposal in order to avoid potential delay of contract award.**
- (4) **Related Work.** Describe significant activities directly related to the proposed effort, including any conducted by the principal investigator, the proposing small business concern, consultants, or others. Describe how these activities interface with the proposed project and discuss any planned coordination with outside sources. The technical volume must persuade reviewers of the proposing small business concern's awareness of the state-of-the-art in the specific topic. Describe previous work not directly related to the proposed effort but similar. Provide the following:

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- a. Short description,
  - b. Client for which work was performed (including individual to be contacted and phone number), and
  - c. Date of completion.
- (5) **Relationship with Future Research or Research and Development**
- a. State the anticipated results of the proposed approach if the project is successful.
  - b. Discuss the significance of the Phase I effort in providing a foundation for Phase II research or research and development effort.
  - c. Identify the applicable clearances, certifications and approvals required to conduct Phase II testing and outline the plan for ensuring timely completion of said authorizations in support of Phase II research or research and development effort.
- (6) **Commercialization Strategy.** Describe in approximately one page your company's strategy for commercializing this technology in DoD, other Federal Agencies, and/or private sector markets. Provide specific information on the market need the technology will address and the size of the market. Also include a schedule showing the quantitative commercialization results from this STTR project that your company expects to achieve.
- (7) **Key Personnel.** Identify key personnel who will be involved in the Phase I effort including information on directly related education and experience. A concise technical resume of the principal investigator, including a list of relevant publications (if any), must be included (Please do not include Privacy Act Information). All resumes will count toward the page limitations for Volume 2.
- (8) **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 STTR project and do not report them. This is not necessarily the case and a proposal may be deemed nonresponsive if the requested information is not provided. Therefore, small business concerns should report any and all individuals expected to be involved on this project that are considered a foreign national as defined in Section 3 of the BAA. You may be asked to provide additional information during negotiations in order to verify the foreign citizen's eligibility to participate on a STTR 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)).
- (9) **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.

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- (10) **Subcontractors/Consultants.** Involvement of a research institution in the project is required and the institution should be identified and described to the same level of detail as the prime contractor costs. A minimum of 40% of the research and/or analytical work in Phase I, as measured by direct and indirect costs, must be conducted by the proposing small business concern, unless otherwise approved in writing by the Contracting Officer. STTR efforts may include subcontracts with Federal Laboratories and Federally Funded Research and Development Centers (FFRDCs). A waiver is no longer required for the use of federal laboratories and FFRDCs; however, proposing small business concerns must certify their use of such facilities on the Cover Sheet of the proposal.
- (11) **Prior, Current, or Pending Support of Similar Proposals or Awards.** If a proposal submitted in response to this BAA 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 and provide the following information:
- a. 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.
  - b. Date of proposal submission or date of award.
  - c. Title of proposal.
  - d. Name and title of principal investigator for each proposal submitted or award received.
  - e. Title, number, and date of BAA(s) or solicitation(s) under which the proposal was submitted, will be submitted, or under which award is expected or has been received.
  - f. If award was received, state contract number.
  - g. Specify the applicable topics for each SBIR/STTR proposal submitted or award received.

*Note: If this does not apply, state in the proposal "No prior, current, or pending support for proposed work."*

**d. Content of the Cost Volume (Volume 3)**

Complete the Cost Volume by using the on-line cost volume form on the Defense SBIR/STTR Innovation Portal (DSIP). Some items in the Cost Breakdown Guidance may not apply to the proposed project. If that is the case, there is no need to provide information on each and every item. What matters is that enough information be provided to allow us to understand how you plan to use the requested funds if a contract is awarded.

- (1) List all key personnel by name as well as by number of hours dedicated to the project as direct labor.
- (2) While special tooling and test equipment and material cost may be included under Phases I, the inclusion of equipment and material will be carefully reviewed relative to need and appropriateness for the work proposed. The purchase of special tooling and test equipment must, in the opinion of the Component Contracting Officer, be advantageous to the Government and should be related directly to the specific topic. These may include such items as innovative instrumentation or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with the DoD Component, unless it is determined that transfer of title to the contractor would be more cost effective than recovery of the equipment by the DoD Component.

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- (3) Cost for travel funds must be justified and related to the needs of the project.
- (4) Cost sharing is permitted for proposals under this BAA; however, cost sharing is not required nor will it be an evaluation factor in the consideration of a Phase I proposal.
- (5) A Phase I Option (if applicable) should be fully costed separately from the Phase I (base) approach.
- (6) All subcontractor costs and consultant costs, such as labor, travel, equipment, materials, must be detailed at the same level as prime contractor costs. Provide detailed substantiation of subcontractor costs in your cost proposal. Volume 5, Supporting Documents, may be used if additional space is needed.

When a proposal is selected for negotiation and possible award, you must be prepared to submit further documentation to the Component Contracting Officer to substantiate costs (e.g., an explanation of cost estimates for equipment, materials, and consultants or subcontractors). For more information about cost proposals and accounting standards, see <https://www.dcaa.mil/Guidance/Audit-Process-Overview/>.

### e. **Company Commercialization Report (Volume 4)**

The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. SBIR and STTR awardees are required by SBA to update and maintain their organization's CCR on SBIR.gov. Commercialization information is required upon completion of the last deliverable under the funding agreement. Thereafter, SBIR and STTR awardees are requested to voluntarily update the information in the database annually for a minimum period of 5 years.

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

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



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

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

- a. If the proposing small business concern has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, and **DOES have a new or revised CCR from SBIR.gov to upload to DSIP**, select YES.
  - If the user is the Firm Admin, they can upload the PDF of the CCR from SBIR.gov directly on this page. It will also be updated in the Firm Forms and be associated with all new or in-progress proposals submitted by the small business concern. If the user is not the Firm Admin, they will receive a message that they do not have access and must contact the Firm Admin to complete this action.
  - **WARNING:** Uploading a new CCR under the Firm Forms section of DSIP or clicking “Save” or “Submit” in Volume 4 of one proposal submission is considered a change for ALL proposals under any open BAAs or CSOs. If a proposing small business concern 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 small business concerns will have to recertify and resubmit such proposals. If a proposing small business concern does not recertify or resubmit such proposals, they will not be considered fully submitted and will not be evaluated.
- b. If the proposing small business concern has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, and **DOES NOT have a new or revised CCR from SBIR.gov to upload to DSIP**, select NO.
  - If a prior CCR was uploaded to the Firm Forms, the proposing small business concern 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 proposing small business concern to confirm that the CCR has been uploaded by the Firm Admin.
  - If no file dialog box is present at the bottom of the page that is an indication that **there is no previously uploaded CCR in the DSIP Firm Forms**. To fulfill the DSIP CCR requirement the Firm Admin must follow steps 1-5 listed above to download a PDF of the CCR from SBIR.gov and upload it to the DSIP Firm Forms to be included with all proposal submissions.
- c. If the proposing small business concern 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 small business concern will select NO. The CCR section of the proposal will be marked complete.

While all proposing small business concerns 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, **please refer to the Component-specific instructions for details on how this information will be considered during proposal evaluations.**

- f. **Supporting Documents (Volume 5)**

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Volume 5 is provided for proposing small business concerns to submit additional documentation to support the Technical Volume (Volume 2), and the Cost Volume (Volume 3).

All proposing small business concerns are REQUIRED to submit the following documents to Volume 5:

1. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Attachment 1)
2. Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Attachment 2)
3. Disclosure of Funding Sources (Attachment 4)

**A completed proposal submission in DSIP does NOT indicate that the mandatory supporting documents have been uploaded. It is the responsibility of the proposing small business concern to ensure that the mandatory documents listed above have been uploaded and included with the proposal submission.**

Any of the following documents may be included in Volume 5 if applicable to the proposal. Refer to Component-specific instructions for additional Volume 5 requirements.

1. Letters of Support
2. Additional Cost Information
3. Funding Agreement Certification
4. Technical Data Rights (Assertions)
5. Lifecycle Certification
6. Allocation of Rights
7. Verification of Eligibility of Small Business Joint Ventures (Attachment 3)
8. Other

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

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

All proposals must include certifications in Defense Federal Acquisition Regulation Supplement (DFARS) provisions 252.204-7016, 252.204-7017, and clause 252.204-7018, executed by the proposing small business concern's authorized company representative. These DFARS provisions and clauses may be found in BAA Attachment 1. **These certifications must be signed by the authorized company representative and uploaded as a separate PDF file in the supporting documents sections of Volume 5 for all proposal submissions.**

The effort to complete the required certification clauses includes the proposing small business concern and any contractors that may be proposed as a part of the submission including research partners and suppliers. Therefore, proposing small business concerns are strongly encouraged to review the requirements of these certifications early in the proposal development process. Failure to submit or complete the required certifications as a part of the

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proposal submission process may be cause for rejection of the proposal submission without evaluation.

### **h. Disclosures of Foreign Affiliations or Relationships to Foreign Countries**

In accordance with Section 4 of the SBIR and STTR Extension Act of 2022 and the SBA SBIR/STTR Policy Directive, the Department of Defense will review all proposals submitted in response to this BAA to assess security risks presented by small business concerns seeking a Federally funded award. **Proposing small business concerns must complete Attachment 2: Disclosures of Foreign Affiliations or Relationships to Foreign Countries and upload to Volume 5. Proposals that do not include Attachment 2 in Volume 5 will be deemed noncompliant and will not receive an evaluation.** For additional details, please refer to Section 2.2 and 4.3.

### **i. Certification Regarding Disclosure of Funding Sources**

The proposing small business concern must comply with Section 223(a) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, which requires that covered individuals:

- (A) disclose the amount, type, and source of all current and pending research support received by, or expected to be received by, the individual as of the time of the disclosure;
- (B) certify that the disclosure is current, accurate, and complete; and
- (C) agree to update such disclosure at the request of the agency prior to the award of support and at any subsequent time the agency determines appropriate during the term of the award

Small business concerns must also certify that each covered individual who is employed by the small business and listed on the proposal has been made aware of the requirements listed above. **The disclosure and certification must be made by completing Attachment 4 of this BAA and uploading to Volume 5, Supporting Documents of the proposal submission in DSIP, utilizing the “Other” category for document type.**

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

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

## 6.0 PHASE I EVALUATION CRITERIA

Proposals will be evaluated based on the criteria outlined below, unless otherwise specified in the Component-specific instructions. Selections will be based on a determination of the overall technical value of each proposal and an evaluation of the cost volume, with the appropriate method of analysis

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given the contract type to be awarded, in order for selection of the proposal(s) most advantageous to the Government, considering the following factors which are listed in descending order of importance:

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

Cost or budget data submitted with the proposal will be considered during evaluation.

Technical reviewers will base their conclusions only on information contained in the proposal. It cannot be assumed that reviewers are acquainted with the small business concern or key individuals or any referenced experiments. Relevant supporting data such as journal articles, literature, including Government publications, etc., should be included based on requirements provided in Component-specific instructions.

### Denial of Awards

The DoD will not make an award under the SBIR program if it determines that—

- (A) the small business concern submitting the proposal —
  - (i) has an owner or covered individual that is party to a malign foreign talent recruitment program;
  - (ii) has a business entity, parent company, or subsidiary located in the People's Republic of China or another foreign country of concern; or
  - (iii) has an owner or covered individual that has a foreign affiliation with a foreign entity located in the People's Republic of China or another foreign country of concern; and
- (B) the relationships and commitments described in clauses (i) through (iii) of subparagraph (A)—
  - (i) interfere with the capacity for activities supported by the DoD to be carried out;
  - (ii) create duplication with activities supported by the DoD;
  - (iii) present concerns about conflicts of interest;
  - (iv) were not appropriately disclosed to the DoD;
  - (v) violate Federal law or terms and conditions of contracts or other agreements awarded by the DoD; or
  - (vi) pose a risk to national security.

## 7.0 PHASE II PROPOSAL INFORMATION

### 7.1 Introduction

Phase II proposals may only be submitted by Phase I awardees. Submission of Phase II proposals are not permitted at this time and, if submitted, may be rejected without evaluation. Phase II proposal preparation and submission instructions will be provided by the DoD Components to Phase I awardees. See Component-specific instructions for more information on Direct to Phase II Program preparation and submission instructions.

### 7.2 Proposal Provisions

**IMPORTANT** -- While it is permissible, with proposal notification, to submit identical proposals or proposals containing a significant amount of essentially equivalent work for consideration under

## **AMENDMENT 2**

numerous federal program BAAs and solicitations, it is unlawful to enter into contracts or grants requiring essentially equivalent effort. If there is any question concerning this, it must be disclosed to the soliciting agency or agencies as early as possible. If a proposal submitted for a Phase II effort 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 Cover Sheet and provide the information required in Section 5.4.c(11).

Due to specific limitations on the amount of funding and number of awards that may be awarded to a particular small business concern per topic using SBIR/STTR program funds, Head of Agency Determinations are now required before a different agency may make an award using another agency's topic. This limitation does not apply to Phase III funding. Please contact your original sponsoring agency before submitting a Phase II proposal to an agency other than the one who sponsored the original topic.

Section 4(b)(1)(i) of the SBIR/STTR Policy Directive provides that, at the agency's discretion, projects awarded a Phase I under a BAA or solicitation for SBIR may transition in Phase II to STTR and vice versa. A small business concern wishing to transfer from one program to another must contact their designated technical monitor to discuss the reasons for the request and the agency's ability to support the request. The transition may be proposed prior to award or during the performance of the Phase II effort. Agency disapproval of a request to change programs shall not be grounds for granting relief from any contractual performance requirement. All approved transitions between programs must be noted in the Phase II award or award modification signed by the contracting officer that indicates the removal or addition of the research institution and the revised percentage of work requirements.

### **7.3 Commercialization Strategy**

At a minimum, your commercialization strategy must address the following five questions:

- (1) What is the first product that this technology will go into?
- (2) Who will be the customers, and what is the estimated market size?
- (3) How much money will be needed to bring the technology to market, and how will that money be raised?
- (4) Does the company contain marketing expertise and, if not, how will that expertise be brought into the company?
- (5) Who are the proposing small business concern's competitors, and what is the price and/or quality advantage over those competitors?

The commercialization strategy must also include a schedule showing the anticipated quantitative commercialization results from the Phase II project at one year after the start of Phase II, at the completion of Phase II, and after the completion of Phase II (i.e., amount of additional investment, sales revenue, etc.). After Phase II award, the company is required to report actual sales and investment data in its SBA Company Commercialization Report via "My Dashboard" on SBIR.gov at least annually. For information on formatting, page count and other details, please refer to the Component-specific instructions.

### **7.4 Phase II Evaluation Criteria**

Phase II proposals will be evaluated based on the criteria outlined above in section 6.0, unless otherwise specified in the Component-specific instructions.

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### **7.5 Phase II Award Information**

DoD Components will notify Phase I awardees of the Phase II proposal submission requirements. Submission of Phase II proposals will be in accordance with instructions provided by individual Components. The details on the due date, content, and submission requirements of the Phase II proposal will be provided by the awarding DoD Component either in the Phase I award or by subsequent notification.

### **7.6 Adequate Accounting System**

In order to reduce risk to the small business and avoid potential contracting delays, it is suggested that companies interested in pursuing Phase II SBIR/STTR contracts and other contracts of similar size with the Department of Defense (DoD), have an adequate accounting system per General Accepted Accounting Principles (GAAP), Generally Accepted Government Auditing Standards (GAGAS), Federal Acquisition Regulation (FAR) and Cost Accounting Standards (CAS) in place. The accounting system will be audited by the Defense Contract Audit Agency (DCAA). DCAA's requirements and standards are available on their Website at: <https://www.dcaa.mil/Guidance/Audit-Process-Overview/> and <https://www.dcaa.mil/Checklists-Tools/Pre-award-Accounting-System-Adequacy-Checklist/>.

### **7.7 Phase II Enhancement Policy**

To further encourage the transition of STTR research into DoD acquisition programs as well as the private sector, certain DoD Components have developed their own Phase II Enhancement policy. Under this policy, the Component will provide a Phase II awardee with additional Phase II STTR funding if the company can match the additional STTR funds with non-STTR funds from DoD acquisition programs or the private sector.

See component instructions for more details on Phase II Enhancement opportunities.

### **7.8 Commercialization Readiness Program (CRP)**

The SBIR/STTR Reauthorization Act of 2011 establishes the Commercialization Pilot Program (CPP) as a long-term program titled the Commercialization Readiness Program (CRP).

Each Military Department (Army, Navy, and Air Force) has established a Commercialization Readiness Program. Please check the Component instructions for further information.

The DoD SBIR/STTR Program Office established the OSD Transitions SBIR Technology (OTST) Pilot Program. The OTST pilot program is an interim technology maturity phase (Phase II), inserted into the SBIR development.

For more information contact [osd.ncr.ousd-r-e.mbx.sbir-sttr-tech-transition@mail.mil](mailto:osd.ncr.ousd-r-e.mbx.sbir-sttr-tech-transition@mail.mil).

## **8.0 CONTRACTUAL REQUIREMENTS**

### **8.1 Additional Contract Requirements**

Upon award of a contract, the contractor will be required to make certain legal commitments through acceptance of Government contract clauses in the Phase I contract. The outline that follows is illustrative of the types of provisions required by the Federal Acquisition Regulation that will be included in the Phase I contract. This is not a complete list of provisions to be included in Phase I contracts, nor does it

## AMENDMENT 2

contain specific wording of these clauses. Copies of complete general provisions will be made available prior to award.

### Examples of general provisions:

- a. **Standards of Work.** Work performed under the contract must conform to high professional standards.
- b. **Inspection.** Work performed under the contract is subject to Government inspection and evaluation at all reasonable times.
- c. **Examination of Records.** The Comptroller General (or a fully authorized representative) shall have the right to examine any directly pertinent records of the contractor involving transactions related to this contract.
- d. **Default.** The Government may terminate the contract if the contractor fails to perform the work contracted.
- e. **Termination for Convenience.** The contract may be terminated at any time by the Government if it deems termination to be in its best interest, in which case the contractor will be compensated for work performed and for reasonable termination costs.
- f. **Disputes.** Any dispute concerning the contract which cannot be resolved by agreement shall be decided by the contracting officer with right of appeal.
- g. **Contract Work Hours.** The contractor may not require an employee to work more than eight hours a day or forty hours a week unless the employee is compensated accordingly (that is, receives overtime pay).
- h. **Equal Opportunity.** The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
- i. **Affirmative Action for Veterans.** The contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran.
- j. **Affirmative Action for Handicapped.** The contractor will not discriminate against any employee or applicant for employment because he or she is physically or mentally handicapped.
- k. **Officials Not to Benefit.** No member of or delegate to Congress shall benefit from the contract.
- l. **Covenant Against Contingent Fees.** No person or agency has been employed to solicit or secure the contract upon an understanding for compensation except bona fide employees or commercial agencies maintained by the contractor for the purpose of securing business.
- m. **Gratuities.** The contract may be terminated by the Government if any gratuities have been offered to any representative of the Government to secure the contract.
- n. **Patent Infringement.** The contractor shall report each notice or claim of patent infringement based on the performance of the contract.
- o. **Military Security Requirements.** The contractor shall safeguard any classified information associated with the contracted work in accordance with applicable regulations.
- p. **American Made Equipment and Products.** When purchasing equipment or a product under the SBIR funding agreement, purchase only American-made items whenever possible.

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

- q. **Unique Identification (UID).** If your proposal identifies hardware that will be delivered to the government be aware of the possible requirement for unique item identification in accordance with DFARS 252.211-7003.
- r. **Disclosure of Information.** In accordance with FAR 252.204-7000, Government review and approval will be required prior to any dissemination or publication, except within and between the Contractor and any subcontractors, of classified and non-fundamental information

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- developed under this contract or contained in the reports to be furnished pursuant to this contract.
- s. **Animal Welfare.** Contracts involving research, development, test, evaluation, or training on vertebrate animals will incorporate DFARS clause 252.235-7002.
  - t. **Protection of Human Subjects.** Effective 29 July 2009, contracts that include or may include research involving human subjects in accordance with 32 CFR Part 219, DoD Directive 3216.02 and 10 U.S.C. 980, including research that meets exemption criteria under 32 CFR 219.101(b), will incorporate DFARS clause 252.235-7004.
  - u. **E-Verify.** Contracts exceeding the simplified acquisition threshold may include the FAR clause 52.222-54 “Employment Eligibility Verification” unless exempted by the conditions listed at FAR 22.1803.
  - v. **ITAR.** In accordance with 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 BAAs/solicitations and contracts. Therefore, all awards resulting from this BAA will include DFARS 252.225-7048. Full text of the clause may be found at <https://www.govinfo.gov/content/pkg/CFR-2013-title48-vol3/pdf/CFR-2013-title48-vol3-sec252-225-7048.pdf>.
  - w. **Cybersecurity.** Any small business concern receiving an SBIR/STTR award is required to provide adequate cybersecurity on all covered contractor information systems. Specific security requirements and cyber incident reporting requirements are listed in DFARS 252.204.7012. To learn about cybersecurity resources for your SBIR/STTR contract visit the Blue Cyber webpage: <https://www.safcn.af.mil/CISO/Small-Business-Cybersecurity-Information/>.
  - x. **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”.
  - y. **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).
  - z. **Notice of NIST SP 800-171 DoD Assessment Requirements.** As prescribed by DFARS 252.204-7019, in order to be considered for award, the SBC is required to implement NIST SP 800-171. The SBC shall have a current assessment (see 252.204-7020) for each covered contractor information system that is relevant to the offer, contract, task order, or delivery order. The Basic, Medium, and High NIST SP 800-171 DoD Assessments are described in the NIST SP 800-171 DoD Assessment Methodology located at [https://www.acq.osd.mil/dpap/pdi/cyber/strategically\\_assessing\\_contractor\\_implementation\\_of\\_NIST\\_SP\\_800-171.html](https://www.acq.osd.mil/dpap/pdi/cyber/strategically_assessing_contractor_implementation_of_NIST_SP_800-171.html). In accordance with DFARS 252.204-7020, the SBC shall provide access to its facilities, systems, and personnel necessary for the Government to conduct a Medium or High NIST SP 800-171 DoD Assessment, as described in NIST SP 800-171 DoD Assessment Methodology, linked above. Notification of specific requirements for NIST SP 800-171 DoD assessments and assessment level will be provided as part of the component instructions, topic, or award.
  - aa. **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



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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). Full text of the provisions and clause and required offeror representations can be found in Attachment 1 of this BAA.

### 8.2 Agency Recovery Authority and Ongoing Reporting

In accordance with Section 5 of the SBIR and STTR Extension Act of 2022, the DoD will –

- 1) require a small business concern receiving an award under its SBIR program to repay all amounts received from the Federal agency under the award if—
  - (A) the small business concern makes a material misstatement that the Federal agency determines poses a risk to national security; or
  - (B) there is a change in ownership, change to entity structure, or other substantial change in circumstances of the small business concern that the Federal agency determines poses a risk to national security; and
- 2) require a small business concern receiving an award under its SBIR program to regularly report to the Federal agency and the Administration throughout the duration of the award on—
  - (A) any change to a disclosure required under subparagraphs (A) through (G) of section 4.3 above;
  - (B) any material misstatement made under section 8.2 paragraph (A) above; and
  - (C) any change described in section 8.2 paragraph (B) above.

### 8.3 Basic Safeguarding of Covered Contractor Information Systems

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

#### **FAR 52.204-21 Basic Safeguarding of Covered Contractor Information Systems (NOV 2021)**

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

- (1) *Covered contractor information system* means an information system that is owned or operated by a contractor that processes, stores, or transmits Federal contract information.
- (2) *Federal contract information* means information, not intended for public release, that is provided by or generated for the Government under a contract to develop or deliver a product or service to the Government, but not including information provided by the Government to the public (such as on public websites) or simple transactional information, such as necessary to process payments.
- (3) *Information* means any communication or representation of knowledge such as facts, data, or opinions, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual (Committee on National Security Systems Instruction (CNSSI) 4009).
- (4) *Information system* means a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information (44 U.S.C. 3502).
- (5) *Safeguarding* means measures or controls that are prescribed to protect information

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systems.

(b) Safeguarding requirements and procedures.

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

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

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

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

(End of clause)

### **8.4 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.

### **8.5 Copyrights**

With prior written permission of the Contracting Officer, 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 that each publication contain an appropriate acknowledgment and disclaimer statement.

### **8.6 Patents**

Small business concerns normally may retain the principal worldwide patent rights to any invention developed with Government support. The Government receives a royalty-free license for its use, reserves the right to require the patent holder to license others in certain limited circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically. To the extent authorized by 35 USC 205, the Government will not make public any information disclosing a Government-supported invention for a period of five years to allow the awardee to pursue a patent. See also Invention Reporting in Section 8.6.

### **8.7 Technical Data Rights**

Rights in technical data, including software, developed under the terms of any contract resulting from proposals submitted in response to this BAA generally remain with the contractor, except that the Government obtains a royalty-free license to use such technical data only for Government purposes during the period commencing with contract award and ending twenty years after completion of the project under which the data were generated. This data should be marked with the restrictive legend specified in DFARS 252.227-7018 Class Deviation 2020-O0007. Upon expiration of the twenty-year restrictive license, the Government has Government Purpose Rights in the STTR data. During the license period, the Government may not release or disclose STTR data to any person other than its support services contractors except: (1) For evaluation purposes; (2) As expressly permitted by the contractor; or (3) A use, release, or disclosure

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that is necessary for emergency repair or overhaul of items operated by the Government. See DFARS clause 252.227-7018 Class Deviation 2020-O0007 "Rights in Noncommercial Technical Data and Computer Software – Small Business Innovation Research (SBIR) Program." NOTE: Although Class Deviation 2020-O0007 only specifies applicability to SBIR, as required in the Small Business Act [15 USC 638 (p)(2)(B)(v)] and further prescribed by the SBA SBIR/STTR Policy Directive [section 8(b)(2)], this language also applies to STTR.

If a proposing small business concern plans to submit assertions in accordance with DFARS 252.227-7017, those assertions must be identified, and assertion of use, release, or disclosure restriction **MUST** be included with your proposal submission, at the end of the technical volume. The contract cannot be awarded until assertions have been approved.

### 8.8 Invention Reporting

STTR awardees must report inventions to the component within two months of the inventor's report to the awardee. The reporting of inventions may be accomplished by submitting paper documentation, including fax, or through the Edison Invention Reporting System at [www.iedison.gov](http://www.iedison.gov) for those agencies participating in iEdison.

### 8.9 Final Technical Reports - Phase I through Phase III

- a. **Content:** A final report is required for each project phase. The reports must contain in detail the project objectives, work performed, results obtained, and estimates of technical feasibility. A completed SF 298, "Report Documentation Page," will be used as the first page of the report. submission resources at <https://discover.dtic.mil/submit-documents/>. In addition, monthly status and progress reports may be required by the DoD Component.
- b. **SF 298 Form "Report Documentation Page" Preparation:**
  - (1) If desirable, language used by the company in its Phase II proposal to report Phase I progress may also be used in the final report.
  - (2) For each unclassified report, the company submitting the report should fill in Block 12 (Distribution/Availability Statement) of the SF 298, "Report Documentation Page," with the following statement: "Distribution authorized to U.S. Government only; Proprietary Information, (Date of Determination). Other requests for this document shall be referred to the Component SBIR/STTR Program Office."

*Note: Data developed under an STTR contract is subject to STTR Data Rights which allow for protection under DFARS 252.227-7018 (see Section 8.5, Technical Data Rights). The sponsoring DoD activity, after reviewing the company's entry in Block 12, has final responsibility for assigning a distribution statement.*

For additional information on distribution statements see the following Defense Technical Information Center (DTIC) Web site: [https://discover.dtic.mil/wp-content/uploads/2018/09/distribution\\_statements\\_and\\_reasonsSept2018.pdf](https://discover.dtic.mil/wp-content/uploads/2018/09/distribution_statements_and_reasonsSept2018.pdf)

- (3) Block 14 (Abstract) of the SF 298, "Report Documentation Page" must include as the first sentence, "Report developed under STTR contract for topic [insert BAA topic number. [Follow with the topic title, if possible.]" The abstract must identify the purpose of the

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work and briefly describe the work conducted, the findings or results and the potential applications of the effort. **Since the abstract will be published by the DoD, it must not contain any proprietary or classified data and type "UU" in Block 17.**

(4) Block 15 (Subject Terms) of the SF 298 must include the term "STTR Report".

- c. **Submission:** In accordance with DoD Directive 3200.12 and DFARS clause 252.235-7011, a copy of the final report shall be submitted (electronically or on disc) to:

Defense Technical Information Center  
ATTN: DTIC-OA (SBIR/STTR)  
8725 John J Kingman Road, Suite 0944  
Ft. Belvoir, VA 22060-6218

Delivery will normally be within 30 days after completion of the Phase I technical effort.

Other requirements regarding submission of reports and/or other deliverables will be defined in the Contract Data Requirements List (CDRL) of each contract.

Special instructions for the submission of CLASSIFIED reports will be defined in the delivery schedule of the contract. DO NOT E-MAIL Classified or controlled unclassified reports, or reports containing STTR Data Rights protected under DFARS 252.227-7018.

**AMENDMENT 2****APPENDIX A****DoD SBIR 23.D Annual BAA  
Topic Release Index**

Active topic releases and associated Component-specific instructions can be viewed at:

<https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/>.

<b>Component Release Number</b>	<b>Topic Number</b>	<b>Topic Title</b>	<b>Release Dates</b>
<a href="#"><u>DARPA R2</u></a>	HR0011ST2023D-02	Bistatic Engagement Algorithms and Methodologies (BEAM)	<b>Pre-release: August 17, 2023</b> <b>Open: August 31, 2023</b> <b>Close: October 3, 2023, 12:00 pm ET</b>
	HR0011ST2023D-03	Cyber Operations Preparedness (COP)	
<a href="#"><u>DTRA</u></a>	DTRA23D-P01	OPEN TOPIC: Replacing User Name/Password Defaults - Alternative User Authentication Methods	<b>Pre-release: August 23, 2023</b> <b>Open: September 20, 2023</b> <b>Close: October 18, 2023, 12:00 pm ET</b>

<b>Archived Topic Releases</b>			
<b>Component Release Number</b>	<b>Topic Number</b>	<b>Topic Title</b>	<b>Release Dates</b>
<a href="#"><u>DARPA R1</u></a>	HR0011ST2023D-01	High Efficiency X-ray (HEX) Production	<b>Pre-release: March 14, 2023</b> <b>Open: March 29, 2023</b> <b>Close: May 2, 2023, 12:00 pm ET</b>

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**ATTACHMENT 1**

**Department of Defense (DoD)  
Small Business Innovation Research (SBIR) Program  
Small Business Technology Transfer (STTR) Program**

**CONTRACTOR CERTIFICATION REGARDING  
PROVISION OF PROHIBITION ON CONTRACTING FOR CERTAIN  
TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR  
EQUIPMENT (DFARS SUBPART 204.21)**

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.*

DFARS PROVISIONS INCORPORATED IN FULL TEXT:

**252.204-7016 Covered Defense Telecommunications Equipment or Services—Representation**

**COVERED DEFENSE TELECOMMUNICATIONS EQUIPMENT OR SERVICES—  
REPRESENTATION (DEC 2019)**

(a) *Definitions.* As used in this provision, “covered defense telecommunications equipment or services” has the meaning provided in the clause [252.204-7018](#), Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services.

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

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

### **252.204-7017 Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services—Representation**

#### PROHIBITION ON THE ACQUISITION OF COVERED DEFENSE TELECOMMUNICATIONS EQUIPMENT OR SERVICES—REPRESENTATION (MAY 2021)

*The Offeror is not required to complete the representation in this provision if the Offeror has represented in the provision at 252.204-7016, Covered Defense Telecommunications Equipment or Services—Representation, that it “does not provide covered defense telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument.”*

(a) *Definitions.* “Covered defense telecommunications equipment or services,” “covered mission,” “critical technology,” and “substantial or essential component,” as used in this provision, have the meanings given in the [252.204-7018](#) clause, Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services, of this solicitation.

(b) *Prohibition.* Section 1656 of the National Defense Authorization Act for Fiscal Year 2018 (Pub. L. 115-91) prohibits agencies from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service to carry out covered missions that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c) *Procedures.* The Offeror shall review the list of excluded parties in the System for Award Management (SAM) at <https://www.sam.gov> for entities that are excluded when providing any equipment, system, or service to carry out covered missions that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless a waiver is granted.

*Representation.* If in its annual representations and certifications in SAM the Offeror has represented in paragraph (c) of the provision at [252.204-7016](#), Covered Defense Telecommunications Equipment or Services—Representation, that it “does” provide covered defense telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument, then the Offeror shall complete the following additional representation:

The Offeror represents that it  will  will not provide covered defense telecommunications equipment or services as a part of its offered products or services to DoD in the performance of any award resulting from this solicitation.

(e) *Disclosures.* If the Offeror has represented in paragraph (d) of this provision that it “will provide covered defense telecommunications equipment or services,” the Offeror shall provide the following information as part of the offer:



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(1) A description of all covered defense telecommunications equipment and services offered (include brand or manufacturer; product, such as model number, original equipment manufacturer (OEM) number, manufacturer part number, or wholesaler number; and item description, as applicable).

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

(3) For services, the entity providing the covered defense telecommunications services (include entity name, unique entity identifier, and Commercial and Government Entity (CAGE) code, if known).

(4) For equipment, the entity that produced or provided the covered defense telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known).

(End of provision)

### **252.204-7018 Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services**

#### PROHIBITION ON THE ACQUISITION OF COVERED DEFENSE TELECOMMUNICATIONS EQUIPMENT OR SERVICES (JAN 2021)

Definitions. As used in this clause—

“Covered defense telecommunications equipment or services” means—

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

(2) Telecommunications services provided by such entities or using such equipment; or

(3) Telecommunications equipment or services produced or provided by an entity that the Secretary of Defense reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

“Covered foreign country” means—

(1) The People’s Republic of China; or

(2) The Russian Federation.

“Covered missions” means—

(1) The nuclear deterrence mission of DoD, including with respect to nuclear command, control, and communications, integrated tactical warning and attack assessment, and continuity of Government; or

(2) The homeland defense mission of DoD, including with respect to ballistic missile defense.

## AMENDMENT 2

“Critical technology” means—

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

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

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

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

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

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

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

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

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

(b) *Prohibition.* In accordance with section 1656 of the National Defense Authorization Act for Fiscal Year 2018 (Pub. L. 115-91), the contractor shall not provide to the Government any equipment, system, or service to carry out covered missions that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless the covered defense telecommunication equipment or services are covered by a waiver described in Defense Federal Acquisition Regulation Supplement [204.2104](#).

(c) *Procedures.* The Contractor shall review the list of excluded parties in the System for Award Management (SAM) at <https://www.sam.gov> for entities that are excluded when providing any equipment, system, or service, to carry out covered missions, that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless a waiver is granted.

(d) *Reporting.*

(1) In the event the Contractor identifies covered defense telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of

## AMENDMENT 2

any system, during contract performance, the Contractor shall report at <https://dibnet.dod.mil> the information in paragraph (d)(2) of this clause.

(2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause:

(i) Within 3 business days from the date of such identification or notification: the contract number; the order number(s), if applicable; supplier name; brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii) Within 30 business days of submitting the information in paragraph (d)(2)(i) of this clause: any further available information about mitigation actions undertaken or recommended. In addition, the Contractor shall describe the efforts it undertook to prevent use or submission of a covered defense telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) *Subcontracts*. The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts and other contractual instruments, including subcontracts for the acquisition of commercial items.

(End of clause)

**AMENDMENT 2**

**ATTACHMENT 2**

**Department of Defense (DoD)  
Small Business Innovation Research (SBIR) Program  
Small Business Technology Transfer (STTR) Program**

**DISCLOSURES OF FOREIGN AFFILIATIONS OR  
RELATIONSHIPS TO FOREIGN COUNTRIES**

In accordance with the SBIR and STTR Extension Act of 2022 (Pub. L. 117-183) and the Small Business Administration (SBA) SBIR/STTR Policy Directive, small business concerns are required to disclose the information requested below about the small business’s investment and foreign ties.

Responses to disclosure questions may contain trade secrets or commercial or financial information that is privileged or confidential and is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with an award between the submitter and the Government.

Relevant definitions can be found at the end of this document. An up-to-date list of countries determined to be countries of concern by the Secretary of State will be maintained and accessible on SBIR.gov.

Small Business Concern (SBC)	
SBC Unique Entity ID (UEI)	
Proposal # (assigned by DSIP when proposal is created)	
SBC Point of Contact (POC) Name	
SBC POC Phone #	
SBC POC Email	

**The information provided in response to the Disclosure Questions listed below is certified to be accurate and complete.**

Name of person authorized to sign: \_\_\_\_\_

Signature of person authorized: \_\_\_\_\_

Date: \_\_\_\_\_

**AMENDMENT 2****Disclosure Questions**

1. Is any owner or covered individual of the applicant or awardee party to any malign foreign talent recruitment program?

- Yes                       No

If yes, disclose the first and last name of each owner or covered individual, identify their role (i.e., owner or covered individual), and the malign foreign talent recruitment program.

2. Is there a parent company, joint venture, or subsidiary, of the applicant or awardee that is based in or receives funding from, any foreign country of concern?

- Yes                       No

If yes, disclose the name, full address, applicant or awardee relationships (i.e., parent company, joint venture, or subsidiary) of each entity based in, or funded by, any foreign country of concern.

3. Does the applicant or awardee have any current or pending contractual or financial obligation or other agreement specific to a business arrangement, or joint venture-like arrangement with an enterprise owned by a foreign state or any foreign entity?

- Yes                       No

If yes, disclose the name of each enterprise or foreign entity, type of obligation, agreement, or arrangement ( *i.e.*, contractual, financial, or other), description of obligation, agreement, or arrangement, and the foreign state(s) and/or the country of the foreign entity (or entities).

4. Is the applicant or awardee wholly owned in a foreign country?

- Yes                       No

If yes, disclose the foreign country.

5. Does the applicant or awardee have any venture capital or institutional investment?

- Yes                       No

If yes, proceed to question 5a. If no, proceed to question 6.

**5a.** Does the investing entity have a general partner or any other individual holding a leadership role who has a foreign affiliation with any foreign country of concern?

- Yes                       No                       Unable to determine

## AMENDMENT 2

If yes or unable to determine, disclose the venture capital or institutional investing entity's name, the percentage of ownership obtained by the investing entity, and the type of investment (i.e., equity, debt, or combination of equity and debt).

6. During the previous 5-year period, did the applicant or awardee have any technology licensing or intellectual property sales or transfers, to a foreign country of concern?

Yes                       No

If yes, disclose the name, address, and country, of the institution or entity that licensed, purchased, or received the technology or intellectual property.

7. Is there any foreign business entity, offshore entity, or entity outside the United States related to the applicant or awardee?

Yes                       No

If yes, disclose the entity name, relationship type (i.e., foreign business entity, offshore entity, entity outside the United States), description of the relationship to the applicant or awardee, and entity address and country.

8. Does the applicant or awardee have an owner, officer, or covered individual that has a foreign affiliation with a research institution located in a foreign country of concern?

Yes                       No

If yes, disclose the first and last name of each owner, officer, or covered individual that has a foreign affiliation with a foreign country of concern, identify their role (i.e., owner, officer, or covered individual), and the name of the foreign research institution and the foreign country of concern where it is located.

### Relevant Definitions

*Covered individual* — An individual who contributes in a substantive, meaningful way to the scientific development or execution of a research and development (R&D) project proposed to be carried out with a Federally funded award from DoD. DoD has further designated covered individuals as including all proposed key personnel.

*Federally funded award* — A Phase I, Phase II (including Direct to Phase II, sequential Phase II/subsequent Phase II and cross-agency Phase II), or Phase III SBIR or STTR award made using a funding agreement.

*Foreign affiliation* — As defined in 15 U.S.C. § 638(e)(16), foreign affiliation means 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

## AMENDMENT 2

honorary). This includes appointments or positions deemed adjunct, visiting, or honorary with research institutions located in a foreign country of concern.

*Foreign country of concern* — As defined in 15 U.S.C. § 638(e)(17), foreign country of concern means 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.

*Malign foreign talent recruitment program* — As defined in 42 U.S.C § 19237, the term “malign foreign talent recruitment program” means-

- (C) 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-
  - (x) 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;
  - (xi) being required to recruit trainees or researchers to enroll in such program, position, or activity;
  - (xii) 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;
  - (xiii) being unable to terminate the foreign talent recruitment program contract or agreement except in extraordinary circumstances;
  - (xiv) 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;
  - (xv) 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;
  - (xvi) 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;
  - (xvii) 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
  - (xviii) having a conflict of interest or conflict of commitment contrary to the standard terms and conditions of the Federal research and development award; and
- (D) a program that is sponsored by-
  - (iv) 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;
  - (v) an academic institution on the list developed under section 1286(c)(8) of the John S. McCain

## **AMENDMENT 2**

- National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. 2358 note; 1 Public Law 115–232) ; or
- (vi) 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; 1 Public Law 115–232).



**AMENDMENT 2**

**ATTACHMENT 3**

**Department of Defense (DoD)  
Small Business Innovation Research (SBIR) Program  
Small Business Technology Transfer (STTR) Program**

**Verification of Eligibility of Small Business Joint Ventures**

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

Contractor's Name	
Small Business Concern Name	
Office Tel #	
Mobile #	
Email	

Name of person authorized to sign: \_\_\_\_\_

Signature of person authorized: \_\_\_\_\_

Date: \_\_\_\_\_

FAR Provision Incorporated in Full Text:

**52.219-1 Small Business Program Representations (Oct 2022)**

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

*Economically disadvantaged women-owned small business (EDWOSB) concern* means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management

## AMENDMENT 2

and daily business operations of which are controlled by, one or more women who are citizens of the United States and who are economically disadvantaged in accordance with [13 CFR part 127](#), and the concern is certified by SBA or an approved third-party certifier in accordance with [13 CFR 127.300](#). It automatically qualifies as a women-owned small business concern eligible under the WOSB Program.

### *Service-disabled veteran-owned small business concern-*

(1) Means a small business concern-

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) "Service-disabled veteran" means a veteran, as defined in [38 U.S.C.101\(2\)](#), with a disability that is service-connected, as defined in [38 U.S.C.101\(16\)](#).

### *Small business concern—*

(1) Means a concern, including its affiliates, that is independently owned and operated, not dominant in its field of operation, and qualified as a small business under the criteria in [13 CFR part 121](#) and the size standard in paragraph (b) of this provision.

(2) *Affiliates*, as used in this definition, means business concerns, one of whom directly or indirectly controls or has the power to control the others, or a third party or parties control or have the power to control the others. In determining whether affiliation exists, consideration is given to all appropriate factors including common ownership, common management, and contractual relationships. SBA determines affiliation based on the factors set forth at 13 CFR 121.103.

*Small disadvantaged business concern*, consistent with 13 CFR 124.1002, means a small business concern under the size standard applicable to the acquisition, that-

(1) Is at least 51 percent unconditionally and directly owned (as defined at 13 CFR 124.105) by-

(i) One or more socially disadvantaged (as defined at 13 CFR 124.103) and economically disadvantaged (as defined at 13 CFR 124.104) individuals who are citizens of the United States, and

(ii) Each individual claiming economic disadvantage has a net worth not exceeding \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(2) The management and daily business operations of which are controlled (as defined at 13 CFR 124.106) by individuals who meet the criteria in paragraphs (1)(i) and (ii) of this definition.

*Veteran-owned small business concern* means a small business concern-

## AMENDMENT 2

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at [38 U.S.C.101\(2\)](#)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

*Women-owned small business concern* means a small business concern-

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

*Women-owned small business (WOSB) concern eligible under the WOSB Program* (in accordance with [13 CFR part 127](#)) means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States, and the concern is certified by SBA or an approved third-party certifier in accordance with [13 CFR 127.300](#).

(b) (1) The North American Industry Classification System (NAICS) code for this acquisition is \_\_\_\_\_ [*insert NAICS code*].

(2) The small business size standard is \_\_\_\_\_ [*insert size standard*].

(3) The small business size standard for a concern that submits an offer, other than on a construction or service acquisition, but proposes to furnish an end item that it did not itself manufacture, process, or produce (*i.e.*, nonmanufacturer), is 500 employees if the acquisition—

(i) Is set aside for small business and has a value above the simplified acquisition threshold;

(ii) Uses the HUBZone price evaluation preference regardless of dollar value, unless the offeror waives the price evaluation preference; or

(iii) Is an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.

(c) *Representations.*

(1) The offeror represents as part of its offer that—

(i) it  is,  is not a small business concern; or

(ii) It  is,  is not a small business joint venture that complies with the requirements of [13 CFR 121.103\(h\)](#) and [13 CFR 125.8\(a\)](#) and (b). [*The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_.*]

## AMENDMENT 2

(2) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents that it  is,  is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents as part of its offer that it  is,  is not a women-owned small business concern.

(4) *Women-owned small business (WOSB) joint venture eligible under the WOSB Program.* The offeror represents as part of its offer that it  is,  is not a joint venture that complies with the requirements of [13 CFR 127.506\(a\)](#) through [\(c\)](#). *[The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_.]*

(5) *Economically disadvantaged women-owned small business (EDWOSB) joint venture.* The offeror represents as part of its offer that it  is,  is not a joint venture that complies with the requirements of 13 CFR 127.506(a) through (c). *[The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_.]*

(6) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents as part of its offer that it  is,  is not a veteran-owned small business concern.

(7) *[Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(6) of this provision.]* The offeror represents as part of its offer that

(i) It  is,  is not a service-disabled veteran-owned small business concern; or

(ii) It  is,  is not a service-disabled veteran-owned joint venture that complies with the requirements of [13 CFR 125.18\(b\)\(1\)](#) and [\(2\)](#). *[The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_.]* Each service-disabled veteran-owned small business concern participating in the joint venture shall provide representation of its service-disabled veteran-owned small business concern status.

(8) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents, as part of its offer, that-

(i) It  is,  is not a HUBZone small business concern listed, on the date of this representation, as having been certified by SBA as a HUBZone small business concern in the Dynamic Small Business Search and SAM, and will attempt to maintain an employment rate of HUBZone residents of 35 percent of its employees during performance of a HUBZone contract (see [13 CFR 126.200\(e\)\(1\)](#)); and

(ii) It  is,  is not a HUBZone joint venture that complies with the requirements of [13 CFR 126.616\(a\)](#) through [\(c\)](#). *[The offeror shall enter the name and unique entity identifier of each party to the joint venture: \_\_.]* Each HUBZone small business concern participating in the HUBZone joint venture shall provide representation of its HUBZone status.

## AMENDMENT 2

(d) *Notice.* Under [15 U.S.C.645\(d\)](#), any person who misrepresents a firm's status as a business concern that is small, HUBZone small, small disadvantaged, service-disabled veteran-owned small, economically disadvantaged women-owned small, or women-owned small eligible under the WOSB Program in order to obtain a contract to be awarded under the preference programs established pursuant to section 8, 9, 15, 31, and 36 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall-

- (1) Be punished by imposition of fine, imprisonment, or both;
- (2) Be subject to administrative remedies, including suspension and debarment; and
- (3) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

**AMENDMENT 2**

**Attachment 4**

**Department of Defense (DoD)  
Small Business Innovation Research (SBIR) Program  
Small Business Technology Transfer (STTR) Program**

**DISCLOSURE OF FUNDING SOURCES**

In accordance with Section 223 of the William M. (Mac) Thornberry National Defense Authorization Act (NDAA) for Fiscal Year 2021, DoD shall require, as part of any application for a research and development award—

- (1) that each covered individual listed on the application—
  - (A) disclose the amount, type, and source of all current and pending research support received by, or expected to be received by, the individual as of the time of the disclosure;
  - (B) certify that the disclosure is current, accurate, and complete; and
  - (C) agree to update such disclosure at the request of the agency prior to the award of support and at any subsequent time the agency determines appropriate during the term of the award; and
- (2) that any entity applying for such award certify that each covered individual who is employed by the entity and listed on the application has been made aware of the requirements under paragraph (1).

Full text of Section 223 of the FY21 NDAA, including relevant definitions, can be found on pages 84-86: <https://www.congress.gov/116/plaws/publ283/PLAW-116publ283.pdf>.

Small Business Concern (SBC)	
SBC Unique Entity ID (UEI)	
Proposal # (assigned by DSIP when proposal is created)	
SBC Point of Contact (POC) Name	
SBC POC Phone #	
SBC POC Email	

The SBC has been made aware of the requirements outlined in Section 223(a) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 and certifies that the disclosures provided below are current, accurate, and complete. The SBC further agrees to update such disclosure at the request of DoD prior to the award of support and at any subsequent time DoD determines appropriate during the term of the award.

Name of person authorized to sign: \_\_\_\_\_

Signature of person authorized: \_\_\_\_\_

Date: \_\_\_\_\_

## AMENDMENT 2

Covered individuals have no current or pending research support to disclose in accordance with Section 223 of the FY21 NDAA, as described above.

### **Disclosures**

Covered Individual's Name: Covered Individual's Position: Current and Pending Funding Amount: Current and Pending Funding Type: Current and Pending Funding Source:	
Covered Individual's Name: Covered Individual's Position: Current and Pending Funding Amount: Current and Pending Funding Type: Current and Pending Funding Source:	
Covered Individual's Name: Covered Individual's Position: Current and Pending Funding Amount: Current and Pending Funding Type: Current and Pending Funding Source:	
Covered Individual's Name: Covered Individual's Position: Current and Pending Funding Amount: Current and Pending Funding Type: Current and Pending Funding Source:	
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**AMENDMENT 2**

[Additional space as needed]



**Defense Advanced Research Projects Agency (DARPA)  
DoD 23.D Small Business Technology Transfer (STTR) Annual BAA  
Proposal Submission Instructions Release 1**

**INTRODUCTION**

To achieve DARPA’s mission to create technological surprise, the agency makes strategic, early investments in science and technology that will have long-term positive impacts on our national security. The pace of discovery in both science and technology is accelerating worldwide, resulting in new fields of study and the identification of scientific areas ripe for small business utilization through the SBIR and STTR programs. Small businesses are critical for developing technology to support national security. Proposers are encouraged to consider whether the R/R&D being proposed to DoD Components also has private sector potential, either for the proposed application or as a base for other applications. The topics below focus on technical domains important to DARPA’s mission pursuing innovative research concepts that fall within one of its technology offices. More information about DARPA’s technical domains and research topics of interest may be found at: <http://www.darpa.mil/about-us/offices>.

Proposers responding to a topic in this BAA must follow all general instructions provided in the Department of Defense (DoD) STTR Program BAA. DARPA requirements in addition to or deviating from the DoD Program BAA are provided in the instructions below.

Specific questions pertaining to the administration of the DARPA Program and these proposal preparation instructions should be directed to: DARPA Small Business Programs Office at [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil). DSIP Topic Q&A will NOT be available for these DARPA topics. Technical questions related to improving the understanding of a topic’s requirements must be submitted to [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil) by the deadline listed below.

The following dates apply to this DARPA Topic release:

- March 14, 2023:** Topics issued for pre-release
- March 29, 2023:** Topics open; DARPA begins accepting proposals via DSIP
- April 25, 2023:** Deadline for technical question submission
- May 02, 2023:** Deadline for receipt of proposals no later than **12:00 pm ET**

**PHASE I PROPOSAL GUIDELINES**

The Defense SBIR/STTR Innovation Portal (DSIP) is the official portal for DoD SBIR/STTR proposal submission. Proposers are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Detailed instructions regarding registration and proposal submission via DSIP are provided in Appendix A.

**Current Release Award Structure by Topic**

Topic Number	Phase I		
	Technical Volume	Award Amount	Period of Performance (PoP)
HR0011ST2023D-01	25 pages	\$275,000	8 months

**Technical Volume (Volume 2)**

The technical volume is not to exceed 20 pages and must follow the formatting requirements provided in the DoD STTR 2023.D Program BAA. Phase I commercialization strategy shall not exceed 5 pages. This should be the last section of the Technical Volume and will not count against the 20-page limit.

**Content of the Technical Volume**

Proposers should refer to the DARPA Phase I Proposal Instructions, provided on the DARPA Small Business site (<https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>).

**Cost Volume (Volume 3)**

Please see the chart above for award amounts listed by topic. Proposers are required to use the Phase I – Volume 3: Cost Proposal Template (Excel Spreadsheet) provided on the DARPA Small Business site (<https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>). Subcontractors may also submit unsanitized costs using this template directly to DARPA at [SBIR-BAA@darpa.mil](mailto:SBIR-BAA@darpa.mil).

Please review the updated Percentage of Work (POW) calculation details included in the DoD Program BAA. DARPA cannot accept deviations from the POW requirements for STTR proposals.

**Company Commercialization Report (CCR) (Volume 4)**

Completion of the CCR as Volume 4 of the proposal submission in DSIP is required. Please refer to the DoD STTR Program BAA for full details on this requirement. Information contained in the CCR will not be considered by DARPA during proposal evaluations.

**Supporting Documents (Volume 5)**

In addition to the documents required by DoD, small businesses may also submit additional documentation to support the Technical Volume (Volume 2) and the Cost Volume (Volume 3) in Volume 5.

**PHASE II PROPOSAL GUIDELINES**

Phase II proposals may only be submitted by Phase I awardees. Should DARPA have funding available and decide to proceed with a Phase II, proposers awarded a Phase I contract will be eligible to submit a proposal for Phase II and will be contacted by the DARPA Small Business Programs Office at the appropriate time during their Phase I period of performance. Phase II proposals will be evaluated in accordance with the applicable DoD or DARPA SBIR/STTR BAA. Phase II selection(s) are at the sole discretion of the government and are subject to funding availability and Phase I performance. Phase II Instructions are available at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>.

Topic Number	Phase II				
	Tech Volume	Award Amount	Period of Performance (PoP)	Option Amount	Option PoP
HR0011ST2023D-01	45 pages	\$1,800,000	18 months	\$500,000	6 months

**DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TAB A)**

DARPA does not offer TAB A funding.

## **EVALUATION AND SELECTION**

All proposals will be evaluated in accordance with the evaluation criteria listed in the DoD STTR 2023.D BAA. DARPA will conduct an evaluation of each conforming proposal. Proposals that do not comply with the requirements detailed in this BAA and the research objective(s) of the corresponding topic are considered non-conforming and therefore are not evaluated nor considered for award.

Using the evaluation criteria, the Government will evaluate each proposal in its entirety, documenting the strengths and weaknesses relative to each evaluation criterion, and, based on these identified strengths and weaknesses, determine the proposal's overall selectability. Proposals will not be evaluated against each other during the evaluation process, but rather evaluated on their own individual merit to determine how well the proposal meets the criteria stated in this BAA and the corresponding topic.

Awards will be made to proposers whose proposals are determined to be the most advantageous to the Government, consistent with instructions and evaluation criteria specified in the DoD STTR 2023.D BAA and availability of funding. Given the limited funding available for each topic released, not all proposals considered selectable will be necessarily selected for funding.

For the purposes of this proposal evaluation process, a selectable proposal is defined as follows:

Selectable: A selectable proposal is a proposal that has been evaluated by the Government against the evaluation criteria listed in the BAA and topic, and the strengths of the overall proposal outweighs its weaknesses. Additionally, there are no accumulated weaknesses that would require extensive negotiations and/or a resubmitted proposal.

For the purposes of this proposal evaluation process, a non-selectable proposal is defined as follows:

Non-Selectable: A proposal is considered non-selectable when the proposal has been evaluated by the Government against the evaluation criteria listed in the BAA and topic, and the strengths of the overall proposal do not outweigh its weaknesses.

Proposing firms will be notified of selection or non-selection status for a Phase I award within 90 days of the closing date of the BAA. It is the policy of DARPA to treat all proposals as source selection information and to disclose their contents only for the purpose of evaluation. Restrictive notices notwithstanding, during the evaluation process, submissions may be handled by support contractors for administrative purposes and/or to assist with technical evaluation. All DARPA support contractors are expressly prohibited from performing DARPA-sponsored technical research and are bound by appropriate nondisclosure agreements. Input on technical aspects of the proposals may be solicited by DARPA from other Government and/or non-Government consultants/experts who are strictly bound by the appropriate non-disclosure requirements. No submissions will be returned. Upon completion of the evaluation and selection process, an electronic copy of each proposal received will be retained at DARPA.

Proposal titles, abstracts, anticipated benefits, and keywords of proposals that are selected for contract award will undergo a DARPA Policy and Security Review. Proposal titles, abstracts, anticipated benefits, and keywords are subject to revision and/or redaction by DARPA. Final approved versions of proposal titles, abstracts, anticipated benefits, and keywords may appear on the DoD SBIR/STTR awards website and/or the SBA's SBIR/STTR award website (<https://www.sbir.gov/sbirsearch/award/all>).

Refer to the DoD STTR 2023.D Program BAA for procedures to protest the Announcement.

As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests regarding the selection decision should be submitted to:

DARPA  
Contracts Management Office (CMO)  
675 N. Randolph Street  
Arlington, VA 22203  
E-mail: [scott.ulrey@darpa.mil](mailto:scott.ulrey@darpa.mil) and [sbir@darpa.mil](mailto:sbir@darpa.mil)

## **AWARD AND CONTRACT INFORMATION**

### **1. General Award Information**

Multiple awards are anticipated. DARPA may award FAR-based government contracts (Firm- Fixed Price or Cost-Plus Reimbursement) or Other Transactions for Prototypes agreement (under the authority of 10 U.S.C. § 4022) subject to approval of the Contracting Officer. The amount of resources made available under each topic issued under this BAA will depend on the quality of the proposals received and the availability of funds.

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this announcement and to make awards with or without communications with proposers. Additionally, the Government reserves the right to award all, some, one, or none of the options on the contract(s)/agreement(s) of the performers based on available funding and technical performance. If warranted, portions of resulting awards may be segregated into pre-priced options. Additionally, DARPA reserves the right to accept proposals in their entirety or to select only portions of proposals for award. In the event that DARPA desires to award only portions of a proposal, negotiations may be opened with that proposer. The Government reserves the right to fund proposals in phases with options for continued work, as applicable.

The Government reserves the right to request any additional, necessary documentation once it makes the award instrument determination. The Government reserves the right to remove a proposal from award consideration should the parties fail to reach agreement on award terms, conditions, and price within a reasonable time, and/or the proposer fails to provide requested additional information within three business days.

In all cases, the Government Contracting Officer reserves the right to select award instrument type, regardless of instrument type proposed, and to negotiate all instrument terms and conditions with selectees. DARPA will apply publication or other restrictions, as necessary, if it determines that the research resulting from the proposed effort will present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results on the program. For more information on publication restrictions, see the DoD STTR 2023.D Program BAA.

Because of the desire to streamline the award negotiation and program execution process, proposals identified for negotiation will result in negotiating a type of instrument for award that is in the best interest of the Government. In the case of an OT for Prototype agreement under DARPA's authority to award OTs for prototype projects, 10 U.S.C. § 4022, use of an OT provides significant opportunities for flexible execution to assist in meeting DARPA's aggressive SBIR/STTR program goals.

All proposers that wish to consider an OT award should carefully read the following:

The flexibility of the OT award instrument is beneficial to the program because the Performer will be able to apply its best practices as required to carry out the research project that may be outside of the Federal Acquisition Regulation (FAR) process-driven requirements. Streamlined practices will be used, such as milestone-driven performance, intended to reduce time and effort on award administration tasks and permit performers to focus on the research effort and rapid prototyping. Because of this ability, OTs provide the Agreements Officer the flexibility to create an award instrument that contains terms and conditions that promote commercial transition, reduce some administratively burdensome acquisition regulations, and meet SBIR/STTR program goals.

Proposers must only propose an OT agreement with fixed payable milestones. Fixed payable milestones are fixed payments based on successful completion of the milestone accomplishments agreed to in the milestone plan. Refer to the Other Transactions for Prototypes Fact Sheet and Other Transaction for Prototype Agreement, available at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>. Specific milestones will be based upon the research objectives detailed in the SBO.

Please see <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program> for more information on OTs.

## **2. Transition and Commercialization Support Program (TCSP)**

DARPA will provide services to Phase II or DP2 awardees upon contract execution through the Transition and Commercialization Support Program (TCSP) at no cost to awardees. The TCSP goal is to maximize the potential for SBIR/STTR companies to move their technology beyond Phase II and into other research and development programs for further maturity or into solutions or products for DoD acquisition programs, other Federal programs, and/or the commercial market. Please visit <https://www.darpa.mil/work-with-us/for-small-businesses/commercialization-continued> for more information on DARPA TCSP.

## **3. Embedded Entrepreneurship Initiative**

Awardees of SBIR funding pursuant to this BAA may be eligible to participate in the DARPA Embedded Entrepreneurship Initiative (EEI) during the Period of Performance. Invitation to participate in EEI is at the sole discretion of the Government based on evaluation of technical and commercial factors and subject to program balance and the availability of funding. EEI is a limited scope program offered by DARPA, at DARPA's discretion, to a small subset of awardees. The goal of DARPA's EEI is to increase the likelihood that DARPA-funded technologies take root in the U.S. and provide new capabilities for national defense. EEI supports DARPA's mission "to make pivotal investments in breakthrough technologies and capabilities for national security" by accelerating the transition of innovations out of the lab and into new capabilities for the Department of Defense (DoD). EEI investment supports development of a robust and deliberate Go-to-Market strategy for selling technology product to the government and commercial markets and positions DARPA awardees to attract U.S. investment. The following is for informational and planning purposes only and does not constitute solicitation of proposals to the EEI.

There are three elements to DARPA's EEI: (1) A Senior Commercialization Advisor (SCA) from DARPA who works with the Program Manager (PM) to examine the business case for the awardee's technology and uses commercial methodologies to identify steps toward achieving a successful transition of technology to the government and commercial markets; (2) Connections to potential industry and investor partners via EEI's Investor Working Groups; and (3) Additional funding on an awardee's contract for the awardee to hire an embedded entrepreneur to achieve specific milestones in a Go-to-Market strategy for transitioning the technology to products that serve both defense and commercial markets. This embedded entrepreneur's qualifications should include business experience within the target industries of interest, experience in commercializing early stage technology, and the ability to communicate and interact with technical and non-technical stakeholders. Funding for EEI is typically no

more than \$250,000 per awardee over the duration of the award. An awardee may apportion EEI funding to hire more than one embedded entrepreneur, if achieving the milestones requires different expertise that can be obtained without exceeding the awardee's total EEI funding. The EEI effort is intended to be conducted concurrent with the research program without extending the period of performance.

#### *EEI Application Process:*

After receiving an award under the solicitation, awardees interested in being considered for EEI should notify their DARPA Program Manager (PM) during the period of performance. Timing of such notification should ideally allow sufficient time for DARPA and the awardee to review the awardee's initial transition plan, identify milestones to achieve under EEI, modify the award, and conduct the work required to achieve such milestones within the original award period of performance. These steps may take 9-18 months to complete, depending on the technology. If the DARPA PM determines that EEI could be of benefit to transition the technology to product(s) the Government needs, the PM will refer the performer to DARPA Commercial Strategy.

DARPA Commercial Strategy will then contact the performer, assess fitness for EEI, and in consultation with the DARPA technical office, determine whether to invite the performer to participate in the EEI. Factors that are considered in determining fitness for EEI include DoD/Government need for the technology; competitive approaches to enable a similar capability or product; risks and impact of the Government's being unable to access the technology from a sustainable source; Government and commercial markets for the technology; cost and affordability; manufacturability and scalability; supply chain requirements and barriers; regulatory requirements and timelines; Intellectual Property and Government Use Rights, and available funding.

Invitation to participate in EEI is at the sole discretion of DARPA and subject to program balance and the availability of funding. EEI participants' awards may be subsequently modified bilaterally to amend the Statement of Work to add negotiated EEI tasks, provide funding, and specify a milestone schedule which will include measurable steps necessary to build, refine, and execute a Go-to-Market technology transition plan aimed at delivering new capabilities for national defense. Milestone examples are available at: <https://www.darpa.mil/work-with-us/contract-management>.

Awardees under this solicitation are eligible to be considered for participation in EEI, but selection for award under this solicitation does not imply or guarantee participation in EEI.

For more information please refer to the EEI website <https://eei.darpa.mil/>.

#### **4. DARPA Toolbox Initiative**

DARPA Toolbox is an Agency-wide effort to provide open licensing opportunities with commercial technology vendors to the researchers behind DARPA programs. DARPA Toolbox provides easy, low-cost, scalable access to state-of-the-art tools and intellectual property (IP) under predictable legal terms and streamlined acquisition procedures. The goal is to reduce performer reliance on low-quality, low-cost tools and IP that increase execution risks and complicate post-DARPA transitions.

Through this initiative, DARPA performers are granted access to select vendor tools and technologies throughout the life of their contractual relationship with the Agency. The Toolbox suppliers bring to the table proven technologies commonly used in state-of-the-art commercial microelectronics or system design methodologies.

DARPA Toolbox program information and a full list of participating suppliers can be found at <https://www.darpa.mil/work-with-us/darpa-toolbox-initiative>. If there are tool or technologies of interest,

contact the Supplier POC listed for the product, referencing the DARPA Toolbox Initiative. The Supplier POC will provide advice on products and pricing information. Include any non-production pricing quotes in your proposal. Products and pricing are between you and the suppliers – *do not* contact DARPA directly.

#### **ADDITIONAL INFORMATION**

DARPA intends to use electronic mail for all correspondence regarding these topics. Questions related to the technical aspect of the research objectives and awards specifically related to a topic should be emailed to [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil). Please reference the topic number in the subject line. All questions must be in English and must include the name, email address, and the telephone number of a point of contact.

DARPA will attempt to answer questions in a timely manner; however, questions submitted within seven (7) calendar days of the proposal due date listed herein may not be answered. DARPA will post a consolidated Frequently Asked Questions (FAQ) document. To access the posting please visit: <http://www.darpa.mil/work-with-us/opportunities>. Under the topic number summary, there will be a link to the FAQ. The FAQ will be updated on an ongoing basis until one week prior to the proposal due date.

Technical support for the Defense SBIR/STTR Innovation Portal (DSIP) is available Monday through Friday, 9:00 a.m. – 5:00 p.m. ET. Requests for technical support must be emailed to [DoDSBIRSupport@reisystems.com](mailto:DoDSBIRSupport@reisystems.com) with a copy to [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil).

DARPA STTR 23.D Topic Index  
Release 1

HR0011ST2023D-01

High Efficiency X-ray (HEX) Production



HR0011ST2023D-01 TITLE: High Efficiency X-ray (HEX) Production

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Weapons

OBJECTIVE: Design and develop high efficiency targets for the conversion of electrons to x-rays with performance beyond that of typical high atomic number bremsstrahlung converters.

DESCRIPTION: This topic area will explore new materials and physics for higher efficiency electron to x-ray conversion. High energy electrons, up to 10 MeV, can be produced for irradiation applications, but have limited penetration (~several centimeters) or are deleterious to the organoleptic characteristics of some types of food, such as meat proteins. High energy x-rays up to 7.5 MeV have improved penetration and do not change the desired organoleptic characteristics. However, the conversion of electrons to x-rays is an inefficient process, with conversion efficiencies of  $< \sim 10\%$ . Slowing electrons down through the bremsstrahlung process is typically used to create x-rays from an electron beam striking a high atomic number target (such as tungsten or tantalum). This STTR will focus on the use of advanced materials and new approaches to more efficiently convert electrons to photons and demonstrate performance in a food irradiation application. Approaches could include nanostructure engineered crystalline targets making use of electron and x-ray diffraction, nano-channel targets, energy recycling, or direct beam-wave interactions. Advances could make a significant impact for many applications beyond food irradiation such as medical device sterilization and non-destructive test and evaluation.

PHASE I: Phase I will demonstrate feasibility of high efficiency electron to x-ray conversion through modeling and preliminary experiments. Specifically, efficient conversion of x-rays is sought at 5 MeV to 7.5 MeV energies corresponding to upper regulatory limits for food irradiation applications. Successful performers will achieve a minimum of  $> 20\%$  conversion efficiency, and work to reach the objective performance goal of  $> 50\%$  conversion efficiency. Such efficiencies would substantially advance the state of the art and potentially allow for lower cost systems with lower size, weight, and power for a range of applications. Beam forming is a secondary goal of the program, with interest in pencil or fan-beams. Phase I will also include preliminary manufacturability studies and economic analysis activities indicating the suitability of the approach for cost-sensitive applications such as food irradiation.

Schedule/Milestones/Deliverables Phase I fixed milestones for this program must include:

- Month 1: Initial report detailing proposed conversion system supported with preliminary modeling and empirical data, including anticipated x-ray energy distributions
  - Month 3: Report on the conversion system's likelihood of achieving program efficiency goals, supported by experimental, simulated or modeled data
  - Month 5: Interim report describing efficiency performance, manufacturability, and cost of proposed target system
  - Month 7: Update to interim report: Given this report needs to support the Phase II proposal, it should provide compelling evidence the conversion system can achieve overall program efficiency (threshold 20%, objective 50%) and suitability goals (operation in high energy, high current environments)
  - Month 8: Final Phase I report summarizing technical approach and status in achieving Phase I goals and plans to achieve program goals by the end of Phase II; this should be a culmination of the Phase I effort, demonstrating a viable technical path supported by empirical and modeling data to achieving overall program goals, with risks and mitigation strategies fully detailed
- Monthly written technical progress reports (see template under SBIR/STTR BAA DOCUMENTS at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-str-program>)

All proposals must include the following meetings in the proposed schedule and costs:

- Virtual kickoff for Phase I
- Regular monthly teleconference meetings with the Government team for progress reporting as well as problem identification and mitigation; proposers typically prepare a slide deck to aid in the discussion

PHASE II: Phase II will further develop and refine proof-of-concept conversion systems, culminating with the demonstration of performance goals under high current conditions. Phase II will evaluate conversion systems under realistic conditions for food treatment with continuous beam powers ranging from 2 kW to 10 kW. The conversion systems will demonstrate maintaining x-ray production efficiency goals while addressing practical engineering issues such as mechanical stress and thermal management. Proposers should outline specific metrics and conditions for test that align with their commercialization strategy. The Phase II option will develop a strategy to integrate the conversion system with the DARPA SBIR Safe Food for Everyone (SaFE) program electron accelerator. Additionally, the option period will explore producing usable quantities of the optimized conversion systems with low-cost techniques, support demonstrations meeting program goals, and define a minimum viable product for food irradiation applications.

Schedule/Milestones/Deliverables. Phase II fixed milestones for this program must include:

- Month 1: Phase II Kickoff. Slide deck summarizing technical approach to meet overall goals, risks, and risk mitigations and quantified milestone schedule
- Month 6: Preliminary Design Review
- Month 9: Conversion system characterization: Report characterizing the performance of the conversion system, including efficiency and preliminary thermal handling and mechanical properties
- Month 12: Critical Design Review. Report capturing the final conversion system that when realized credibly achieves overall performance and suitability goals
- Month 15: Integration Report: Report describing results integrating the conversion system into electron accelerators and results supporting demonstrations of interest
- Month 18: Final Report: End of base period report that summarizes performance and suitability and results of initial practical demonstrations

Option Schedule/Milestones/Deliverables

- Month 21: Option Period Performance Report: Updated performance results, manufacturing studies, cost analysis, market analysis, and design refinements supporting a minimum viable product
- Month 24: Final Phase II Report. Summary of overall performance, testing, production, and demonstrations meeting program goals and full definition of minimum viable product; delivery of conversion system to SaFE performers.

Monthly written technical progress reports (see template under SBIR/STTR BAA DOCUMENTS at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>)

PHASE III DUAL USE APPLICATIONS: The resultant conversion system could be commercialized as a component technology during Phase III by working with various commercial vendors of high-power accelerator systems to provide an improved converter for food irradiation applications. Alternately, x-ray systems have broad applications such as medical, inspection, and security industries where such a converter could offer significant value. Market analysis, economic analysis, and minimum viable product definition could be undertaken for these and other applications.

REFERENCES:

1. Technology Perspectives Factual Document for the Basic Research Needs Workshop on Compact Accelerators for Security and Medicine, DoE Office of Science, May 2019
2. Basic Research Needs Workshop on Compact Accelerators for Security and Medicine Tools for the 21st Century, May 6-8, 2019

**KEYWORDS:** Food irradiation, cold pasteurization, medical sterilization, x-rays, linear accelerators, radiation dose

# Appendix A: DARPA PHASE I PROPOSAL INSTRUCTIONS

## I. Introduction

A complete proposal submission consists of:

- Volume 1: Proposal Cover Sheet
- Volume 2: Technical Volume
- Volume 3: Cost Volume
- Volume 4: Company Commercialization Report
- Volume 5: Supporting Documents
- Volume 6: Fraud, Waste and Abuse Training

The Defense SBIR/STTR Innovation Portal (DSIP) provides a structure for building the proposal volumes and submitting a consolidated proposal package. If this is your first time submitting an SBIR or STTR proposal using DSIP, please review detailed training guides at <https://www.dodsbirsttr.mil/submissions/learning-support/training-materials>. It is the responsibility of the proposing firm to ensure that a complete proposal package is certified and submitted by the close date listed in the TOPIC to which they are responding.

To assist in proposal development, templates for Volume 2: Technical Volume and Volume 3: Cost Volume have been provided as attachments on the DARPA Small Business website, under SBIR/STTR Forms and Templates at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>. Use of the DARPA Cost Proposal template is mandatory.

## II. Proprietary Information

Proposers that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall follow instructions in the DoD STTR 2023.D BAA regarding marking propriety proposal information.

## III. Phase I Proposal Instructions

### a. Proposal Cover Sheet (Volume 1)

The Cover Sheet must include a brief technical abstract of no more than 3000 characters that describes the proposed R&D project with a discussion of anticipated benefits and potential commercial applications. **Do not include proprietary or classified information in the Proposal Cover Sheet.** If your proposal is selected for award, the technical abstract and discussion of anticipated benefits may be publicly released.

### b. Format of Technical Volume (Volume 2)

1. 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.**
2. Length: The Phase I technical volume should consist of a 20-page technical proposal

and a 5-page commercialization plan. The Government will not consider pages in excess of the page count limitations.

3. **Layout:** Number all pages of your proposal consecutively. Font size should not be smaller than 10-point on standard 8-1/2" x 11" paper with one-inch margins. The header on each page of the Technical Volume should contain your company name, topic number, and proposal number assigned by DSIP when the Cover Sheet was created. The header may be included in the one-inch margin. Please refer to the document titled Phase I Template – Volume 2: Technical Volume at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program> for additional details.

**c. Content of the Technical Volume (Volume 2)**

The Technical Volume should cover the following items in the order given below:

1. **Identification and Significance of the Problem or Opportunity.** Define the specific technical problem or opportunity addressed and its importance.
2. **Phase I Technical Objectives.** Enumerate the specific objectives of the Phase I work, including the questions the research and development effort will try to answer to determine the feasibility of the proposed approach.
3. **Phase I Statement of Work (including Subcontractors' Efforts)**
  - a) Provide an explicit, detailed description of the Phase I approach. The Statement of Work should 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. The methods planned to achieve each objective or task should be discussed explicitly and in detail. This section should be a substantial portion of the Technical Volume section.
  - b) The topic may have been identified by the Program Manager as research or activities involving Human/Animal Subjects and/or Recombinant DNA. In the event that Phase I performance includes performance of these kinds of research or activities, please identify the applicable protocols and how those protocols will be followed during Phase I. Please note that funds cannot be released or used on any portion of the project involving human/animal subjects or recombinant DNA research or activities until all of the proper approvals have been obtained (see DoD STTR 2023.D BAA).
4. **Related Work.** Describe significant activities directly related to the proposed effort, including any conducted by the PI, the proposing firm, consultants, or others. Describe how these activities interface with the proposed project and discuss any 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 previous work not directly related to the proposed effort but similar. Provide the following: (1) short description, (2) client for which work was performed (including individual to be contacted and phone number), and (3) date of completion.

5. **Relationship with Future Research or Research and Development**

- a) State the anticipated results of the proposed approach if the project is successful.
- b) Discuss the significance of the Phase I effort in providing a foundation for Phase II research or research and development effort.
- c) Identify the applicable clearances, certifications and approvals required to conduct Phase II testing and outline the plan for ensuring timely completion of said authorizations in support of Phase II research or research and development effort.

6. **Key Personnel.** Identify key personnel who will be involved in the Phase I effort including information on directly related education and experience. A concise technical resume of the PI, including a list of relevant publications (if any), must be included (Please do not include Privacy Act Information). All resumes will count toward the page limit for Volume 2, as specified in the topic.

7. **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. Refer to DoD SBIR 2023.4/STTR 2023.D BAA for more information.

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)).

8. **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.

9. **Subcontractors/Consultants.** 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. Involvement of a university or other subcontractors or consultants in the project may be appropriate. If such involvement is intended, it should be identified and described according to the Cost Breakdown Structure at <https://www.dodsbirsttr.mil/submissions/learning-support/firm-templates>. Please refer to DoD SBIR 2022.4/STTR 2023.D BAA for detailed eligibility requirements as it pertains to the use of subcontractors/consultants.

10. **Prior, Current, or Pending Support of Similar Proposals or Awards.** If a proposal submitted in response to a corresponding topic is substantially the same as another proposal that was funded, is now being funded, or is pending with another Federal Agency, or another DoD Component or DARPA, you must reveal this on the Proposal Cover Sheet and provide the following information:

- a) 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.
- b) Date of proposal submission or date of award.
- c) Title of proposal.
- d) Name and title of the PI for each proposal submitted or award received.
- e) Title, number, and date of BAA(s) or solicitation(s) under which the proposal was submitted, will be submitted, or under which award is expected or has been received.
- f) If award was received, state contract number.
- g) Specify the applicable topics for each proposal submitted or award received.

**Note: If this does not apply, state in the proposal "No prior, current, or pending support for proposed work."**

11. **Transition and Commercialization Strategy.** DARPA is equally interested in dual use commercialization of SBIR/STTR project results to the U.S. military, the private sector market, or both, and expects explicit discussion of key activities to achieve this result in the transition and commercialization strategy part of the proposal. Phase I is the time to plan for and begin transition and commercialization activities. The small business must convey an understanding of the market, competitive landscape, potential stakeholders and end-users, and preliminary transition path or paths to be established during the Phase I project. The Phase I transition and commercialization strategy shall not exceed 5 pages. It should be the last section of the technical volume and include the following elements:

- a) **A summary of transition and commercialization activities conducted during prior SBIR/STTR efforts if applicable, and the Technology Readiness Level (TRL) achieved.**
- b) **Problem or Need Statement.** Briefly describe the problem, need, or requirement, and its significance relevant to a Department of Defense application and/or a private sector application that the SBIR/STTR project results would address. Is there a broader societal need you are trying to address? Please describe.
- c) **Description of Product(s) and/or System Application(s).** Identify the commercial product(s) and/or DoD system(s), or system(s) under development, or potential new system(s). Identify the potential DoD end- users, Federal customers, and/or private sector customers who would likely use the technology.
- d) **Business Model(s)/Procurement Mechanism(s).** Discuss your current business model hypothesis for bringing the technology to market. Describe plans to license, partner, or self-produce your product. How do you plan to generate revenue? Describe the resources you expect will be needed to implement your business models. Discuss your plan and expected timeline to secure these resources. Understanding DARPA's goal of creating and sustaining a U.S. military advantage, describe how you intend to develop your product and supply chains to enable this differentiation.
- e) **Target Market.** Describe the market and addressable market for the innovation. Describe the customer sets you propose to target, their size, their growth rate, and their key reasons they would consider procuring the

technology. Discuss the business economics and market drivers in the target industry. Describe competing technologies existent today on the market as well as those being developed in the lab. How has the market opportunity been validated? Describe the competition. How do you expect the competitive landscape may change by the time your product/service enters the market?

- f) **Funding Requirements.** Describe your company's funding history. How much external financing have you raised? Describe your plans for future funding sources (internal, loan, angel, venture capital, etc.).
- g) **Transition and Commercialization Risks.** Describe the major technology, market and team risks associated with achieving successful transition and commercialization of the DARPA funded technology. DARPA is not afraid to take risks but we want to ensure that our awardees clearly understand the risks in front of them. What are the key risks in bringing your innovation to market? What are actions you plan to undertake to mitigate these risks?
- h) **Expertise/Qualifications of Team/Company Readiness.** Describe the expertise and qualifications of your management, marketing/business development and technical team that will support the transition of the technology from the prototype to the commercial market and into government operational environments. Has this team previously taken similar products/services to market? If the present team does not have this needed expertise, how do you intend to obtain it? What is the financial history and health of your company (e.g., availability of cash, profitability, revenue growth, etc.)?
- i) **Anticipated Transition and Commercialization Results.** Include a schedule showing the anticipated quantitative transition and commercialization results from the Phase II project at one year after the start of Phase II, at the completion of Phase II, and after the completion of Phase II (i.e., amount of additional investment, sales revenue, etc.). After Phase II award, the company is required to report actual sales and investment data in its Company Commercialization Report at least annually.

Advocacy Letters (OPTIONAL)\* Feedback received from potential Commercial and/or DoD customers and other end-users regarding their interest in the technology to support their capability gaps. Advocacy letters that are faxed or e-mailed separately will NOT be accepted.

Letters of Intent/Commitment (OPTIONAL)\* Relationships established, feedback received, support and commitment for the technology with one or more of the following: Commercial customer, DoD PM/PEO, a Defense Prime, or vendor/supplier to the Primes and/or other vendors/suppliers identified as having a potential role in the integration of the technology into fielded systems/products or those under development. Letters of Intent/Commitment that are faxed or e-mailed separately will NOT be accepted.

\*Advocacy Letters and Letters of Intent/Commitment are optional, and should ONLY be submitted to substantiate any transition or commercialization claims made in the commercialization strategy. Please DO NOT submit these letters just for the sake of including them in your proposal. These letters DO NOT count against any page limit.

In accordance with section 3-209 of DOD 5500.7-R, Joint Ethics Regulation, letters from government personnel will NOT be considered during the evaluation process.

#### **d. Format of Cost Volume (Volume 3)**



Proposers are required to use the Phase I – Volume 3: Cost Proposal Template (Excel Spreadsheet) provided at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>.

**e. Content of the Cost Volume (Volume 3)**

Some items in the Cost Breakdown Guidance below may not apply to the proposed project. If such is the case, there is no need to provide information on each and every item.

ALL proposed costs should be accompanied by documentation to substantiate how the cost was derived. For example, if you proposed travel cost to attend a project-related meeting or conference, and used a travel website to compare flight costs, include a screen shot of the comparison. Similarly, if you proposed to purchase materials or equipment, and used the internet to search for the best source, include your market research for those items. You do not necessarily have to propose the cheapest item or supplier, but you should explain your decision to choose one item or supplier over another. It's important to provide enough information to allow contracting personnel to understand how the proposer plans to use the requested funds.

If selected for award, failure to include the documentation with your proposal will delay contract negotiation, and the proposer will be asked to submit the necessary documentation to the Contracting Officer to substantiate costs (e.g., cost estimates for equipment, materials, and consultants or subcontractors). It is important to respond as quickly as possible to the Contracting Officer's request for documentation.

Cost Breakdown Guidance:

- List all key personnel by name as well as by number of hours dedicated to the project as direct labor.
- Special tooling and test equipment and material cost may be included. The inclusion of equipment and material will be carefully reviewed relative to need and appropriateness for the work proposed. The purchase of special tooling and test equipment must, in the opinion of the Contracting Officer, be advantageous to the Government and should be related directly to the specific topic. These may include such items as innovative instrumentation and/or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with DARPA; unless it is determined that transfer of title to the contractor would be more cost effective than recovery of the equipment by the DARPA.
- Cost for travel funds must be justified and related to the needs of the project.
- Cost sharing is permitted for proposals under this announcement; however, cost sharing is not required nor will it be an evaluation factor in the consideration of a proposal.
- All subcontractor costs and consultant costs must be detailed at the same level as prime contractor costs in regard to labor, travel, equipment, etc. Provide detailed substantiation of subcontractor costs in your cost proposal. Enter this information in the Explanatory Material section of the on-line cost proposal form. The Supporting Documents Volume (Volume 5) may be used if additional space is needed.

For more information about cost proposals and accounting standards associated with contract

awards, see the DCAA publication titled “Audit Process Overview – Information for Contractors” available at <http://www.dcaa.mil>.

**f. Company Commercialization Report (Volume 4)**

The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. The Company Commercialization Report (CCR) is required for Phase I and Direct to Phase II proposals. Please refer to the DoD STTR Program BAA for full details on this requirement. Information contained in the CCR will not be considered by DARPA during proposal evaluations.

**g. Supporting Documents (Volume 5)**

In addition to required DoD documentation and certifications, small businesses may also submit additional documentation to support the Technical Volume (Volume 2) and the Cost Volume (Volume 3) in Volume 5.

**f. Fraud Waste and Abuse (Volume 6)**

The Fraud, Waste and Abuse (FWA) training is required for Phase I and Direct to Phase II proposals. FWA training provides information on what represents FWA in the SBIR/STTR program, the most common mistakes that lead to FWA, as well as the penalties and ways to prevent FWA in your firm. This training material must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline. Knowingly and willfully making any false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 U.S.C. Sec 1001), punishable by a fine of up to \$10,000, up to five years in prison, or both. Understanding the indicators and types of fraud, waste, and abuse that can occur is critical for the SBIR/STTR awardees’ role in preventing the loss of research dollars.

**Defense Advanced Research Projects Agency (DARPA)  
DoD 23.D Small Business Technology Transfer (STTR) Annual BAA  
Proposal Submission Instructions Release 2**

**INTRODUCTION**

To achieve DARPA's mission to create technological surprise, the agency makes strategic, early investments in science and technology that will have long-term positive impacts on our national security. The pace of discovery in both science and technology is accelerating worldwide, resulting in new fields of study and the identification of scientific areas ripe for small business utilization through the SBIR and STTR programs. Small businesses are critical for developing technology to support national security. Proposers are encouraged to consider whether the R/R&D being proposed to DoD Components also has private sector potential, either for the proposed application or as a base for other applications. The topics below focus on technical domains important to DARPA's mission pursuing innovative research concepts that fall within one of its technology offices. More information about DARPA's technical domains and research topics of interest may be found at: <http://www.darpa.mil/about-us/offices>.

Proposers responding to a topic in this BAA must follow all general instructions provided in the Department of Defense (DoD) STTR Program BAA. DARPA requirements in addition to or deviating from the DoD Program BAA are provided in the instructions below.

**Proposers are encouraged to thoroughly review the DoD Program BAA and register for the DSIP Listserv to remain apprised of important programmatic and contractual changes.**

- The DoD Program BAA is located at: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/#announcements>. Be sure to select the tab for the appropriate BAA cycle.
- Register for the DSIP Listserv at: <https://www.dodsbirsttr.mil/submissions/login>.

Specific questions pertaining to the administration of the DARPA Program and these proposal preparation instructions should be directed to: DARPA Small Business Programs Office at [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil). DSIP Topic Q&A will NOT be available for these DARPA topics. Technical questions related to improving the understanding of a topic's requirements must be submitted to [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil) by the deadline listed below.

The following dates apply to this DARPA Topic release:

- August 17, 2023:** Topics issued for pre-release
- August 31, 2023:** Topics open; DARPA begins accepting proposals via DSIP
- September 28, 2023:** Deadline for technical question submission
- October 03, 2023:** Deadline for receipt of proposals no later than **12:00 pm ET**

**PHASE I PROPOSAL GUIDELINES**

The Defense SBIR/STTR Innovation Portal (DSIP) is the official portal for DoD SBIR/STTR proposal submission. Proposers are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Detailed instructions regarding registration and proposal submission via DSIP are provided in Appendix A.

## Current Release Award Structure by Topic

Topic Number	Phase I		
	Technical Volume	Award Amount	Period of Performance (PoP)
HR0011ST2023D-02	25 pages	\$275,000	10 months
HR0011ST2023D-03	25 pages	\$275,000	10 months

### Technical Volume (Volume 2)

The technical volume is not to exceed 20 pages and must follow the formatting requirements provided in the DoD STTR 2023.D Program BAA. Phase I commercialization strategy shall not exceed 5 pages. This should be the last section of the Technical Volume and will not count against the 20-page limit.

### Content of the Technical Volume

Proposers should refer to the DARPA Phase I Proposal Instructions, provided on the DARPA Small Business site (<https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>).

### Cost Volume (Volume 3)

Please see the chart above for award amounts listed by topic. Proposers are required to use the Phase I – Volume 3: Cost Proposal Template (Excel Spreadsheet) provided on the DARPA Small Business site (<https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>). Subcontractors may also submit unsanitized costs using this template directly to DARPA at [SBIR-BAA@darpa.mil](mailto:SBIR-BAA@darpa.mil).

Please review the updated Percentage of Work (POW) calculation details included in the DoD Program BAA. DARPA cannot accept deviations from the POW requirements for STTR proposals.

### Company Commercialization Report (CCR) (Volume 4)

Completion of the CCR as Volume 4 of the proposal submission in DSIP is required. Please refer to the DoD STTR Program BAA for full details on this requirement. Information contained in the CCR will not be considered by DARPA during proposal evaluations.

### Supporting Documents (Volume 5)

In addition to the documents required by DoD, small businesses may also submit additional documentation to support the Technical Volume (Volume 2) and the Cost Volume (Volume 3) in Volume 5. See Appendix A for required certifications that must be included in Volume 5. For additional information, see the SBIR 23.4 Annual Program Broad Agency Announcement (BAA) at <https://www.defensesbirstr.mil/SBIR-STTR/Opportunities/>.

## PHASE II PROPOSAL GUIDELINES

Phase II proposals may only be submitted by Phase I awardees. Should DARPA have funding available and decide to proceed with a Phase II, proposers awarded a Phase I contract will be eligible to submit a proposal for Phase II and will be contacted by the DARPA Small Business Programs Office at the appropriate time during their Phase I period of performance. Phase II proposals will be evaluated in accordance with the applicable DoD or DARPA SBIR/STTR BAA. Phase II selection(s) are at the sole

discretion of the government and are subject to funding availability and Phase I performance. Phase II Instructions are available at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>.

Topic Number	Phase II				
	Tech Volume	Award Amount	Period of Performance (PoP)	Option Amount	Option PoP
HR0011ST2023D-02	45 pages	\$1,300,000	24 months	\$500,000	12 months
HR0011ST2023D-03	45 pages	\$1,200,000	24 months	\$600,000	12 months

### **DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TAB A)**

DARPA does not offer TAB A funding.

### **EVALUATION AND SELECTION**

All proposals will be evaluated in accordance with the evaluation criteria listed in the DoD STTR 2023.D BAA. DARPA will conduct an evaluation of each conforming proposal. Proposals that do not comply with the requirements detailed in this BAA and the research objective(s) of the corresponding topic are considered non-conforming and therefore are not evaluated nor considered for award.

Using the evaluation criteria, the Government will evaluate each proposal in its entirety, documenting the strengths and weaknesses relative to each evaluation criterion, and, based on these identified strengths and weaknesses, determine the proposal's overall selectability. Proposals will not be evaluated against each other during the evaluation process, but rather evaluated on their own individual merit to determine how well the proposal meets the criteria stated in this BAA and the corresponding topic.

Awards will be made to proposers whose proposals are determined to be the most advantageous to the Government, consistent with instructions and evaluation criteria specified in the DoD STTR 2023.D BAA and availability of funding. Given the limited funding available for each topic released, not all proposals considered selectable will be necessarily selected for funding.

For the purposes of this proposal evaluation process, a selectable proposal is defined as follows:

**Selectable:** A selectable proposal is a proposal that has been evaluated by the Government against the evaluation criteria listed in the BAA and topic, and the strengths of the overall proposal outweighs its weaknesses. Additionally, there are no accumulated weaknesses that would require extensive negotiations and/or a resubmitted proposal.

For the purposes of this proposal evaluation process, a non-selectable proposal is defined as follows:

**Non-Selectable:** A proposal is considered non-selectable when the proposal has been evaluated by the Government against the evaluation criteria listed in the BAA and topic, and the strengths of the overall proposal do not outweigh its weaknesses.

Proposing firms will be notified of selection or non-selection status for a Phase I award within 90 days of the closing date of the BAA. It is the policy of DARPA to treat all proposals as source selection information and to disclose their contents only for the purpose of evaluation. Restrictive notices notwithstanding, during the evaluation process, submissions may be handled by support contractors for

administrative purposes and/or to assist with technical evaluation. All DARPA support contractors are expressly prohibited from performing DARPA-sponsored technical research and are bound by appropriate nondisclosure agreements. Input on technical aspects of the proposals may be solicited by DARPA from other Government and/or non-Government consultants/experts who are strictly bound by the appropriate non-disclosure requirements. No submissions will be returned. Upon completion of the evaluation and selection process, an electronic copy of each proposal received will be retained at DARPA.

Proposal titles, abstracts, anticipated benefits, and keywords of proposals that are selected for contract award will undergo a DARPA Policy and Security Review. Proposal titles, abstracts, anticipated benefits, and keywords are subject to revision and/or redaction by DARPA. Final approved versions of proposal titles, abstracts, anticipated benefits, and keywords may appear on the DoD SBIR/STTR awards website and/or the SBA's SBIR/STTR award website (<https://www.sbir.gov/sbirsearch/award/all>).

Refer to the DoD STTR 2023.D Program BAA for procedures to protest the Announcement. As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests regarding the selection decision should be submitted to:

DARPA  
Contracts Management Office (CMO)  
675 N. Randolph Street  
Arlington, VA 22203  
E-mail: [scott.ulrey@darpa.mil](mailto:scott.ulrey@darpa.mil) and [sbir@darpa.mil](mailto:sbir@darpa.mil)

## **AWARD AND CONTRACT INFORMATION**

### **1. General Award Information**

Multiple awards are anticipated. DARPA may award FAR-based government contracts (Firm- Fixed Price or Cost-Plus Reimbursement) or Other Transactions for Prototypes agreement (under the authority of 10 U.S.C. § 4022) subject to approval of the Contracting Officer. The amount of resources made available under each topic issued under this BAA will depend on the quality of the proposals received and the availability of funds.

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this announcement and to make awards with or without communications with proposers. Additionally, the Government reserves the right to award all, some, one, or none of the options on the contract(s)/agreement(s) of the performers based on available funding and technical performance. If warranted, portions of resulting awards may be segregated into pre-priced options. Additionally, DARPA reserves the right to accept proposals in their entirety or to select only portions of proposals for award. In the event that DARPA desires to award only portions of a proposal, negotiations may be opened with that proposer. The Government reserves the right to fund proposals in phases with options for continued work, as applicable.

The Government reserves the right to request any additional, necessary documentation once it makes the award instrument determination. The Government reserves the right to remove a proposal from award consideration should the parties fail to reach agreement on award terms, conditions, and price within a reasonable time, and/or the proposer fails to provide requested additional information within three business days.

In all cases, the Government Contracting Officer reserves the right to select award instrument type, regardless of instrument type proposed, and to negotiate all instrument terms and conditions with selectees. DARPA will apply publication or other restrictions, as necessary, if it determines that the research resulting from the proposed effort will present a high likelihood of disclosing performance

characteristics of military systems or manufacturing technologies that are unique and critical to defense. Any award resulting from such a determination will include a requirement for DARPA permission before publishing any information or results on the program. For more information on publication restrictions, see the DoD STTR 2023.D Program BAA.

Because of the desire to streamline the award negotiation and program execution process, proposals identified for negotiation will result in negotiating a type of instrument for award that is in the best interest of the Government. In the case of an OT for Prototype agreement under DARPA's authority to award OTs for prototype projects, 10 U.S.C. § 4022, use of an OT provides significant opportunities for flexible execution to assist in meeting DARPA's aggressive SBIR/STTR program goals.

All proposers that wish to consider an OT award should carefully read the following:

The flexibility of the OT award instrument is beneficial to the program because the Performer will be able to apply its best practices as required to carry out the research project that may be outside of the Federal Acquisition Regulation (FAR) process-driven requirements. Streamlined practices will be used, such as milestone-driven performance, intended to reduce time and effort on award administration tasks and permit performers to focus on the research effort and rapid prototyping. Because of this ability, OTs provide the Agreements Officer the flexibility to create an award instrument that contains terms and conditions that promote commercial transition, reduce some administratively burdensome acquisition regulations, and meet SBIR/STTR program goals.

Proposers must only propose an OT agreement with fixed payable milestones. Fixed payable milestones are fixed payments based on successful completion of the milestone accomplishments agreed to in the milestone plan. Refer to the Other Transactions for Prototypes Fact Sheet and Other Transaction for Prototype Agreement, available at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>. Specific milestones will be based upon the research objectives detailed in the SBO.

Please see <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program> for more information on OTs.

## **2. Transition and Commercialization Support Program (TCSP)**

DARPA will provide services to Phase II or DP2 awardees upon contract execution through the Transition and Commercialization Support Program (TCSP) at no cost to awardees. The TCSP goal is to maximize the potential for SBIR/STTR companies to move their technology beyond Phase II and into other research and development programs for further maturity or into solutions or products for DoD acquisition programs, other Federal programs, and/or the commercial market. Please visit <https://www.darpa.mil/work-with-us/for-small-businesses/commercialization-continued> for more information on DARPA TCSP.

## **3. Embedded Entrepreneurship Initiative**

Awardees of SBIR funding pursuant to this BAA may be eligible to participate in the DARPA Embedded Entrepreneurship Initiative (EEI) during the Period of Performance. Invitation to participate in EEI is at the sole discretion of the Government based on evaluation of technical and commercial factors and subject to program balance and the availability of funding. EEI is a limited scope program offered by DARPA, at DARPA's discretion, to a small subset of awardees. The goal of DARPA's EEI is to increase the likelihood that DARPA-funded technologies take root in the U.S. and provide new capabilities for national defense. EEI supports DARPA's mission "to make pivotal investments in breakthrough technologies and capabilities for national security" by accelerating the transition of innovations out of the lab and into new capabilities for the Department of Defense (DoD). EEI investment supports development of a robust and deliberate Go-to-Market strategy for selling technology product to the government and

commercial markets and positions DARPA awardees to attract U.S. investment. The following is for informational and planning purposes only and does not constitute solicitation of proposals to the EEI.

There are three elements to DARPA's EEI: (1) A Senior Commercialization Advisor (SCA) from DARPA who works with the Program Manager (PM) to examine the business case for the awardee's technology and uses commercial methodologies to identify steps toward achieving a successful transition of technology to the government and commercial markets; (2) Connections to potential industry and investor partners via EEI's Investor Working Groups; and (3) Additional funding on an awardee's contract for the awardee to hire an embedded entrepreneur to achieve specific milestones in a Go-to-Market strategy for transitioning the technology to products that serve both defense and commercial markets. This embedded entrepreneur's qualifications should include business experience within the target industries of interest, experience in commercializing early stage technology, and the ability to communicate and interact with technical and non-technical stakeholders. Funding for EEI is typically no more than \$250,000 per awardee over the duration of the award. An awardee may apportion EEI funding to hire more than one embedded entrepreneur, if achieving the milestones requires different expertise that can be obtained without exceeding the awardee's total EEI funding. The EEI effort is intended to be conducted concurrent with the research program without extending the period of performance.

#### *EEI Application Process:*

After receiving an award under the solicitation, awardees interested in being considered for EEI should notify their DARPA Program Manager (PM) during the period of performance. Timing of such notification should ideally allow sufficient time for DARPA and the awardee to review the awardee's initial transition plan, identify milestones to achieve under EEI, modify the award, and conduct the work required to achieve such milestones within the original award period of performance. These steps may take 9-18 months to complete, depending on the technology. If the DARPA PM determines that EEI could be of benefit to transition the technology to product(s) the Government needs, the PM will refer the performer to DARPA Commercial Strategy.

DARPA Commercial Strategy will then contact the performer, assess fitness for EEI, and in consultation with the DARPA technical office, determine whether to invite the performer to participate in the EEI. Factors that are considered in determining fitness for EEI include DoD/Government need for the technology; competitive approaches to enable a similar capability or product; risks and impact of the Government's being unable to access the technology from a sustainable source; Government and commercial markets for the technology; cost and affordability; manufacturability and scalability; supply chain requirements and barriers; regulatory requirements and timelines; Intellectual Property and Government Use Rights, and available funding.

Invitation to participate in EEI is at the sole discretion of DARPA and subject to program balance and the availability of funding. EEI participants' awards may be subsequently modified bilaterally to amend the Statement of Work to add negotiated EEI tasks, provide funding, and specify a milestone schedule which will include measurable steps necessary to build, refine, and execute a Go-to-Market technology transition plan aimed at delivering new capabilities for national defense. Milestone examples are available at: <https://www.darpa.mil/work-with-us/contract-management>.

Awardees under this solicitation are eligible to be considered for participation in EEI, but selection for award under this solicitation does not imply or guarantee participation in EEI.

For more information please refer to the EEI website <https://eei.darpa.mil/>.

#### **4. DARPA Toolbox Initiative**

DARPA Toolbox is an Agency-wide effort to provide open licensing opportunities with



commercial technology vendors to the researchers behind DARPA programs. DARPA Toolbox provides easy, low-cost, scalable access to state-of-the-art tools and intellectual property (IP) under predictable legal terms and streamlined acquisition procedures. The goal is to reduce performer reliance on low-quality, low-cost tools and IP that increase execution risks and complicate post-DARPA transitions.

Through this initiative, DARPA performers are granted access to select vendor tools and technologies throughout the life of their contractual relationship with the Agency. The Toolbox suppliers bring to the table proven technologies commonly used in state-of-the-art commercial microelectronics or system design methodologies.

DARPA Toolbox program information and a full list of participating suppliers can be found at <https://www.darpa.mil/work-with-us/darpa-toolbox-initiative>. If there are tool or technologies of interest, contact the Supplier POC listed for the product, referencing the DARPA Toolbox Initiative. The Supplier POC will provide advice on products and pricing information. Include any non-production pricing quotes in your proposal. Products and pricing are between you and the suppliers – *do not* contact DARPA directly.

#### **ADDITIONAL INFORMATION**

DARPA intends to use electronic mail for all correspondence regarding these topics. Questions related to the technical aspect of the research objectives and awards specifically related to a topic should be emailed to [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil). Please reference the topic number in the subject line. All questions must be in English and must include the name, email address, and the telephone number of a point of contact.

DARPA will attempt to answer questions in a timely manner; however, questions submitted within seven (7) calendar days of the proposal due date listed herein may not be answered. DARPA will post a consolidated Frequently Asked Questions (FAQ) document. To access the posting please visit: <http://www.darpa.mil/work-with-us/opportunities>. Under the topic number summary, there will be a link to the FAQ. The FAQ will be updated on an ongoing basis until one week prior to the proposal due date.

Technical support for the Defense SBIR/STTR Innovation Portal (DSIP) is available Monday through Friday, 9:00 a.m. – 5:00 p.m. ET. Requests for technical support must be emailed to [DoDSBIRSupport@reisystems.com](mailto:DoDSBIRSupport@reisystems.com) with a copy to [SBIR\\_BAA@darpa.mil](mailto:SBIR_BAA@darpa.mil).

**DARPA STTR 23.D Topic Index**  
**Release 2**

HR0011ST2023D-02  
HR0011ST2023D-03

Bistatic Engagement Algorithms and Methodologies (BEAM)  
Cyber Operations Preparedness and Education (COPE)

**HR0011ST2023D-02** TITLE: Bistatic Engagement Algorithms and Methodologies (BEAM)

**OUSD (R&E) CRITICAL TECHNOLOGY AREA(S):** Directed Energy (DE)

**OBJECTIVE:** This topic will explore the technical challenges critical to significantly reducing the size, weight, and power (SWaP) of directed energy beam control systems through the use of an on-gimbal, bistatic beam director for Laser Weapon Systems (LWS) to replace today's Common Path-Common Mode (CPCM) monostatic configurations which rely on large optical benches for image and laser management.

**DESCRIPTION:** CPCM configurations offer the advantage of improved jitter performance and high-fidelity knowledge of the laser aimpoint with respect to the tracking line-of-sight, but are high size, weight, and power (SWaP). Alternatively, a bistatic architecture with modern track camera frame rates and image processing techniques should now be able to achieve comparable accuracy, providing a beam control solution for on-gimbal, phased-array laser sources while significantly reducing the SWaP of the beam control system.

Performers will develop methodologies and tracking algorithms required to perform LWS engagements using a bistatic architecture, where the tracking and imaging path is separate from the outgoing laser path. Performers also will develop jitter mitigation techniques, aimpoint maintenance via electronic beam steering methods, and atmospheric compensation strategies. All traditional functions of a beam control and tracking system are required. These functions include target acquisition, closed loop track, aimpoint selection and maintenance, and atmospheric compensation.

Limitations to an all on-gimbal architecture will be identified by the performer, to include performance limitations as a function of camera aperture size, total system size, and laser power.

Expected deliverables include the following:

- Descriptions of possible physical implementations of on-gimbal beam control systems
- Performance predictions for the performer's chosen physical architecture
- Including peak and average irradiance for a variety of slant ranges and elevation angles
- Identification of viable algorithms for jitter mitigation, aimpoint maintenance, and atmospheric compensation
- Analysis of the ability to scale the performer's approach, with respect to effective range and target type, for three laser powers: 12 kW, 50 kW, 150 kW
- Laboratory demonstration of the performer's on-gimbal LWS design utilizing a performer-chosen low-power phased array

Expected key metrics:

- SWaP comparison between on-gimbal and CPCM LWS of similar laser power and aperture size
- Minimum achievable jitter and aimpoint error
- Atmospheric compensation capability; Strehl, or power-in-the-bucket at the target, as a function of turbulence strength and slant range

**PHASE I:** During Phase I, the performers will conceptualize a low-power, low-SWaP phased-array Laser Weapon System (LWS) where all hardware and functionalities are located on-gimbal, with the exception of subsystems for power generation/storage and thermal management. The LWS must contain all capabilities of a traditional LWS: acquisition, tracking, pointing (ATP), laser generation, adaptive optics (AO), and system/mission controls. It is assumed that adaptive optics and fine angle beam steering will be performed via the piston phase control capability of the phased array.

To perform the ATP and AO functions without using CPCM, contractors will need to identify viable algorithms and methodologies to establish laser aimpoint relative to tracker line-of-sight, perform aimpoint control, measure instantaneous turbulence distortion, and apply correct wavefront conjugations.

Performers will then design a low-power, on-gimbal, LWS meeting the above requirements. A low-power optical phased array of the performers' choice, to include fiber-based laser technology, may be used in the LWS design. For this demonstration, the laser source (seed, amplifiers, phase modulators) may be off-gimbal, but the laser array head, or emitting apertures, must be on-gimbal. System size (number of sub-apertures, number of track cameras, etc.) is to be defined by the performer.

Required Phase I deliverables include the following:

- Month 3: A Systems Requirements Review (SRR) for the low-power, on-gimbal LWS, to include a presentation at PI meeting of the requirements.
- Month 5: Report summarizing modelling and simulation software capabilities. Presentation at PI meeting on capabilities.
- Month 9: A Preliminary Design for the low-power, on-gimbal LWS, to include a list of any long lead purchases required, to include a presentation at PI meeting of the design.
- Month 10: Phase I final report summarizing Phase I work, to include identification of viable algorithms for beam control, aimpoint maintenance, wavefront measurement/correction, and phase control. Presentation at final PI meeting of accomplishments.

**PHASE II:** During Phase II, the performers will build the low-power, on-gimbal LWS designed in Phase I, and demonstrate the system under controlled scenarios in a laboratory setting. Contractors will be required to predict the performance of the as-built system, then compare these results to the laboratory tests. Contractors will also be responsible for defining the laboratory test objectives and success criteria; however, the testing must demonstrate all functionalities described above in the Description.

Performers will also conduct modeling and simulation of three on-gimbal LWS variants utilizing a government reference laser source with output powers of 12 kW, 50 kW and 150 kW. Volumes (length x width x height), and masses of the three laser sources, as well as piston phase modulation rates will be based on state-of-the-art laser sources and provided as Government Furnished Information (GFI). System optimization of each variant will be based on achievable Strehl ratios as a function of slant range and engagement angle. Other parameters of interest to the government are achievable slew rates, residual jitter estimates, and system weight and volume reductions when compared to traditional CPCM systems.

Phase II deliverables include the following:

- Month 4: A Critical Design for the low-power, on-gimbal LWS, to include a presentation at PI meeting of the design.
- Month 12: Report containing trade study results for the three laser powers listed above. Presentation at PI meeting of results.
- Month 22: Report containing detailed test and performance results based on laboratory tests. Presentation at PI meeting of results.
- Month 24: Design documents for the low-power, on-gimbal LWS, to include a list of all hardware purchased under contract, as well as a detailed explanation of the algorithms and methods used for ATP and AO, and source code for ATP and AO functions. Phase II Final Report to include a summary of tasks completed during Phase 2, a list of identified changes required to scale the LWS design to higher powers and channel counts, and any recommended system improvements. Presentation at final PI meeting of accomplishments.

**PHASE III DUAL USE APPLICATIONS:** One potential application of BEAM technology is to marry the laser arrays under development in the DARPA Modular Efficient Laser Technology program (<https://www.darpa.mil/program/modular-efficient-laser-technology>) with the beam control architectures of BEAM. A high-power, on-gimbal, system could be used on a large variety of ground vehicles for C-UAS and potentially even for counter-mortar missions. Such a low-SWaP system could be used by Special Forces for operational preparation of the battlespace. Finally, airborne applications on smaller UAS might become available depending on the performance results of Phase II.

**REFERENCES:**

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2. Vorontsov, M., Filmonov, G., Ovchinnikov, V., Polnau, E., Lachinova, S., Wyrach, T., Mangano, J., "Comparative efficiency analysis of fiber-array and conventional beam director systems in volume turbulence," Applied Optics, Vol. 55, No. 15; <http://dx.doi.org/10.1364/AO.55.004170>
3. Ahmed Hassebo, Balbina Salas, Yasser Y. Hassebo, "Monostatic and bistatic lidar systems: simulation to improve SNR and attainable range in daytime operations," Proc. SPIE 10094, Frontiers in Ultrafast Optics: Biomedical, Scientific, and Industrial Applications XVII, 1009421 (17 February 2017); doi: 10.1117/12.2253567

**KEYWORDS:** Beam control systems, Directed energy, Bistatic beam director, Phased-array laser system, On-gimbal laser system, Adaptive Optics (AO), Atmospheric compensation, Acquisition Tracking and Pointing (ATP)

**HR0011ST2023D-03**

**TITLE:** Cyber Operations Preparedness and Education (COPE)

**OUSD (R&E) Critical Technology Area(s):** Advanced Computing and Software

**OBJECTIVE:** The objective of the COPE STTR topic is to push forward the state-of-the-art in rapid and effective cybersecurity training to address the current skills gap in the cybersecurity workforce [1, 2].

**DESCRIPTION:** The US cybersecurity workforce currently suffers a deficit of over 400,000 skilled personnel [3]. Not only is there a shortfall of cybersecurity professionals, there's a lack in the preparedness of hired professionals to perform critical cybersecurity tasks. Studies have found that only half of hired recent graduates in cybersecurity are adequately prepared to carry out their duties [4, 5]. That is, the skills gap is even worse than often stated, as even filled positions might represent missing talent.

One reason for this skills gap is the inadequacy of current training/education techniques. Training techniques need to be both scalable, to address the sheer size of the skills gap, and effectively in-depth, because adequately understanding the security of every additional layer in a system requires a workable understanding of the security of the underlying layers. Unfortunately, most current training approaches in cybersecurity fail to achieve both adequate scalability and efficacy to properly prepare learners in the foundational concepts of critical cyber operational skills.

This lack of practical training/education puts mission-critical offensive and defensive cyberspace operations at risk and drives cybersecurity talent shortages.

The objective of COPE is to push forward the state-of-the-art in rapid and effective cybersecurity training to address the current skills gap in the cybersecurity workforce.

**PHASE I:** Phase 1 of COPE will explore feasibility by:

1. Conducting a study on cybersecurity job vacancies and required skillsets across the Department of Defense (DoD), intelligence community (IC), US government (USG), and industry; the study will identify specific security concepts needed by each;
2. Developing a curriculum and scalable training/education framework with technical capabilities to teach critical cybersecurity concepts such as network security operations, threat hunting, ransomware prevention and recovery, etc.;
3. Identifying potential DoD, IC, USG, and industry benefactors of the advanced security training and working with them on pilot iterations of the training; and
4. Demonstrating the pilot training capability and evaluating its efficacy.

Phase 1 deliverables and milestones for COPE should include:

- Months 2, 4, 6, and 8: report detailing technical progress made to date, tasks accomplished, current risks/mitigations, plan for the remainder of Phase 1 (e.g., tasks to be accomplished, planned activities/trips/meeting), trip/meeting summaries, and a summary of any potential issues or problem areas (technical or financial) that require the attention of the DARPA PM. Reports may be in the form of Microsoft Word or PowerPoint.
- Month 10:
  - Final COPE study report on cybersecurity job vacancies and required skillsets;
  - Final COPE curriculum and education framework/platform that can host training material relevant to real-world problems encountered by cybersecurity engineers;
  - Training material to develop relevant real-world skills; and,
  - Final COPE delivery/demonstration of training capability and efficacy evaluation.

**PHASE II:** Phase II of COPE will focus on expanding the training platform by:

- Increasing the amount and variety of material supported by the training platform by working with potential training benefactors to identify gaps and additional requirements; and
- Increasing the scalability of training delivery.

The goal of Phase 2 is to transition the COPE framework/platform into a significant DoD/IC/USG and industry footprint.

Successful proposals will present a clear plan for conceptualizing, developing, and delivering a training platform that:

1. Scales to the scope needed to address the cybersecurity skills gap;
2. Effectively conveys a wide variety of security concepts to newcomers to cybersecurity and to cybersecurity engineers seeking to improve their qualifications;
3. Achieves results in a rapid enough fashion to fit into personnel training time; and
4. Is applicable to and solves specific training problems in DoD/IC/USG and industry settings.

Phase 2 deliverables and milestones for COPE should include:

- Quarterly (with the exception of Month 24 and Month 36, if the option is exercised): reports detailing technical progress made to date, tasks accomplished, current risks/mitigations, plan for the remainder of Phase 2 (e.g., tasks to be accomplished, planned activities/trips/meeting), trip/meeting summaries, and a summary of any potential issues or problem areas (technical or financial) that require the attention of the DARPA PM. Reports may be in the form of Microsoft Word or PowerPoint.
- Month 24:
  - Final COPE curriculum and education framework/platform;
  - Final training material documentation; and,
  - Final COPE delivery/demonstration of training capability scaled to at least 13 trainings per year across DoD/IC/USG and industry settings.
- Month 36 (Phase II Option period):
  - Final Phase II Option period technical report including details of COPE training framework/platform prototype efficacy against other state-of-the-art platforms/curriculums, including quantitative metrics for assessment;
  - Final COPE curriculum and education framework/platform;
  - Final training material documentation;
  - Final COPE delivery/demonstration of training capability scaled to at least 26 trainings per year across DoD/IC/USG and industry settings.

**PHASE III DUAL USE APPLICATIONS:** COPE has potential applications across the DoD/IC/USG and industry. For DoD/IC/USG, successful COPE approaches will provide a repeatable, reliable, effective, and scalable cybersecurity training capability. COPE has the same applicability for industry/the commercial sector.

Phase III refers to work that derives from, extends, or completes an effort made under prior STTR funding agreements, but is funded by sources other than the STTR program. The Phase III work will be oriented towards transition and commercialization of the developed COPE framework. For Phase III, the proposer is required to obtain funding from either the private sector, a non-STTR Government source, or both, to develop the prototype into a viable product or non-R&D service for sale in government or private sector markets.

COPE solutions will support national efforts to improve cybersecurity workforce abilities and help secure DoD/IC/USG and commercial networks by enabling a workforce qualified to handle mission-critical offensive and defensive cyberspace operations.

**REFERENCES:**

- [1] Mitchell, B. (2021, April 22). DOD grapples with the future of its cyber workforce. FEDSCOOP. <https://fedscoop.com/dod-cybersecurity-workforce-struggles-dennis-crall-john-sherman/>
- [2] Crumpler, William, and James A. Lewis. (January 2019). The Cybersecurity Workforce Gap. Retrieved from the Center for Strategic and International Studies website: [https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/190129\\_Crumpler\\_Cybersecurity\\_FINAL.pdf](https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/190129_Crumpler_Cybersecurity_FINAL.pdf)
- [3] Fitzgerald, Jay. (2022, October 24). Cybersecurity Labor Shortage Grows Worse in U.S. And Worldwide: Report. The Channel Co. CRN. <https://www.crn.com/news/security/report-cybersecurity-labor-shortage-grows-worse-in-u-s-and-worldwide>
- [4] St. Clair, Nelbert, and John Girard. "Are cybersecurity professionals satisfied with recent cybersecurity graduates?" In Journal of The Colloquium for Information Systems Security Education, vol. 7, no. 1, pp. 7-7. 2020. <https://cisse.info/journal/index.php/cisse/article/download/103/103>
- [5] ISACA. (2021, May 4). New ISACA Study Finds Cybersecurity Workforce Minimally Impacted by Pandemic, but Still Grappling with Persistent Hiring Challenges. ISACA. <https://www.isaca.org/why-isaca/about-us/newsroom/press-releases/2021/new-isaca-study-finds-cybersecurity-workforce-minimally-impacted-by-pandemic-but-still-grappling>

**KEYWORDS:** Cybersecurity, Training, Education, Offensive Cyberspace Operations, Defensive Cyberspace Operations, Network Security Operations, Threat Hunting, Ransomware Prevention and Recovery



# Appendix A: DARPA PHASE I PROPOSAL INSTRUCTIONS

## I. Introduction

A complete proposal submission consists of:

Volume 1: Proposal Cover Sheet

Volume 2: Technical Volume

Volume 3: Cost Volume

Volume 4: Company Commercialization Report

Volume 5: Supporting Documents

a. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Attachment 1)

**MANDATORY**

b. Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Attachment 2)

**MANDATORY**

c. Verification of Eligibility of Small Business Joint Ventures (Attachment 3), if applicable

d. Disclosure of Funding Sources (Attachment 4) **MANDATORY**

e. Other supporting documentation

**A completed proposal submission in DSIP does NOT indicate that the mandatory supporting documents have been uploaded. It is the responsibility of the proposing small business concern to ensure that the mandatory documents listed above have been uploaded and included with the proposal submission.**

Volume 6: Fraud, Waste and Abuse Training

The Defense SBIR/STTR Innovation Portal (DSIP) provides a structure for building the proposal volumes and submitting a consolidated proposal package. If this is your first time submitting an SBIR or STTR proposal using DSIP, please review detailed training guides at <https://www.dodsbirsttr.mil/submissions/learning-support/training-materials>. It is the responsibility of the proposing firm to ensure that a complete proposal package is certified and submitted by the close date listed in the TOPIC to which they are responding.

To assist in proposal development, templates for Volume 2: Technical Volume and Volume 3: Cost Volume have been provided as attachments on the DARPA Small Business website, under SBIR/STTR Forms and Templates at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>. Use of the DARPA Cost Proposal template is mandatory.

## II. Proprietary Information

Proposers that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall follow instructions in the DoD STTR 2023.D BAA regarding marking propriety proposal information.

## III. Phase I Proposal Instructions

### a. Proposal Cover Sheet (Volume 1)

The Cover Sheet must include a brief technical abstract of no more than 3000 characters that describes the proposed R&D project with a discussion of anticipated benefits and potential commercial applications. **Do not include proprietary or classified information in the**

**Proposal Cover Sheet.** If your proposal is selected for award, the technical abstract and discussion of anticipated benefits may be publicly released.

**b. Format of Technical Volume (Volume 2)**

1. 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.**
2. Length: The Phase I technical volume should consist of a 20-page technical proposal and a 5-page commercialization plan. The Government will not consider pages in excess of the page count limitations.
3. Layout: Number all pages of your proposal consecutively. Font size should not be smaller than 10-point on standard 8-1/2" x 11" paper with one-inch margins. The header on each page of the Technical Volume should contain your company name, topic number, and proposal number assigned by DSIP when the Cover Sheet was created. The header may be included in the one-inch margin. Please refer to the document titled Phase I Template – Volume 2: Technical Volume at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program> for additional details.

**c. Content of the Technical Volume (Volume 2)**

The Technical Volume should cover the following items in the order given below:

1. **Identification and Significance of the Problem or Opportunity.** Define the specific technical problem or opportunity addressed and its importance.
2. **Phase I Technical Objectives.** Enumerate the specific objectives of the Phase I work, including the questions the research and development effort will try to answer to determine the feasibility of the proposed approach.
3. **Phase I Statement of Work (including Subcontractors' Efforts)**
  - a) Provide an explicit, detailed description of the Phase I approach. The Statement of Work should 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. The methods planned to achieve each objective or task should be discussed explicitly and in detail. This section should be a substantial portion of the Technical Volume section.
  - b) The topic may have been identified by the Program Manager as research or activities involving Human/Animal Subjects and/or Recombinant DNA. In the event that Phase I performance includes performance of these kinds of research or activities, please identify the applicable protocols and how those protocols will be followed during Phase I. Please note that funds cannot be released or used on any portion of the project involving human/animal subjects or recombinant DNA research or activities until all of

the proper approvals have been obtained (see DoD STTR 2023.D BAA).

4. **Related Work.** Describe significant activities directly related to the proposed effort, including any conducted by the PI, the proposing firm, consultants, or others. Describe how these activities interface with the proposed project and discuss any 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 previous work not directly related to the proposed effort but similar. Provide the following: (1) short description, (2) client for which work was performed (including individual to be contacted and phone number), and (3) date of completion.
  
5. **Relationship with Future Research or Research and Development**
  - a) State the anticipated results of the proposed approach if the project is successful.
  - b) Discuss the significance of the Phase I effort in providing a foundation for Phase II research or research and development effort.
  - c) Identify the applicable clearances, certifications and approvals required to conduct Phase II testing and outline the plan for ensuring timely completion of said authorizations in support of Phase II research or research and development effort.
  
6. **Key Personnel.** Identify key personnel who will be involved in the Phase I effort including information on directly related education and experience. A concise technical resume of the PI, including a list of relevant publications (if any), must be included (Please do not include Privacy Act Information). All resumes will count toward the page limit for Volume 2, as specified in the topic.
  
7. **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. Refer to DoD SBIR 2023.4/STTR 2023.D BAA for more information.

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)).
  
8. **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.
  
9. **Subcontractors/Consultants.** 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. Involvement of a university or other subcontractors or consultants in the project may be appropriate. If such involvement is intended, it should be identified and described according to the Cost Breakdown Structure at <https://www.dodsbirsttr.mil/submissions/learning-support/firm-templates>. Please refer to DoD SBIR 2022.4/STTR 2023.D BAA for detailed eligibility requirements as it pertains to the use of subcontractors/consultants.

10. **Prior, Current, or Pending Support of Similar Proposals or Awards.** If a proposal submitted in response to a corresponding topic is substantially the same as another proposal that was funded, is now being funded, or is pending with another Federal Agency, or another DoD Component or DARPA, you must reveal this on the Proposal Cover Sheet and provide the following information:
- a) 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.
  - b) Date of proposal submission or date of award.
  - c) Title of proposal.
  - d) Name and title of the PI for each proposal submitted or award received.
  - e) Title, number, and date of BAA(s) or solicitation(s) under which the proposal was submitted, will be submitted, or under which award is expected or has been received.
  - f) If award was received, state contract number.
  - g) Specify the applicable topics for each proposal submitted or award received.

**Note: If this does not apply, state in the proposal "No prior, current, or pending support for proposed work."**

11. **Transition and Commercialization Strategy.** DARPA is equally interested in dual use commercialization of SBIR/STTR project results to the U.S. military, the private sector market, or both, and expects explicit discussion of key activities to achieve this result in the transition and commercialization strategy part of the proposal. Phase I is the time to plan for and begin transition and commercialization activities. The small business must convey an understanding of the market, competitive landscape, potential stakeholders and end-users, and preliminary transition path or paths to be established during the Phase I project. The Phase I transition and commercialization strategy shall not exceed 5 pages. It should be the last section of the technical volume and include the following elements:

- a) **A summary of transition and commercialization activities conducted during prior SBIR/STTR efforts if applicable, and the Technology Readiness Level (TRL) achieved.**
- b) **Problem or Need Statement.** Briefly describe the problem, need, or requirement, and its significance relevant to a Department of Defense application and/or a private sector application that the SBIR/STTR project results would address. Is there a broader societal need you are trying to address? Please describe.
- c) **Description of Product(s) and/or System Application(s).** Identify the commercial product(s) and/or DoD system(s), or system(s) under development, or potential new system(s). Identify the potential DoD end- users, Federal customers, and/or private sector customers who would likely use the

- technology.
- d) **Business Model(s)/Procurement Mechanism(s).** Discuss your current business model hypothesis for bringing the technology to market. Describe plans to license, partner, or self-produce your product. How do you plan to generate revenue? Describe the resources you expect will be needed to implement your business models. Discuss your plan and expected timeline to secure these resources. Understanding DARPA's goal of creating and sustaining a U.S. military advantage, describe how you intend to develop your product and supply chains to enable this differentiation.
  - e) **Target Market.** Describe the market and addressable market for the innovation. Describe the customer sets you propose to target, their size, their growth rate, and their key reasons they would consider procuring the technology. Discuss the business economics and market drivers in the target industry. Describe competing technologies existent today on the market as well as those being developed in the lab. How has the market opportunity been validated? Describe the competition. How do you expect the competitive landscape may change by the time your product/service enters the market?
  - f) **Funding Requirements.** Describe your company's funding history. How much external financing have you raised? Describe your plans for future funding sources (internal, loan, angel, venture capital, etc.).
  - g) **Transition and Commercialization Risks.** Describe the major technology, market and team risks associated with achieving successful transition and commercialization of the DARPA funded technology. DARPA is not afraid to take risks but we want to ensure that our awardees clearly understand the risks in front of them. What are the key risks in bringing your innovation to market? What are actions you plan to undertake to mitigate these risks?
  - h) **Expertise/Qualifications of Team/Company Readiness.** Describe the expertise and qualifications of your management, marketing/business development and technical team that will support the transition of the technology from the prototype to the commercial market and into government operational environments. Has this team previously taken similar products/services to market? If the present team does not have this needed expertise, how do you intend to obtain it? What is the financial history and health of your company (e.g., availability of cash, profitability, revenue growth, etc.)?
  - i) **Anticipated Transition and Commercialization Results.** Include a schedule showing the anticipated quantitative transition and commercialization results from the Phase II project at one year after the start of Phase II, at the completion of Phase II, and after the completion of Phase II (i.e., amount of additional investment, sales revenue, etc.). After Phase II award, the company is required to report actual sales and investment data in its Company Commercialization Report at least annually.

Advocacy Letters (OPTIONAL)\* Feedback received from potential Commercial and/or DoD customers and other end-users regarding their interest in the technology to support their capability gaps. Advocacy letters that are faxed or e-mailed separately will NOT be accepted.

Letters of Intent/Commitment (OPTIONAL)\* Relationships established, feedback received, support and commitment for the technology with one or more of the following: Commercial customer, DoD PM/PEO, a Defense Prime, or vendor/supplier to the Primes and/or other vendors/suppliers identified as having a potential role in the integration of the technology into

fielded systems/products or those under development. Letters of Intent/Commitment that are faxed or e-mailed separately will NOT be accepted.

\*Advocacy Letters and Letters of Intent/Commitment are optional, and should ONLY be submitted to substantiate any transition or commercialization claims made in the commercialization strategy. Please DO NOT submit these letters just for the sake of including them in your proposal. These letters DO NOT count against any page limit.

In accordance with section 3-209 of DOD 5500.7-R, Joint Ethics Regulation, letters from government personnel will NOT be considered during the evaluation process.

**d. Format of Cost Volume (Volume 3)**

Proposers are required to use the Phase I – Volume 3: Cost Proposal Template (Excel Spreadsheet) provided at <https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program>.

**e. Content of the Cost Volume (Volume 3)**

Some items in the Cost Breakdown Guidance below may not apply to the proposed project. If such is the case, there is no need to provide information on each and every item.

ALL proposed costs should be accompanied by documentation to substantiate how the cost was derived. For example, if you proposed travel cost to attend a project-related meeting or conference, and used a travel website to compare flight costs, include a screen shot of the comparison. Similarly, if you proposed to purchase materials or equipment, and used the internet to search for the best source, include your market research for those items. You do not necessarily have to propose the cheapest item or supplier, but you should explain your decision to choose one item or supplier over another. It's important to provide enough information to allow contracting personnel to understand how the proposer plans to use the requested funds.

If selected for award, failure to include the documentation with your proposal will delay contract negotiation, and the proposer will be asked to submit the necessary documentation to the Contracting Officer to substantiate costs (e.g., cost estimates for equipment, materials, and consultants or subcontractors). It is important to respond as quickly as possible to the Contracting Officer's request for documentation.

**Cost Breakdown Guidance:**

- List all key personnel by name as well as by number of hours dedicated to the project as direct labor.
- Special tooling and test equipment and material cost may be included. The inclusion of equipment and material will be carefully reviewed relative to need and appropriateness for the work proposed. The purchase of special tooling and test equipment must, in the opinion of the Contracting Officer, be advantageous to the Government and should be related directly to the specific topic. These may include such items as innovative instrumentation and/or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with DARPA; unless it is determined that transfer of title to the contractor would be more cost effective than

recovery of the equipment by the DARPA.

- Cost for travel funds must be justified and related to the needs of the project.
- Cost sharing is permitted for proposals under this announcement; however, cost sharing is not required nor will it be an evaluation factor in the consideration of a proposal.
- All subcontractor costs and consultant costs must be detailed at the same level as prime contractor costs in regard to labor, travel, equipment, etc. Provide detailed substantiation of subcontractor costs in your cost proposal. Enter this information in the Explanatory Material section of the on-line cost proposal form. The Supporting Documents Volume (Volume 5) may be used if additional space is needed.

For more information about cost proposals and accounting standards associated with contract awards, see the DCAA publication titled “Audit Process Overview – Information for Contractors” available at <http://www.dcaa.mil>.

**f. Company Commercialization Report (Volume 4)**

The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. The Company Commercialization Report (CCR) is required for Phase I and Direct to Phase II proposals. Please refer to the DoD STTR Program BAA for full details on this requirement. Information contained in the CCR will not be considered by DARPA during proposal evaluations.

**g. Supporting Documents (Volume 5)**

In addition to required DoD documentation and certifications, small businesses may also submit additional documentation to support the Technical Volume (Volume 2) and the Cost Volume (Volume 3) in Volume 5.

**f. Fraud Waste and Abuse (Volume 6)**

The Fraud, Waste and Abuse (FWA) training is required for Phase I and Direct to Phase II proposals. FWA training provides information on what represents FWA in the SBIR/STTR program, the most common mistakes that lead to FWA, as well as the penalties and ways to prevent FWA in your firm. This training material must be thoroughly reviewed once per year. Plan ahead and leave ample time to complete this training based on the proposal submission deadline. Knowingly and willfully making any false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 U.S.C. Sec 1001), punishable by a fine of up to \$10,000, up to five years in prison, or both. Understanding the indicators and types of fraud, waste, and abuse that can occur is critical for the SBIR/STTR awardees’ role in preventing the loss of research dollars.

**Defense Threat Reduction Agency (DTRA)  
DoD 2023.D Small Business Technology Transfer (STTR) Program  
Proposal Submission Instructions**

**August 23, 2023:** Topics issued for pre-release

**September 20, 2023:** DTRA begins accepting proposals

**October 11, 2023:** DSIP Topic Q&A closes to new questions at 12:00 p.m. ET

**October 18, 2023:** Deadline for receipt of whitepapers no later than **12:00 p.m. ET**

**INTRODUCTION**

The Defense Threat Reduction Agency (DTRA) mission is to enable the DoD, the U.S. Government, and International Partners to counter and deter Weapons of Mass Destruction (WMD) Chemical Biological, Radiological, Nuclear) and Improvised Threat Networks. The DTRA STTR program is consistent with the purpose of the Federal SBIR/STTR Program, i.e., to stimulate a partnership of ideas and technologies between innovative small business concerns and through Federal-funded research or research and development (R/R&D).

The approved FY23.D topics solicited for the Defense Threat Reduction Agency (DTRA) Small Business Technology Transfer (STTR) Program are included in these instructions followed by the full topic description. Offerors responding to this Broad Agency Announcement (BAA) must follow all general instructions provided in the related Department of Defense Program BAA and submit proposals by the date and time listed in this release. Specific DTRA requirements that add to or deviate from the DoD Annual Program BAA instructions are provided below with references to the appropriate section of the DoD document.

**Proposers are encouraged to thoroughly review the DoD Annual Program BAA and register for the DSIP Listserv to remain apprised of important programmatic and contractual changes.**

- The DoD Annual Program BAA is located at: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/#announcements>. Be sure to select the tab for the appropriate BAA cycle.
- Register for the DSIP Listserv at: <https://www.dodsirsttr.mil/submissions/login>.

The DTRA Small Business Technology Transfer (STTR) Program is implemented, administered, and managed by the DTRA SBIR/STTR Program Office. Specific questions pertaining to the administration of the DTRA STTR Program and these proposal preparation instructions should be directed to:

Mr. Mark D. Flohr  
DTRA SBIR/STTR Program Manager  
[Mark.D.Flohr.civ@mail.mil](mailto:Mark.D.Flohr.civ@mail.mil)  
Tel: (571) 616-6066

Defense Threat Reduction Agency  
8725 John J. Kingman Road  
Stop 6201  
Ft. Belvoir, VA 22060-6201

For technical questions about specific topic requirements during the pre-release period, contact the DTRA Technical Point of Contact (TPOC) for that specific topic. To obtain answers to technical questions during the formal BAA open period, visit: <https://www.dodsirsttr.mil/submissions/login>. For questions regarding the Defense SBIR/STTR Innovation Portal, contact DSIP Support at [dodsirsupport@reisystems.com](mailto:dodsirsupport@reisystems.com).

Proposals not conforming to the terms of this announcement will not be considered. DTRA reserves the right to limit awards under any topic, and only those proposals of superior scientific and technical



quality as determined by DTRA will be funded. DTRA reserves the right to withdraw from negotiations at any time prior to contract award. The Government may withdraw from negotiations at any time for any reason to include matters of national security (foreign persons, foreign influence or ownership, inability to clear the firm or personnel for security clearances, or other related issues).

Please read the entire DoD announcement and DTRA instructions carefully prior to submitting your proposal as there have been significant updates to the requirements.

This release contains an open topic. As outlined in section 7 of the SBIR and STTR Extension Act of 2022, innovation open topic activities—

- (A) Increase the transition of commercial technology to the Department of Defense;
- (B) Expand the small business nontraditional industrial base;
- (C) Increase commercialization derived from investments of the Department of Defense; and
- (D) Expand the ability for qualifying small business concerns to propose technology solutions to meet the needs of the Department of Defense.

Unlike conventional topics, which specify the desired technical objective and output, open topics can use generalized mission requirements or specific technology areas to adapt commercial products or solutions to close capability gaps, improve performance, or provide technological advancements in existing capabilities.

**A small business concern may only submit one (1) proposal to each open topic.** If more than one proposal from a small business concern is received for a single open topic, only the most recent proposal to be certified and submitted prior to the submission deadline will receive an evaluation. All prior proposals submitted by the small business concern for the same open topic will be marked as nonresponsive and will not receive an evaluation.

#### **OPEN TOPIC GUIDELINES**

DTRA will have one Open Topic (DTRA23D-P01) for the SBIR 2023.D Broad Agency Announcement and will incorporate a two-step Whitepaper process using a Technical Feasibility review approach providing a formal review of the proposed technical merit and feasibility. For those firms wishing to submit a proposal to the Open Topic please follow the instructions below. Firms must clearly identify the unique topic number in their proposal. Additionally, please follow carefully the requirements of Volume 5 as stated in the DoD SBIR Annual Program BAA.

**OPEN TOPIC STEP ONE:** Proposing small business concerns must certify and submit, by the deadline stated in the DoD BAA, the following proposal volumes in DSIP:

1. All Firm-level Forms. On the Defense SBIR/STTR Innovation Portal (DSIP) at <https://www.dodsbirsttr.mil/submissions/>, prepare the Firm-level Forms – Firm Certifications, Audit Information, and Company Commercialization Report (CCR).
2. Supporting Documents (Volume 5). All proposing small business concerns are REQUIRED to submit the following documents to Volume 5:
  - a. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment
  - b. Disclosures of Foreign Affiliations or Relationships to Foreign Countries
  - c. Disclosure of Funding Sources

In addition, a white paper outlining the proposed effort must be uploaded to Volume 5.

- a. White paper format:
  - 3-5 pages/1,000-1,200 words in length;
  - Single-column, single spaced typed lines format on the standard 8 1/2" x 11" paper with 1-inch margins. The header on each page of the whitepaper should contain your company name, topic number, and proposal number assigned by DSIP when the proposal was created. The header may be included in the one-inch margin.
- b. The paper should be a formalized focus on technical merits and feasibility of the project, which defines the specific technical problem and includes the research and development effort to determine the feasibility of the proposed approach to a solution. Any related significant activities by the offeror that relate directly to the proposed effort should be included.

Upon the deadline listed, subject matter experts in the technical field will review the white papers to determine suitability for full proposal submission. DTRA will review the technical merit of the whitepaper considering the Principal Investigator's assumptions, the technical approach, analysis, proposed results/conclusions and potential for commercialization. The DTRA SBIR/STTR Selection Authority will review and approve those white papers selected to move forward.

**OPEN TOPIC STEP TWO:** Offerors whose White Paper were favorably reviewed and selected for proposal submittal will receive, within 20 days, notification from DTRA with instructions for submitting a full Phase I proposal following guidelines provided in the DoD Annual Program BAA and the DTRA 2023.D SBIR Instructions below. Proposals that are submitted without prior notification from DTRA will not receive an evaluation.

#### **PHASE I PROPOSAL GUIDELINES**

The Defense SBIR/STTR Innovation Portal (DSIP) is the official portal for DoD SBIR/STTR proposal submission. Proposers are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Detailed instructions regarding registration and proposal submission via DSIP are provided in the DoD Annual STTR Program BAA.

#### **Technical Volume (Volume 2)**

The technical volume is not to exceed 20 pages and must follow the formatting requirements provided in the DoD Annual STTR Program BAA. Any pages in the technical volume over 20 pages will not be considered in proposal evaluations.

#### **Content of the Technical Volume**

The Technical Volume should cover the following items in the order given below:

**(a) Identification and Significance of the Problem or Opportunity.**

Define the specific technical problem or opportunity addressed and its importance.

**(b) Phase I Technical Objectives.**

Enumerate the specific objectives of the Phase I work, including the questions the research and development effort will try to answer to determine the feasibility of the proposed approach.

**(c) Phase I Statement of Work (including Subcontractors' Efforts)**

- (1) Provide an explicit, detailed description of the Phase I approach. The Statement of Work should 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. The methods planned to achieve each objective or task should be discussed explicitly and in detail. This section should be a substantial portion of the Technical Volume section.
- (2) This BAA may contain topics that have been identified by the Program Manager as research or activities involving Human/Animal Subjects and/or Recombinant DNA. In the event that Phase I performance includes performance of these kinds of research or activities, please identify the applicable protocols and how those protocols will be followed during Phase I. Please note that funds cannot be released or used on any portion of the project involving human/animal subjects or recombinant DNA research or activities until all of the proper approvals have been obtained. **Submitters proposing research involving human and/or animal use are encouraged to separate these tasks in the technical proposal and cost proposal in order to avoid potential delay of contract award.**

**(d) Related Work.**

Describe significant activities directly related to the proposed effort, including any conducted by the principal investigator, the proposing firm, consultants, or others. Describe how these activities interface with the proposed project and discuss any 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 previous work not directly related to the proposed effort but similar. Provide the following:

- (1) Short description,
- (2) Client for which work was performed (including individual to be contacted and phone number), and
- (3) Date of completion.

**(e) Relationship with Future Research or Research and Development**

- (1) State the anticipated results of the proposed approach if the project is successful.
- (2) Discuss the significance of the Phase I effort in providing a foundation for Phase II research or research and development effort.
- (3) Identify the applicable clearances, certifications and approvals required to conduct Phase II testing and outline the plan for ensuring timely completion of said authorizations in support of Phase II research or research and development effort.

**(f) Commercialization Strategy.** Describe in approximately one page your company's strategy for commercializing this technology in DoD (such as a formal DoD Program), other Federal Agencies, and/or private sector markets. Provide specific information on the market need the technology will address and the size of the market. Also include a schedule showing the quantitative commercialization results from this STTR project that your company expects to achieve.

- (g) Key Personnel.** Identify key personnel who will be involved in the Phase I effort including information on directly related education and experience. A concise technical resume of the principal investigator, including a list of relevant publications (if any), must be included (Please do not include Privacy Act Information). All resumes will count toward the page limitations for Volume 2.
- (h) 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. Proposers frequently assume that individuals with dual citizenship or a work permit will be permitted to work on an STTR 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, firms should report any and all individuals expected to be involved on this project that are considered a foreign national as defined in the BAA. You may be asked to provide additional information (e.g., copy of valid passport, visa, work permit, etc.) during negotiations in order to verify the foreign citizen's eligibility to participate on a STTR 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)).
- (i) 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.
- (j) Subcontractors/Consultants.** Involvement of a university or other subcontractors or consultants in the project may be appropriate. If such involvement is intended, it should be identified and described to the same level of detail as the prime contractor costs. A minimum of 40 % the research and/or analytical work in Phase I, as measured by direct and indirect costs, must be conducted by the proposing firm, unless otherwise approved in writing by the Contracting Officer. For Phase II, a minimum of 40 % 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. SBIR efforts may include subcontracts with Federal Laboratories and Federally Funded Research and Development Centers (FFRDCs). A waiver is no longer required for the use of federal laboratories and FFRDCs; however, proposer must certify their use of such facilities on the Cover Sheet of the proposal.

For both Phase I and II, 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.

**(k) Prior, Current, or Pending Support of Similar Proposals or Awards.** If a proposal submitted in response to this BAA 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 and provide the following information. Refer to the instructions provided in the DoD STTR BAA for this requirement.

*Note: If this does not apply, state in the proposal "No prior, current, or pending support for Proposed work"*

### **Cost Volume (Volume 3)**

The Phase I Base amount must not exceed \$167,500. For the Cost Volume, The Defense Threat Reduction Agency requires the use of a Microsoft excel spread sheet which is available on the DSIP portal. Note: The DTRA Cost Volume template will be accessible once the Cost Volume is initiated.

Important: when completing the cost volume, enough information should be provided to allow the agency to understand how you plan to use the requested funds if a contract is awarded. Itemized costs of any subcontract or consultant should be provided to the same level as for the prime small business. If an unsanitized version of costs cannot be provided with the proposal, the Government may request it during negotiations if selected. Refer to the instruction provided in the DoD Annual STTR program BAA for additional details on the content of the Cost Volume. Note: Cost for travel funds must be justified and related to the needs of the project. DTRA does not include any fee on travel costs, so proposal should exclude fee on any travel costs proposed. Please review the updated Percentage of Work (POW) calculation details included in the DoD Annual Program BAA. DTRA will not accept any deviation to the POW requirements.

### **Company Commercialization Report (CCR) (Volume 4)**

Completion of the CCR as Volume 4 of the proposal submission in DSIP is required. Please refer to the DoD Annual STTR Program BAA for full details on this requirement. Information contained in the CCR will not be considered by DTRA during proposal evaluations.

### **Supporting Documents (Volume 5)**

Volume 5 is provided for proposers to submit additional documentation to support the Coversheet (Volume 1), Technical Volume (Volume 2), and the Cost Volume (Volume 3). Further, the SBIR and STTR Extension Act of 2022 mandated several new and important requirements that must be included in the Supporting Documents (Volume 5).

In addition to mandatory/required supporting documents as outlined in the DoD Annual Program BAA, proposers must include the original whitepaper **and** the notification to submit a full proposal within Volume 5. Additional supporting documents can be included in this Volume as well.

All proposing small business concerns are REQUIRED to submit the following documents to Volume 5:

1. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment
2. Disclosures of Foreign Affiliations or Relationships to Foreign Countries
3. Disclosure of Funding Sources

Please refer to the DoD Annual Program BAA for more information. Proposals that do not include the above documents will be deemed noncompliant and will not receive an evaluation.

Any of the following documents may be included in Volume 5 if applicable to the proposal.

1. Letters of Support
2. Additional Cost Information
3. Funding Agreement Certification
4. Technical Data Rights (Assertions)
5. Lifecycle Certification
6. Allocation of Rights

### **Fraud, Waste, and Abuse Training (Volume 6)**

Fraud, Waste and Abuse (FWA) training is required for Phase I proposals. Please refer to the DoD Annual STTR Program BAA instructions for full details.

### **PHASE II PROPOSAL GUIDELINES**

Phase II proposals may only be submitted by Phase I awardees.

The Phase II proposals are best submitted no later than (NLT) 30 days AFTER the end of the 7 month Phase I period of performance.

All STTR Phase II awards made on topics from solicitations prior to FY13 will be conducted in accordance with the procedures specified in those solicitations.

DTRA is not responsible for any money expended by the proposer prior to contract award.

DTRA has established a **40-page limitation** for the Technical Volume submitted in response to its topics. This does not include the Proposal Cover Sheets (pages 1 and 2, added electronically by the DoD submission site), or the Cost Volume, or the Company Commercialization Report. The Technical Volume includes, but is not limited to: table of contents, pages left blank, references and letters of support, appendices, key personnel biographical information, and all attachments.

Further details on the due date, content, and submission requirements of the Phase II proposal will be provided either in the Phase I award or by subsequent notification.

### **Phase II Proposal Instructions**

Each Phase II proposal must be submitted through the Defense SBIR/STTR Innovation Portal by the deadline as specified in the Phase II Proposal Guidelines, or in the Phase I award or subsequent notification. **The format should be similar to Phase I proposal except the Phase II Technical Proposal is limited to 40 pages.** Each proposal submission must contain a Proposal Cover Sheet, Technical Volume, Cost Volume, a Company Commercialization Report (see the appropriate section of the BAA Announcement) and Volume 5. The Commercialization Strategy Volume should be more specific than was required for Phase I.

As indicated in the DoD Annual STTR Program BAA, the CCR is generated by the submission website based on information provided by you through the "Company Commercialization Report" tool.

## **Commercialization Strategy**

See the appropriate section of the DoD STTR Annual 23.D BAA.

## **Phase II Evaluation Criteria**

Phase II proposals will be reviewed for overall merit based upon the criteria specified in this Broad Agency Announcement and will be similar to the Phase I process.

## **Public Release of Award Information**

If your proposal is selected for award, the technical abstract and discussion of anticipated benefits will be publicly released via the Internet. Therefore, do not include proprietary or classified information in these sections. For examples of past publicly released DoD SBIR/STTR Phase I and II awards, visit <https://www.dodsbirsttr.mil/submissions/login>.

## **DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TABA)**

In accordance with the Small Business Act (15 U.S.C. 632), DTRA will authorize the recipient of a Phase I or Phase II STTR award to purchase Discretionary Technical & Business Assistance services, such as access to a network of scientists and engineers engaged in a wide range of technologies, or access to technical and business literature available through on-line data bases, for the purpose of assisting in areas such as:

- making better technical decisions concerning such projects;
- solving technical problems which arise during the conduct of such projects;
- minimizing technical risks associated with such projects;
- developing/ commercializing new commercial products/processes resulting from such projects; and,
- meeting cyber security requirements.

If you are proposing use of Discretionary Technical and Business Assistance (TABA), you must provide a cost breakdown in the Cost Volume under "Other Direct Costs (ODCs)" and provide a one-page description of the vendor you will use and the Technical and Business Assistance you will receive. For the Phase I project, the amount for TABA may not exceed \$6,500 per award. For the Phase II project, the TABA amount may be less than, equal to, but not more than \$50,000 per project. The description should be included in Volume 5 of the proposal.

Approval of Discretionary Technical and Business Assistance is not guaranteed and is subject to review of the contracting officer.

For Discretionary Technical and Business Assistance, small business concerns may propose one or more vendors. Additionally, business-related services aimed at improving the commercialization success of a small business concern may be obtained from an entity, such as a public or private organization or an agency or other entity established or funded by a State that facilitates or accelerates the commercialization of technologies or assists in the creation and growth of private enterprises that are commercializing technology.

All proposals will be evaluated in accordance with the evaluation criteria listed in the DoD Annual STTR Program BAA.

## EVALUATION AND SELECTION

Proposing firms will be notified of selection or non-selection status for a Phase I award within 90 days of the closing date of the BAA. DTRA has a single Evaluation Authority (EA) for all proposals received under this solicitation. The EA either selects or rejects Phase I and Phase II proposals based upon the results of the review and evaluation process plus other considerations including limitation of funds, and investment balance across all the DTRA topics in the solicitation. To provide this balance, a lower rated proposal in one topic could be selected over a higher rated proposal in a different topic. DTRA reserves the right to select all, some, or none of the proposals in a particular topic.

**Notifications.** Following the EA decision, the DTRA SBIR/STTR office will release notification e-mails of selection or non-selection status for a Phase I award within 90 days of the closing date of the BAA. The E-mails will be sent to the addresses provided for the Principal Investigator and Corporate Official. Offerors may request a debriefing of the evaluation of their not selected proposal and should submit this request via email to: [dtra.belvoir.RD.mbx.sbir@mail.mil](mailto:dtra.belvoir.RD.mbx.sbir@mail.mil) and include "STTR 23.D / Topic XX Debriefing Request" in the subject line. Debriefings are provided to help improve the offeror's potential response to future solicitations. Debriefings do not represent an opportunity to revise or rebut the EA decision.

For selected offers, DTRA will initiate contracting actions which, if successfully completed, will result in contract award. DTRA Phase I awards are issued as fixed-price purchase orders with a maximum period of performance of seven-months. DTRA may complete Phase I awards without additional negotiations by the contracting officer or without opportunity for revision for proposals that are reasonable and complete.

### **DTRA Support Contractors**

Select DTRA-employed support contractors may have access to contractor information, technical data or computer software that may be marked as proprietary or otherwise marked with restrictive legends. Each DTRA support contractor performs under a contract that contains organizational conflict of interest provisions and/or includes contractual requirements for nondisclosure of proprietary contractor information or data/software marked with restrictive legends. These contractors require access while providing DTRA such support as advisory and assistance services, contract specialist support, and support of the Defense Threat Reduction Information Analysis Center (DTRIAC). The contractor, by submitting a proposal or entering into this contract, is deemed to have consented to the disclosure of its information to DTRA's support contractors.

The following are, at present, the prime contractors anticipated to access such documentation: ASRC Federal (contract specialist support); Kent, Campa and Kate, Inc. (contract closeout support), ARServices (Program Management Advisory and Assistance Services--A&AS), Systems Planning and Analysis, Inc. (Subject Matter Expertise A&AS), Amentum (A&AS), Polaris Consulting (Small Business Program Support), Seventh Sense Consulting, LLC (Acquisition Support), Savantage Solutions (Accounting and Financial Systems Support); TekSynap Corporation and Kapili Services, LLC (DTRIAC).. This list is not all inclusive (e.g., subcontractors) and is subject to change.

### **Protests.**

Refer to the DoD Annual SBIR Program BAA for procedures to protest the Announcement. As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after Award should be submitted to:



- (a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed to Mr. Herbert Thompson, Contracting Officer, as follows) by obtaining written and dated acknowledgment of receipt from (if mailed letter) Defense Threat Reduction Agency, ATTN: AL-ACQ (Mr. Herbert Thompson), 1680 Texas Street, Kirtland AFB, NM 87117. If Federal Express is used for the transmittal, the appropriate address is: Defense Threat Reduction Agency, ATTN: AL-ACQ (Mr. Herbert Thompson), 8151 Griffin Avenue SE, Building 20414, Kirtland AFB, NM 87117-5669.
- (b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

#### **AWARD AND CONTRACT INFORMATION**

DTRA plans on Phase I projects for a seven (7) month period of performance with six months devoted to the research and the final month for the final report. The award size of the Phase I contract is no more than \$167,500.00 not withstanding a maximum of \$6,500.00 for Discretionary Technical and Business Allowance (TABAs). For a Phase II project, DTRA plans on a 24 month period of performance. The award size of a Phase II contract is no more than \$1,100,000.00 not withstanding a maximum of \$50,000.00 for Discretionary Technical and Business Allowance (TABAs) for the entire project.

#### **ADDITIONAL INFORMATION**

##### **Export Control Restrictions**

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.pmdtc.state.gov/ddtc\\_public](https://www.pmdtc.state.gov/ddtc_public).

The technology within some DTRA topics is restricted under export control regulations including the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR). ITAR controls the export and import of listed defense-related material, technical data and services that provide the United States with a critical military advantage. EAR controls military, dual-use and commercial items not listed on the United States Munitions List or any other export control lists. EAR regulates export-controlled items based on user, country, and purpose. **The offeror must ensure that their firm complies with all applicable export control regulations.**

NOTE: Export control compliance statements found in these proposal instructions are not meant to be all inclusive. They do not remove any liability from the submitter 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.

##### **Cyber Security**

Any Small Business Concern receiving an STTR award is required to provide adequate security on all covered contractor information systems. Specific security requirements are listed in DFARS 252.204.7012, and compliance is mandatory.

**Feedback**

In an effort to encourage participation in, and improve the overall STTR award process, offerors may submit feedback on the STTR solicitation and award process to: [dtra.belvoir.RD.mbx.sbir@mail.mil](mailto:dtra.belvoir.RD.mbx.sbir@mail.mil) for consideration for future STTR BAAs.

**DTRA STTR 23.D Topic Index**  
**Release 1**

DTRA23D-P01

OPEN TOPIC: Replacing User Name/Password Defaults - Alternative User Authentication Methods

DTRA23D-P01 TITLE: OPEN TOPIC: Replacing User Name/Password Defaults - Alternative User Authentication Methods

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Human-Machine Interfaces

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

**OBJECTIVE:** DTRA seeks technologies to replace the user name/password default for authenticating users in various applications and services. The alternatives proposed by the commercial/non-profit team should be compatible with existing and emerging cloud/cloud-capable architectures, reduce the operational overhead for support, increase security over username/password defaults, and be 'user-friendly' to employ at the user interface application.

**DESCRIPTION:** While the principal user authentication used is the Public Key Encryption (PKI) used in tokens (Common Access Cards (CACs), Personal Identity Verification (PIV) cards, etc.), the continued support of username/password authentication in some use cases poses an unwelcome burden to the services provided. Current password implementations require (increasingly longer) passwords containing mixes of upper case, lower case, numerical and special characters, which must be changed every 60 – 90 days without repeating passwords maintained on lists for the previous 10-24 valid passwords. Brute force password cracking approaches have improved success rates employing parallelization of GPU and specialized hardware such as floating-point gate arrays (FPGAs) over the previous attempts using high-powered CPUs. A class of cryptologic techniques called 'memory hard' make these approaches ineffective, and form one of the key specific objectives for evaluation in this proposal. While commercial tokens (e.g. RSA and ORC PKI) are available to the public, they are not suitable for the first responders and foreign partners this topic supports due to various reasons (cost, availability, operational support and management, etc.) While token-based approaches are allowed for consideration, token-less approaches are preferred given the previously stated concerns. The World Wide Web Consortium (W3C) and the Fast IDentity Online (FIDO) Alliance are the principal bodies establishing standards, which various government agencies accept as governing standards. However, the new password-less standard known as FIDO2, endorsed formally by Apple, Google and Microsoft, suffer from two issues in this initial implementation: the three major companies adopting this standard are deploying three incompatible proprietary systems, subjecting users to maintaining multiple credentials per supported website to accommodate devices in each ecosystem. That imposes a burden on users for not only certificate maintenance per site per device, but also for transporting and maintaining that certificate cache securely across their individual devices and platforms. That limitation is not as important a concern for this topic and our use cases, but is critical for future commercial interests. The second current FIDO2 implementation problem is that each user's PKI certificate for each website must be stored in the cache (again multiplied per vendor.) This is a departure from the FIDO token PKI implementation that supports existing CAC/PIV architectures used by government agencies, and is a principal requirement for this proposal topic. In summary, the attributes desired for any proposed solutions for this topic are:

- Solution must be a dramatic improvement in security, operation support and/or user experience for authenticating and managing disadvantaged users to replace username/password baseline
- Encryption method must be a proven 'memory hard' approach and implementation to counter parallelized GPU/FPGA brute force or intelligent guessing to spoof authentication communications

- System must be immune (or highly resistant) to common security compromise strategies; for example, such as ‘man in the middle’ or intercepted data replay attacks.
- System must be standards compliant or compatible, e.g. compliant with or compatible to FIDO2 guidelines
- System must be a vendor independent solution; e.g. must not be constrained to a single vendor’s ecosystem or platform, and not impose large overhead in storing or transferring user credentials across supported systems. This dramatically reduces any migration issues across domains.

#### PHASE I: PHASE I – Proof of Concept:

Analyze alternative approaches, providing at least two options to include summaries of technical feasibility of implementation and integration with existing systems, operations and maintenance for principal alternatives. Demonstrate depth of understanding through a technical report for preferred options illustrating deployment into “as is” authentication systems with PKI as principal authentication method, but using username/PW as the default targeted for replacement by this investigation. The report should include a detailed proposal for the preferred option to implement Phase II prototype development. The prototype should be developed not only to merge into existing DoD or other government agencies’ systems, but should also be flexible enough for commercial deployment, such as small and medium businesses, local first responders, hospitals and clinics, etc.

#### PHASE II: PHASE II - Prototype Development:

Implement a fully functional prototype of the proposed solution, to include server-side added functionality to support the concept to the user side authentication application. The prototype should be amenable to functional and security testing. The prototype should be capable of being implemented in either traditional application-centric or cloud services environments. Documentation should include user, operational and testing information.

PHASE III DUAL USE APPLICATIONS: Implement further improvements that would enhance use of the developed product by the sponsoring office, identify and exploit features that would be attractive for commercial or other applications. Expand upon the documentation developed in Phase II to include improvements implemented in Phase III. Investigate commercialization avenues that could include other government agencies, national labs, research institutes, and defense contractors. Develop a plan to enable successful technology transition at the end of this phase.

#### REFERENCES:

1. Open Web Application Security Project (OWASP) Top Ten, <https://owasp.org/www-project-top-ten/>
2. FIDO Alliance – Authentication Specifications Overview, <https://fidoalliance.org/specifications/>
3. Memory-Hard Functions from Cryptographic Primitives, <https://par.nsf.gov/servlets/purl/10121369>
4. Tradeoff Cryptanalysis of Memory-Hard Functions <https://eprint.iacr.org/2015/227.pdf>

KEYWORDS: Secure authentication, PKI, Hard memory implementation, Simplified Migration