

**Manufacturing Technology Program (ManTech)  
Office of the Secretary of Defense (OSD)  
20.1 Small Business Innovation Research (SBIR)  
Direct to Phase II  
Proposal Submission Instructions**

**INTRODUCTION**

The Manufacturing Technology Program (ManTech) is participating under the OSD SBIR Program on this SBIR 20.1 Broad Agency Announcement (BAA).

Proposers responding to the ManTech topic listed in this Announcement must follow all instructions provided in the DoD SBIR 20.1 Broad Agency Announcement (BAA) posted on the DoD SBIR/STTR website at: <https://sbir.defensebusiness.org/>.

Firms with strong research and development capabilities in science or engineering in any of the topic areas described in this section, and with the ability to commercialize the results, are encouraged to participate. The OSD SBIR Program will support high quality 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.

Objectives of the OSD SBIR 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 and development results. The guidelines presented in the solicitation incorporate and exploit the flexibility of the SBA Policy Directive to encourage proposals based on scientific and technical approaches most likely to yield results important to DoD and the private sector.

CHART 1: Consolidated SBIR Topic Information

| Applicable Topics | Direct to Phase II          |                            |                              |                     |                         |
|-------------------|-----------------------------|----------------------------|------------------------------|---------------------|-------------------------|
|                   | Technical Volume<br>(Vol 2) | Additional Info<br>(Vol 5) | Award Amount                 | *Technical Duration | *Final Reporting Period |
| OSD201-D001       | Not to exceed 10 pages      | N/A                        | Not to exceed \$1,650,000.00 | 18 months           | 1 month                 |

## **DIRECT TO PHASE II**

15 U.S.C. §638 (cc), as amended by NDAA FY2012, Sec. 5106, and further amended by NDAA FY2019, Sec. 854, PILOT TO ALLOW PHASE FLEXIBILITY, allows the Department of Defense to make an award to a small business concern under Phase II of the SBIR program with respect to a project, without regard to whether the small business concern was provided an award under Phase I of an SBIR program with respect to such project. OSD is conducting a "Direct to Phase II" implementation of this authority for this 20.1 SBIR Announcement and does not guarantee Direct to Phase II opportunities will be offered in future Announcements. Each eligible topic requires documentation to determine that Phase I feasibility described in the Phase I section of the topic has been met.

The OSD SBIR Program reserves the right to not make any awards under this Direct to Phase II solicitation. The Government is not responsible for expenditures by the offeror prior to award of a contract. All awards are subject to availability of funds and successful negotiations.

The OSD/ManTech SBIR Direct to Phase II Proposals are different than traditional SBIR Phase I topics and proposals.

Offerors must create a Cover Sheet using the DoD Proposal submission system (follow the DoD Instructions for the Cover Sheet located in section 5.4.a. Offerors must provide documentation that satisfies the Phase I feasibility requirement that will be included as an Appendix to the Phase II proposal. Offerors must demonstrate that they have completed research and development through means other than the SBIR/STTR program to establish the feasibility of the proposed Phase II effort based on the criteria outlined in the topic description.

The Cover Sheet and applicable documentation must be submitted to the DOD SBIR/STTR website submission website at <https://www.dodsbirsttr.mil/submissions/> by no later than 8:00 p.m. EDT on 12 February, 2020.

Offerors are required to provide information demonstrating that the scientific and technical merit and feasibility has been established. OSD will not evaluate the offeror's related Phase II proposal if it determines that the offeror has failed to demonstrate that technical merit and feasibility has been established or the offeror has failed to demonstrate that work submitted in the feasibility documentation was substantially performed by the offeror and/or the principal investigator (PI).

Refer to the Phase I description (within the topic) to review the minimum requirements that need to be demonstrated in the feasibility documentation. None of the feasibility documentation should be based on work performed under prior or ongoing federally funded SBIR or STTR work.

## **PROPOSAL SUBMISSION**

The complete proposal, i.e., DoD Cover Sheet, Technical Volume, and Cost Proposal must be submitted electronically at <https://www.dodsbirsttr.mil/submissions/>. Only one Phase II proposal file can be uploaded to the DoD Submission Site. Ensure your complete technical volume and additional cost volume information is included in this sole submission. The required submission format is Portable Document Format (.pdf). Graphics must be distinguishable in black and white. Please remember to virus-check all proposal submissions.

## **DIRECT TO PHASE II PROPOSAL PREPARATION INSTRUCTIONS AND PROPOSAL REQUIREMENTS**

The Technical Volume is limited to 10 pages, which includes the feasibility documentation. The Cover Sheet, Cost Volume and Commercialization Report do not count toward the 10-page limitation. Technical Volumes that exceed the 10-page limit will be reviewed only to the last word on the 10<sup>th</sup> page. Information beyond the 10<sup>th</sup> page will not be reviewed or considered in evaluating the offeror's proposal. To the extent that mandatory technical content is not contained in the first 10 pages of the proposal, the evaluator may deem the proposal as non-responsive and score it accordingly.

Phase II proposals require a comprehensive, detailed submission of the proposed effort. The period of performance for the OSD Direct to Phase II award is for an 18-month base period for topic OSD201-D001.

OSD Direct to Phase II efforts are awarded up to a maximum value of the dollar amounts listed in Chart 1. Commercial and military potential of the technology under development is extremely important. Proposals emphasizing dual-use applications and commercial exploitation of resulting technologies are sought.

A. Proposal Requirements. A Phase II proposal should provide sufficient information to persuade the OSD that the proposed advancement of the technology represents an innovative solution to the scientific or engineering problem and is worthy of support under the stated criteria. All sections below count toward the page limitation, unless otherwise specified.

B. Proprietary Information. Information constituting a trade secret, commercial or financial information, confidential personal information, or data affecting national security must be clearly marked. It shall be treated in confidence to the extent permitted by law. Be advised, in the event of proposal selection it is likely the Work Plan or Statement of Work (SOW) will be incorporated into the resulting contract, in whole or part, by reference or as an attachment. Therefore, segregate any information to be excluded from public release pursuant to the Freedom of Information Act (FOIA). See Section 5.3 of the DOD Solicitation regarding marking of proprietary information.

C. General Content. Proposals should be direct, concise, and informative. Type shall be no smaller than 11-point on standard 8 ½ x 11 paper, with one-inch margins and pages consecutively numbered. Offerors are discouraged from including promotional and non-programmatic items.

D. Feasibility Documentation

- a) Page length for feasibility documentation is included in the overall 10-page limit. If you have references, include a reference list or works cited list as the last page of the feasibility documentation. This will count towards the page limit.
- b) Work submitted within the feasibility documentation must have been substantially performed by the offeror and/or the principal investigator (PI). Technology in the feasibility documentation is subject to intellectual property (IP) rights, the offeror must provide IP rights assertions. Provide a good faith representation that you either own or possess appropriate licensing rights to all IP that will be utilized under your proposal. Additionally, proposers shall provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research. Please see section 11.5 of the DOD instructions for information regarding technical data rights.

E. **Cost Proposal:** A detailed cost proposal must be submitted. Cost proposal information will be treated as proprietary. Proposed costs must be provided by both individual cost element and contractor fiscal year (FY) in sufficient detail to determine the basis for estimates, as well as the purpose, necessity, and reasonableness of each. This information will expedite award of the resulting contract if the proposal is selected for award.

## **METHOD OF SELECTION AND EVALUATION CRITERIA**

Other factors considered during the selection process include technical approach, appropriate demonstration of feasibility of the technology, equivalent to that resulting from Phase I type efforts; commitment for Phase III funding; possible duplication with other R/R&D; program balance; budget limitations; and potential, if successful, of leading to a product of continuing interest to DoD. Where technical evaluations are essentially equal in merit, and as cost and/or price is a substantial factor, cost to the Government will be considered in determining the successful offeror. OSD anticipates pricing will be based on adequate price competition. The next tie-breaker on essentially equivalent proposals is the inclusion of manufacturing considerations and/or the utilization and/or collaboration with a Department of Defense sponsored Manufacturing Innovation Institute and/or their component members. Phase II evaluations may include on-site assessment of the offeror's research results to date, or of the Contractor's facility, by Government personnel. The reasonableness of proposed costs for the Phase II effort will be examined to determine proposals offering the best value to the Government.

## **CERTIFICATIONS**

In addition to the standard Federal and DoD procurement certifications, the SBA SBIR/STTR Policy Directives require the collection of certain information from firms at the time of award and during the award life cycle. Each firm must provide this additional information at the time of the Phase II 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.

## **TECHNICAL INQUIRIES**

During the Pre-release Period of the DoD 20.1 SBIR Broad Agency Announcement (BAA), any questions should be limited to specific information that improves the understanding of a particular topic's requirements. All questions must be submitted in writing either by email to the TPOC listed or posted in the online SBIR/STTR Interactive Topic Information System (SITIS) – all questions and answers will be released to the general public. All inquiries must include the topic number in the subject line of the e-mail.

After the Pre-release period, all questions must be posted in the online SITIS System. Please follow the instructions in section 4.15.d of the DoD 20.1 SBIR BAA Instructions.

## **PROPOSAL SUBMISSION**

In order to participate in the ManTech SBIR Program, all potential proposers should register on the DoD SBIR/STTR Web site at <https://www.dodsbirsttr.mil/submissions/> as soon as possible. This site contains step-by-step instructions for the preparation and submission of the complete proposal. It is required that all proposers submit their proposal electronically through the DoD SBIR/STTR Proposal Submission Web site at <https://www.dodsbirsttr.mil/submissions/>. For general inquiries or questions about the proposal electronic submission process, contact the DoD SBIR Help Desk at 703.214.1333 (9:00 a.m. to 5:00 p.m. ET).

Proposals shall be submitted in response to the specific ManTech topic identified in the topic description section following these instructions.

ManTech does not provide Direct Technical and Business Assistance (TABAs).

**ManTech SBIR Program Point of Contact:**

General inquiries concerning the DoD ManTech SBIR Program should be addressed to:

Ms. Tracy Frost, OSD ManTech SBIR Program Manager  
[Tracy.g.frost.civ@mail.mil](mailto:Tracy.g.frost.civ@mail.mil)

## **OSD SBIR 20.1 Topic Index**

OSD 201-D001      Applied machine learning optimized cloud environment with end-to-end encryption utilizing identity based security with polymorphic encryption

## OSD SBIR 20.1 Topic Descriptions

OSD 201-D001      TITLE: Applied machine learning optimized cloud environment with end-to-end encryption utilizing identity based security with polymorphic encryption

TECHNOLOGY AREA(S): Electronics

RESEARCH & TECHNOLOGY AREA(S): Cybersecurity

ACQUISITION PROGRAM: Manufacturing Technology Program

OBJECTIVE: A key component of securing data is securely moving it from the environment, which has the most risks into a controlled environment. DoD is seeking development of a that applies machine learning to cloud infrastructure utilization to identify optimization patterns and security anomalies.

DESCRIPTION: The Defense Industrial Base (DIB) needs to implement secure environments to be able to innovate and be highly resistant to modern cyber threats. Utilizing both identity-based encryption in a zero-trust network with advanced encryption algorithms in a single solution would allow the industrial base the advantages of a repeatable model with best-practice configurations in a quickly deployable public cloud environment to operate securely and effectively in conjunction with greatly improved on-premise security and encryption mechanisms.

Security of classified and CUI data is critical to the mission of the DoD. The DIB requires a way to secure their data both in motion and at rest to support the DoD's mission. Current solutions for technology innovators working with the DoD require significant operational complexity, additional manpower, infrastructure, and significant cost which increases time-to-market and often leaves gaps in security of confidential, classified and proprietary data. DoD is seeking data in motion hardware devices, that support the polymorphic encryption and decryption of data. The use of both hardware implementations that support the polymorphic encryption and decryption of data increases the cryptographic strength to protect the data beyond what is readily available in the market today.

PHASE I: Explore and determine the fundamental technology, systems integration, and commercialization limitations in implementing and distributing the technology. Phase I deliverables are a final report and proof of concept demonstration. The final report should describe the analysis of access and utilization patterns over time as an indication of ways to optimize spending and identify behaviors that might be abnormal which could trigger alerts or take immediate actions based on predefined playbooks.

PHASE II: Develop a fully operational proof-of-concept demonstration of the key components and functional systems and/or prototype along with all design documents and complete specifications along with documentation of committed sources and service providers for the fabrication of the device to be produced in Phase II. Develop software drivers and libraries with built-in encryption to secure data going to/from a popular database and within file systems with polymorphic encryption. Demonstrate capability to determine what data is stored where via automated assessment. Phase II is expected to collaborate with relevant DOD Manufacturing Innovation Institute or Manufacturing USA Manufacturing Innovation Institute and/or their component members as a resource to develop manufacturing readiness of the proposed solution.

For Direct to Phase II topics, OSD ManTech is expecting that the submitting firm will have:

- Determined the technical feasibility of developing the encryption device.
- Demonstrated ability of critical infrastructure modeling and simulation approaches.

**FEASIBILITY DOCUMENTATION:** Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e. the small business must have performed Phase I-type research and development related to the topic, but from non-SBIR funding sources) and describes the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above. Documentation should include all relevant information including, but not limited to: technical reports, test data, prototype designs/models, and performance goals/results. Work submitted within the feasibility documentation must have been substantially performed by the offeror and/or the principal investigator (PI).

**PHASE III DUAL USE APPLICATIONS:** Refine and mature cyber-physical models relating to installation management and manufacturing technologies, as well as integration of analytics into operational cyber defenses for government or commercial payors.

**KEYWORDS:** cyber security, data analytics, critical infrastructure