

DEPARTMENT OF THE ARMY
DoD 24.4 Small Business Innovation Research (SBIR) Annual BAA
Release 11
Proposal Submission Instructions

INTRODUCTION

Where big ideas come to life. The Army SBIR and STTR programs align innovative small businesses with critical U.S. Army priorities to turn over game-changing solutions to our most critical customer – the Soldier.

Proposers responding to a topic in this BAA must follow all general instructions provided in the Department of Defense (DoD) SBIR Program BAA. Army 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.defensesbirstr.mil/SBIR-STTR/Opportunities/#announcements>. Be sure to select the tab for the appropriate BAA cycle.
- Register for the DSIP Listserv at: <https://www.dodsbirstr.mil/submissions/login>.

Specific questions pertaining to the administration of the Army SBIR Program and these proposal preparation instructions should be directed to: Dr. Ann Kathryn Rockwell at ann.k.rockwell.civ@army.mil.

06 March 2024: Topic issued for pre-release

27 March 2024: Army begins accepting proposals via DSIP

10 April 2024: DSIP Topic Q&A closes to new questions at 12:00 p.m. EST

24 April 2024: Deadline for receipt of proposals no later than 12:00 p.m. EST

From **06 March 2024 to 26 March 2024**, this topic is issued for pre-release with the names of the topic authors. During the pre-release period, proposing firms have an opportunity to contact topic authors through <https://calendly.com/ak-rockwell-aal/quantum-hardening> to schedule a time to ask technical questions about the topic. Questions should be limited to specific information related to improving the understanding of the topic's requirements. Proposing firms may not ask for advice or guidance on solution approach and you may not submit additional material to the topic author. If information provided during an exchange with the topic author is deemed necessary for proposal preparation, that information will be made available to all parties through the DSIP Topic Q&A module.

Once the Army begins accepting proposals on **27 March 2024**, no further direct contact between proposers and topic authors is allowed unless the topic Author is responding to a question submitted during the pre-release period. However, proposers may submit written questions through the DSIP topic Q&A module at <https://www.dodsbirstr.mil/submissions/login>. The DSIP Topic Q&A for this topic opens on **06 March 2024**, and closes to new questions on **10 April 2024 at 12:00 p.m. EST**. Once the BAA closes to proposal submissions, no communication of any kind with the topic author or through Topic Q&A regarding your submitted proposal is allowed.

Deadline for Receipt: Proposals must be **completely** submitted no later than **12:00 p.m. EST** on **24 April 2024**. Proposals submitted after 12:00p.m. EST will not be evaluated. The final proposal

submission includes successful completion of all firm-level forms, all required volumes, and electronic corporate official certification.

DIRECT-TO-PHASE II 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 SBIR Program BAA.

Technical Volume (Volume 2)

The technical volume is not to exceed 15 pages and an optional 10-slide deck (as part of Volume 5) and must follow the formatting requirements provided in the DoD SBIR Program BAA.

Content of the Technical Volume

Detailed Phase II proposal instructions can be found at: <https://aal.army/assets/files/pdf/sbir-direct-phase-2-template.pdf>

Cost Volume (Volume 3)

The Direct to Phase II amount must not exceed \$1 million for a 16-month period of performance (PoP). Costs must be clearly identified on the Proposal Cover Sheet (Volume 1) and in Volume 3.

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 SBIR Program BAA for full details on this requirement. Information contained in the CCR will be considered during proposal evaluations.

Supporting Documents (Volume 5)

All proposing small businesses 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 Program BAA for more information.

Proposers can submit an optional 10-slide deck in Volume 5: Supporting Documents. The slide deck can contain information on the technical approach, the team, commercialization plans, or relevant technology/research the proposers have developed, and it should contain additional/complementary information to the technical volume. If a proposer elects to submit a slide deck, its information will be used in the evaluation process. A sample slide deck template is located here:

<http://aal.army/assets/files/pdf/sbir-optional-slide-template.pdf>.

EVALUATION AND SELECTION

All proposals will be evaluated in accordance with the evaluation criteria listed in the DoD SBIR Program BAA. The Army will conduct an evaluation of each responsive, timely, eligible proposal in accordance with the evaluation criteria listed in the DoD Program BAA. It is the policy of the Army to ensure equitable and comprehensive proposal evaluations based on the evaluation criteria and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals.

As previously stated herein, timeliness, responsiveness, and eligibility will be assessed upon initial screening, during evaluation, and after selection. Proposals that do not comply with the instructions and requirements detailed in this document, the DoD Program BAA, or the corresponding topic posting (including the research objective(s)), will be considered ineligible, nonresponsive, untimely, or non-conforming and therefore will not be evaluated or considered for award.

Using the evaluation criteria, the Government will evaluate each responsive, timely, eligible proposal in its entirety, documenting the strengths and weaknesses relative to each evaluation criterion: technical merit, commercialization, and team. 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 this corresponding opportunity.

Selected proposals are those determined to be the most advantageous to the Government, consistent with instructions and evaluation criteria specified in the DoD Program BAA, the component-specific instructions herein, the corresponding topic posting, and availability of funding.

Proposing firms will be notified of selection or non-selection status for a Phase II award within 90 days of the closing date of the topic. The notification will be sent to the Corporate Official listed on the proposal cover sheet from the Army SBIR Program Office mailbox. The Army promotes transparency regarding the technical evaluation for all Army SBIR proposals. The Army will provide a technical evaluation narrative to the proposer in accordance with the SBA Policy Directive, Appendix I, paragraph 4. The selection decision notice contains instructions for retrieving the technical evaluation narrative.

Proposers must not regard the notification email (selection decision notice) as an authorization to commit or expend funds. After the Army SBIR Office has recommended a proposal for award, a Government Contracting Officer may contact the proposer to discuss and request additional information required for award. This may include representations and certifications, certified or other than certified cost data, subcontracting plan for small businesses, and/or other information as applicable to the proposed award. Proposers must not regard these communications as an authorization to commit or expend funds. Unless a Government Contracting Officer signs the award document (i.e. contract), no obligations to provide funding are made. The Government may reject the proposal or cancel the contract action at any time.

If signed by the Government Contracting Officer, the award document is the official and authorizing instrument (i.e. contract). The anticipated period of performance start date will be determined at time of award. The Contracting Officer will email the signed, authorizing award instrument to the principal investigator (PI) and/or an authorized organization representative.

Refer to the DoD SBIR Program BAA for procedures to protest the Announcement. As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after award should be submitted to: Mr. Christopher Justice, christopher.d.justice4.civ@army.mil.

AWARD AND CONTRACT INFORMATION

Please refer to the DoD Program BAA for detailed information regarding SBIR/STTR phase structure and flexibility.

END

Army SBIR 24.4 Topic Index

Release 11

A244-018 Tactical Implementation of Quantum Hardening

A244-018

TITLE: Tactical Implementation of Quantum Hardening

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Quantum Science; Advanced Computing and Software; Integrated Network System of Systems

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 that foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Develop a tactical implementation of quantum hardening for Army systems on a tactical network in order to identify potential vulnerabilities, remove or remediate, and maintain security against quantum cyber threats.

DESCRIPTION: The Army is interested in software to aid in future-proofing Army networks related to quantum computing vulnerabilities. The performer will prototype a representative software suite at technology readiness (TRL) level 6, demonstrated in relevant environments. This may involve analyzing Army networks to determine the required actions for the transition to a quantum-safe architecture and investigating critical networks necessary for the prioritization and eventual scaled migration to quantum-resistant cryptography. The ideal solution is a holistic suite of quantum-resistant security applications that can help organizations assess their cryptographic security posture, implement quantum-resistant cryptographic algorithms with minimal impact, and provide a crypto-agile framework to protect sensitive data from adversarial quantum computer attacks. Examples of solutions that will be considered include prototype software with and/or supporting the following capabilities, to be demonstrated on simulated and/or relevant government furnished hardware/network systems:

- Integrate with existing Army networks (limited on premises servers, limited bandwidth, existing architecture for configurations cyber hardened)
- Discovery and cataloging of cryptographic protocols, ciphersuites, and keys across networks
- Real-time cryptographic monitoring
- Identify vulnerabilities and algorithms that do not adhere to Army standards
- Self-repair/remediation capabilities for network certificates identified via Army tactical network with systems such as Joint Battle Command-Platform (JBC-P), Deployable Defensive Cyberspace (DDS), and the Tactical Radio (TR) application
- Prepare to implement solutions on the Upper Tactical Internet and the Lower Tactical Internet in terms of bandwidth, configuration, VMs, on-premise servers, etc.

PHASE I: Only Direct to Phase II (DP2) proposals will be accepted for this topic. DP2 proposals must provide documentation to substantiate that the scientific and technical merit and feasibility (listed in the following paragraph) are met, and the proposals must describe potential commercial applications of the solution. The provided documentation should contain all relevant information including, but not limited to, technical reports, test data, prototype designs/models, and performance goals/results.

DP2 proposals should build on the design formulated according to Phase I requirements: Design a preliminary solution for tactical quantum hardening of Army networks. Preliminary design should

describe a cryptographic inventorying and management software or software suite or how to go about developing it.

PHASE II: Develop, build, and demonstrate a prototype of the concept advanced during Phase I. Prototypes should be capable of integration with existing Army systems and/or newly-developed systems. Phase II deliverables include a demonstration and delivery of a Technology Readiness Level (TRL) 6 prototype for further Army evaluation, as well as monthly and final reports detailing design and performance analysis of the prototype.

The performer will demonstrate the as-is technology at NetModX 2024 at Fort Dix, NJ to receive feedback on how to optimize the technology. This event is anticipated to take place in September 2024.

The performer will have access to a lab with tactical network capabilities and associated devices in order to iterate between NetModX events. This will be facilitated by Combat Capabilities Development Command (DEVCOM), Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center. Plan to travel once per month to a site near Aberdeen Proving Ground, MD. If permitted, the government will provide interactive space to collaborate under the CyberVAN program (<https://www.peratonlabs.com/cybervan.html>). Plan to travel monthly within your estimate to Aberdeen Proving Ground and Fort Dix.

A final demonstration will be conducted at NedModX 2025, estimated to take place in September 2025. For all demonstrations, the necessary government furnished equipment (GFE) will be provided.

Awardees may also be eligible for Phase IIb award after completion of Phase II period of performance. Phase IIb can extend the period of performance with additional funding and additional matching opportunities to finish building out solutions with the stakeholders' discretion.

PHASE III DUAL USE APPLICATIONS: The objective of Phase III, where appropriate, is for the small business to pursue commercialization objectives through the effort. Companies will engage in laboratory or operational testing as required. Phase III deliverables include system-level integration, technical data package, installation documentation, and system-level prototype for demonstration and Government-sponsored testing.

REFERENCES:

1. <https://www.nist.gov/programs-projects/post-quantum-cryptography>

KEYWORDS: Quantum computing; quantum hardening; cryptography