

DEPARTMENT OF THE ARMY
DoD 23.4 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 turnover 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 23.4 Program BAA. **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.dodsirsttr.mil/submissions/login>.

Army 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 Army SBIR Program and these proposal preparation instructions should be directed to:

- A234-016 – Mr. Michael Borzcik at michael.borzcik.civ@aal.army

May 11, 2023: Topic issued for pre-release

June 1, 2023: Army begins accepting proposals via DSIP

June 14, 2023: DSIP Topic Q&A closes to new questions at 12:00 p.m. ET

June 27, 2023: Deadline for receipt of proposals no later than 12:00 p.m. ET

From **May 11, 2023 to May 31, 2023**, this topic is issued for pre-release. During the pre-release period, proposing firms have an opportunity to contact topic authors through the links provided below 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.

- A234-016 – <https://calendly.com/ak-rockwell-aal/lethal-payloads-for-suas>

Once the Army begins accepting proposals on **June 1, 2023**, 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.dodsirsttr.mil/submissions/login>. The DSIP Topic Q&A for this topic opens on **June 1, 2023** and closes to new questions on **June 14, 2023 at 12:00PM ET**. Once the BAA closes to proposal submission, 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.** ET, on **June 27, 2023**. Proposals submitted after 12:00 p.m. ET will not be evaluated. The final proposal submission includes successful completion of all firm level forms, all required volumes, and electronic corporate official certification.

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.

Topics included in this release are accepting Direct to Phase II (DP2) proposals only. Proposers interested in submitting a DP2 proposal in response to these topics must provide documentation to substantiate that the scientific and technical merit and feasibility described in the Phase I section of the topic has been met and describes the potential commercial applications. 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 proposer and/or the Principal Investigator.

The Army will not evaluate the proposer's related Phase II proposal if it determines that the proposer has failed to demonstrate that technical merit and feasibility has been established or the proposer has failed to demonstrate that work submitted in the feasibility documentation was substantially performed by the proposer and/or the PI.

Feasibility documentation cannot be based upon any prior or ongoing federally funded SBIR or STTR work and DP2 proposals MUST NOT logically extend from any prior or ongoing federally funded SBIR or STTR work.

Format of Technical Volume (Volume 2)

The Technical Volume must include two parts, the Feasibility Documentation and the Technical Proposal.

The length of the Feasibility Documentation is not to exceed 5 pages and the length of the Technical Proposal is not to exceed 10 pages. Any pages submitted in excess of these limits will not be considered in proposal evaluations.

Content of the Feasibility Documentation (Volume 2a)

The content of the Feasibility Documentation Proposers should substantiate that the scientific and technical merit and feasibility described in the Phase I section of the topic has been met and describes the potential commercial applications. 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 proposer and/or the Principal Investigator.

Content of the Technical Proposal (Volume 2b)

Direct to Phase 2 (DP2) proposals should follow the following format:
<https://aal.army/assets/files/pdf/sbir-direct-phase-2-template.pdf>.

Cost Volume (Volume 3)

Topic A234-016 will accept DP2 proposals for a cost up to \$500,000 for a 9 month period of performance.

Proposers are required to use the Cost Proposal method as provided on the DSIP submission site. The Cost Volume (and supporting documentation) DOES NOT count toward the page limit of the Technical Volume.

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 not be considered during proposal evaluations.

Supporting Documents (Volume 5)

In addition to the Volume 5 requirements outlined in the DoD Program BAA, proposers can submit an optional slide deck of 10 slides 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>.

DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TABA)

The Army will not provide Technical and Business Assistance (TABA) for these topics.

EVALUATION AND SELECTION

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. 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 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 via email of selection or non-selection status for a Phase I or Direct to 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 in order 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.

AWARD AND CONTRACT INFORMATION

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

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Release 11

A234-016 Lethal Payloads for Small Unmanned Aerial Systems

A234-016 Lethal Payloads for Small Unmanned Aerial Systems

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Air Platforms

OBJECTIVE:

Develop a lethal payload capability that can be employed on a Small Unmanned Aerial System (sUAS). The capability should employ munitions (ammunition or explosives) that are currently in the U.S. inventory and attach to one or more sUAS platforms on the Defense Innovation Unit (DIU) Blue UAS Cleared List, excluding the WingtraOne platform.

DESCRIPTION:

The ability to employ lethal payloads on existing sUAS is vital for future Army combat operations. Lethal payloads for sUAS will provide capabilities at the small unit level beyond the current use of sUAS, which focuses only on intelligence, surveillance, and reconnaissance (ISR) capabilities. Successful development of lethal payloads for sUAS would advance the U.S. Army's modernization priorities and increase the lethality of its Infantry Brigade Combat Teams (IBCTs).

Currently only one sUAS platform is fielded at the small unit level: the Short Range Reconnaissance (SRR) platform, fielded by Program Executive Office (PEO) Aviation and referred to commercially as the Skydio X2D. The SRR was developed to give infantry platoons a UAS platform for intelligence, surveillance, and reconnaissance. Under the SRR program there is currently no capability to employ the system as a lethal asset.

The Defense Innovation Unit (DIU), under the Blue UAS program, has worked with vendors to vet and scale commercial UAS technology for the Department of Defense (DoD). This program consists of five lines of effort that curate, maintain, and improve a roster of policy-approved commercial UAS which suit the diverse needs of DoD users. This effort currently has vetted 16 different platforms for DoD use.

Government labs are currently undertaking efforts to develop lethal UAS. These efforts include DEVCOM Armament Center's latest payload for the SRR platform, which delivers an M67 fragmentation grenade as the munition.

The design goals of this effort are the development of modular lethal payloads that can be employed by the current Program of Record SRR and/or any of the platforms on the DIU Blue UAS Cleared List excluding the WingtraOne platform.

These payloads should:

- Be attachable by Soldiers in the field
- Employ ammunition or explosives currently in the Government inventory, allowing units to order through standard channels
- Increase the lethal capability beyond that of the M67 fragmentation grenade-based solution currently in development
- Integrate into the selected platform
- Operate on the platform controller or include a simple system to initiate the payload (long term desire is for ATEK integration)
- Be able to pass applicable safety testing
- Be able to be made safe and dismounted from the platform if not detonated

Primary obstacles to overcome for successful operation of lethal payloads for sUAS is the integration and control of the payload to the selected platform while maintaining safe flight of the platform.

Cost should be considered in the SBIR proposals.

PHASE I:

Design a preliminary lethal payload for the Short Range Reconnaissance (SRR) platform or any sUAS platform from the DIU Blue UAS Cleared List, excluding the WingtraOne platform. Preliminary design should describe the selected sUAS platform(s) and munition(s), consist of a concept for physical attachment and electrical and software integration, and a description of the method of fire control.

This topic is accepting Direct to Phase II (DP2) proposals only. Proposers interested in submitting a DP2 proposal must provide documentation to substantiate that the scientific and technical merit and feasibility described in above has been met and describes the potential commercial applications. Documentation should include all relevant information including, but not limited to: technical reports, test data, prototype designs/models, and performance goals/results.

PHASE II:

Refine the preliminary design, produce, and deliver a prototype at Technology Readiness Level (TRL) 5 of a lethal payload for a sUAS platform. The system refinement should include mechanical and electrical integration into the selected platform, fire control, and targeting. Required Phase II deliverables include all necessary components (hardware and software) to integrate the payload to the platform, attachment of munitions, safe handling procedures for munitions, arming munitions, targeting or aiming, delivery of munition, making system safe, returning to operator, and removal of munitions and payload to be utilized again if not employed. The prototype will be demonstrated using a simulated, dummy, or inert munition at a vendor-provided, government-approved location to evaluate performance. The performer will provide the sUAS platform necessary to conduct the demonstration but is not required to deliver the sUAS platform to the Government. Additionally, the performer will deliver monthly progress reports describing all technical challenges, technical risk, and progress against the schedule, and a final technical report.

PHASE III:

The objective of Phase III, where appropriate, is to transition the technology to a U.S. Army Combat Capabilities Development Command (DEVCOM) lab for further development, or to a Program Executive Office (PEO) for potential acquisition pathways. Phase III goals may include live-fire demonstration of the technology at an appropriate test range, testing to applicable safety and airworthiness standards, end user touchpoints, and development of operator, maintenance, and safety instructions and training procedures.

KEYWORDS:

UAS, sUAS, Small Unmanned Aerial Systems, Blue UAS, SRR, Lethal Payloads

REFERENCES:

1. DIU Blue UAS Cleared Drone List, <https://www.diu.mil/blue-uas-cleared-list>
2. DIU UAS Policy Guidance, <https://www.diu.mil/blue-uas-policy>
3. U.S. Army Weapon Systems Handbook, <https://asc.army.mil/docs/wsh2/2020-2021-wsh.pdf>

TPOCs:

1. Mr. Daniel Hilty, Army Applications Laboratory
2. Mr. Michael Borzcik, Army Applications Laboratory
3. Dr. Ann Katheryn Rockwell, Army Applications Laboratory

Please register at <https://calendly.com/ak-rockwell-aal/lethal-payloads-for-suas> to schedule a call with our technical points of contact during the pre-release period.