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Strategic Capabilities Office (SCO)
21.3 Small Business Innovation Research (SBIR)
Proposal Submission Instructions

INTRODUCTION

The Strategic Capabilities Office (SCO) is participating under the OSD SBIR Program on this SBIR 21.3 Broad Agency Announcement (BAA).

Proposers responding to SCO topics listed in this Announcement must follow all instructions provided in the DoD SBIR 21.3 Broad Agency Announcement (BAA) posted on the DoD SBIR/STTR website at: https://rt.cto.mil/rtl-small-business-resources/sbir-sttr/.

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 SCO 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 SCO 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.

DESCRIPTION OF THE SBIR THREE-PHASE PROGRAM

Phase I is to determine, insofar as possible, the scientific or technical merit and feasibility of ideas submitted under the SBIR Program. The SCO contract period of performance for Phase I will be six (6) months, and the award will not exceed $250,000.

Proposals are evaluated using the Phase I evaluation criteria, in accordance with the DoD 21.3 SBIR Program Announcement. Proposals should concentrate on research and development which will significantly contribute to proving the scientific and technical feasibility of the proposed effort, the successful completion of which is a prerequisite for further DoD support in Phase II. The measure of Phase I success includes technical performance toward the topic objectives and evaluations of the extent to which Phase II results would have the potential to yield a product or process of continuing importance to DoD and the private sector.

Subsequent Phase II awards will be made to firms on the basis of results from the Phase I effort and the scientific and technical merit of the Phase II proposal in addressing the goals and objectives described in the topic. Phase II awards will typically cover two to five person-years of effort over a period generally not to exceed 24 months (subject to negotiation), with a dollar value up to $1.5 million. Phase II is the principal research and development effort and is expected to produce a well-defined deliverable prototype or process. A more comprehensive proposal will be required for Phase II. In order for a small business to be considered for a Phase II award, the firm must be a recipient of a Phase I award under this topic.

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All Phase I awardees will be allowed to submit a Phase II proposal for evaluation and selection. The details on the due date, content, and submission requirements of the Phase II proposal will be provided by the awarding technical point of contact and/or the contracting officer by subsequent notification. If executed, Phase II and III may require access to classified information.

DoD is not obligated to make any awards under Phase I, II, or III. For specifics regarding the evaluation and award of Phase I or II contracts, please read the DoD Solicitation Instructions very carefully. Phase II proposals will be reviewed for overall merit based upon the criteria in the DoD 21.3 SBIR Program Announcement.

These instructions are for Phase I proposals only. Any proposal submitted under prior SBIR solicitations will not be considered under this solicitation; however, offerors who were not awarded a contract in response to a particular topic under prior SBIR solicitations are free to update or modify and submit the same or modified proposal if it is responsive to any of the topics listed in this section.

TECHNICAL INQUIRIES

During the Pre-release Period of the DoD 21.3 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 sbir@sco.mil, or posted in the online DSIP Topic Q&A – 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.

During the Open Period, all questions must be posted in the online DSIP Topic Q&A.

PROPOSAL SUBMISSION

In order to participate in the SCO 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 atDoDSBIRSupport@reisystems.com (9:00 a.m. to 5:00 p.m. ET).

SCO will only accept proposals that are submitted through the on-line submission site. The submission site does not limit the overall file size for each electronic proposal; however, there is a 10-page limit for the Technical Volume. File uploads may take a great deal of time depending on your file size and your internet server connection speed. If you wish to upload a large file, it is highly recommended that you submit your proposal early and prior to the deadline submittal date, as the last day is heavily trafficked. You are responsible for performing a virus check on each Technical Volume file to be uploaded electronically. The detection of a virus on any submission may be cause for the rejection of the proposal.

Proposals shall be submitted in response to a specific topic identified in the topic description section following these instructions. The topics listed are the only topics for which proposals will be accepted.

A complete proposal consists of the following proposal volumes:

Volume 1: Proposal Cover Sheet

Volume 2: Technical Volume 10 Pages

Volume 3: Cost Volume (up to $250,000 for a 6-month period of performance)

Volume 4: Company Commercialization Report (CCR). The CCR allows companies to report funding outcomes resulting from prior SBIR and STTR awards. Information contained in the CCR will not be considered during proposal evaluations.

Volume 5: Supporting Documents

a. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Attachment 1) (REQUIRED)
b. Foreign Ownership or Control Disclosure (Proposers must review Attachment 2: Foreign Ownership or Control Disclosure to determine applicability.)

Volume 6: Fraud, Waste and Abuse Training (REQUIRED)

Refer to the DoD SBIR Program BAA for full details on proposal requirements and preparation.

SCO SBIR PROGRAM POINT OF CONTACT:
Inquiries concerning the SCO SBIR Program should be addressed to sbir@sco.mil.

PROTEST PROCEDURES
Refer to the DoD SBIR Program Announcement 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: sbir@sco.mil

NOTIFICATION OF SELECTION OR NON-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. The individual named as the Corporate Official on the Proposal Cover Sheet will receive an email for each proposal submitted from sbir@sco.mil with their official notification of proposal selection or non-selection.

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SCO SBIR 21.3 Phase I Topic Index

SCO213-001 Novel Spacecraft Power Supply

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SCO 213-001 TITLE: Novel Spacecraft Power Supply

OUSD (R&E) MODERNIZATION PRIORITY: Space

TECHNOLOGY AREA(S): Space Platform

OBJECTIVE: Develop alternative power sources for spacecraft to provide operational or design improvements over traditional solar power systems.

DESCRIPTION: The DoD is seeking functional alternative power source options to enable novel spacecraft designs and payload operations. The power source must be scalable to support ESPA-class spacecraft variants (1/4, 1/2, full ESPA, ESPA-Grande) and must be either mass-efficient compared to traditional power systems, enable a significantly unique design, distinct application, or both. Power source concepts must be capable of operating for at least 1 year in common orbits and in space environment conditions (low earth orbit, geosynchronous earth orbit, transfer orbit, in vacuum, in dynamic thermal conditions, etc.). Power systems may be fully standalone or auxiliary in expected function (e.g., intended to meet all spacecraft power needs for the entirety of the satellite's operational life, act as an auxiliary power source to a traditional system, provide power to a particular payload only and not an entire spacecraft, etc.).

Proposals must describe in detail how the proposed solution will provide power to a notional spacecraft, what unique applications are enabled by the proposed technology (if any) and/or how this technology would support more standard applications, and what notable challenges (radiation hardening, form factor, technical nascence, etc.) will be addressed during this SBIR program. As necessary for lower technical readiness level technologies, proposals should provide academic or similar reference materials to verify the viability of the foundational mechanics involved with the power source.

PHASE I: This phase will develop the preliminary power source design for space qualification, model scalable power performance, and investigate unique spacecraft design considerations necessary to utilize the power source. At the close of this SBIR phase, awardees will deliver to the government:

1. Study report detailing power system conceptual design, expected and scaled (ie, cubesat, ½ ESPA, ESPA Grande classes, etc.) power system performance, (if any) refined enabled application concepts based on design maturation, and preliminary spacecraft design considerations and recommendations that address issues identified within the proposal and/or during the study itself. This report will be delivered electronically and results will be summarized during a study outbrief.
2. Schedule and Cost Estimation for development, manufacture, and delivery of 3 prototype power source test units to inform Phase 2 planning and determinations

PHASE II: Should a Phase 2 follow-on effort be awarded, Phase II is expected to develop a preliminary spacecraft prototype design that incorporates the power source design developed in Phase 1, will deliver power source prototype test units, and then, as required, support and/or execute a series of ground space-environment testing to verify space environment functionality of the power source. Phase 1 work should be accomplished with this goal in mind.

PHASE III DUAL USE APPLICATIONS: Developed alternative power sources could enable both commercial and military applications that are not suited for or would be otherwise limited by solar power systems. Applicable dual use applications could include emergency or on-demand spacecraft power supply, more mass-efficient spacecraft design and manufacture, and novel payload support.

REFERENCES:

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1. ESPA user guide (ref for sizing/scaling in SBIR): https://elibrary.gsfc.nasa.gov/_assets/doclibBidder/tech_docs/Moog_ESPA_UsersGuide%20-%20Copy.pdf;
2. NASA power supply roadmap: https://www.nasa.gov/sites/default/files/atoms/files/2015_nasa_technology_roadmaps_ta_3_space_power_energy_storage.pdf

KEYWORDS: Electric Power System, Satellite, Spacecraft, Power, Power Source, Solar Power, Solar Array, Battery