Defense Advanced Research Projects Agency (DARPA)
DoD 24.4 Small Business Innovation Research (SBIR) Annual Broad Agency Announcement (BAA)
Proposal Submission Instructions Release 2

INTRODUCTION

DARPA's mission is to make strategic, early investments in breakthrough science and technology that will have long-term positive impacts on our national security. As part of this mission, DARPA makes high-risk, high-reward investments in science and technology that have the potential to disrupt current understandings and/or approaches. 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 Small Business Technology Transfer (STTR) programs. Small businesses are critical for developing technology to support national security. Proposers are encouraged to consider whether the Research/Research and Development (R/R&D) being proposed to Department of Defense (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. DARPA offers free resources through DARPAConnect to help potential performers navigate DARPA, including "Tips for DARPA Proposal Success". Join DARPAConnect at www.DARPAConnect.us to leverage on-demand learning and networking resources.

Proposers responding to a topic in this BAA must follow all general instructions provided in the DoD SBIR Program BAA. DARPA requirements in addition to or deviating from the DoD Program BAA are provided in the instructions below. All DARPA SBIR and STTR proposals must be submitted electronically through the Defense SBIR/STTR Innovation Portal (DSIP) as described in the Proposal Preparation and Submission sections of these instructions. It is recommended that firms register as soon as possible upon identification of a proposal opportunity to avoid delays in the proposal submission process. Proposers are encouraged to submit proposals as early as possible to avoid unexpected delays due to a high volume of traffic during the final hours before a BAA closes. *DARPA is unable to accept any late proposals.*

Proposers are encouraged to thoroughly review the DoD Program BAA and register for the Defense SBIR/STTR Innovation Portal (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. 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 by the deadline listed below.

The following dates apply to this DARPA Topic release:

May 15, 2024: Topics issued for pre-release
May 30, 2024: Topics open; DARPA begins accepting proposals via DSIP
June 25, 2024: Deadline for technical question submission
July 02, 2024: 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

White Paper & Slide Deck Proposal

Topic Number	Phase I			
	Technical Volume		Award Amount	Period of Performance (PoP)
	White Paper	Slide Deck		
HR0011SB20244-02	15 pages	5 pages	$250,000	6 months

Note: Please see Appendix A, section d for complete instructions on the White Paper/Slide Deck technical volume format.

Technical Volume (Volume 2) – White Paper & Slide Deck Format
The white paper shall not exceed 15 pages, and the slide deck shall not exceed 5 pages. For information on the content of these elements of the technical proposal and the commercialization strategy, please see Attachment A: DARPA Phase I Instructions.

Content of the Technical Volume
Proposers should refer to the DARPA Phase I Proposal Instructions, provided in Appendix A, and the SBIR/STTR Phase I template on the DARPA Small Business site (https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program), under SBIR/STTR BAA FORMS & TEMPLATES.

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) under SBIR/STTR BAA FORMS & TEMPLATES.

Content of the Cost Volume
Proposers should refer to the DARPA Phase I Proposal Instructions, provided in Appendix A and on the DARPA Small Business site (https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program) under SBIR/STTR BAA FORMS & TEMPLATES.

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 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 Introduction for required certifications that must be included in

Volume 5. For additional information, see the SBIR 24.4 Annual Program BAA at https://www.defensesbirsttr.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 to do so 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 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.

Current Release Award Structure by Topic

Topics	Period of Performance	Amount
*HR0011SB20244-02	Base: 9 months	$ 1,000,000
	Option 1: 9 months	$ 500,000
	Option 2: 6 months*	$ 100,000

*For this topic, DARPA will accept Phase II proposals with a total maximum cost/price of $1,600,000. This maximum cost/price includes a 9-month base period not to exceed $1,000,000, a 9-month Option of $500,000, and a second 6-month Option minimum of $100,000. The base period and the minimum funding for the Options (if exercised) are funded entirely by DARPA.

Phase II awards under this topic may be eligible for a Phase II Enhancement. For more information and instructions on Phase II Enhancement, see https://www.darpa.mil/attachments/DARPA-SBIR-STTR-Phase-II-Enhancement-Prgm-Instructions-122222.pdf.

Technical Volume (Volume 2)

The technical volume is not to exceed 25 pages. The Phase II commercialization strategy shall not exceed 5 pages. This should be the last section of the Technical Volume and is included in the 25-page total. Any pages in the technical volume over 25 pages will not be considering in proposal evaluations.

DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TABA)

DARPA does not offer TABA funding.

EVALUATION AND SELECTION

All proposals will be evaluated in accordance with the evaluation criteria listed in the DoD SBIR 24.4 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 DARPA 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 SBIR 24.4 BAA and availability of 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 DoD SBIR 24.4 BAA and DARPA 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 DoD SBIR 24.4 BAA and DARPA 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 DoD SBIR 24.4 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 Small Business Administration's (SBA's) SBIR/STTR award website (https://www.sbir.gov/sbirsearch/award/all).

Refer to the DoD SBIR 24.4 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: CMO_SBIRProtests@darpa.mil and sbir@darpa.mil

AWARD AND CONTRACT INFORMATION

1. General Award Information

Multiple awards are anticipated. DARPA may award Federal Acquisition Regulation (FAR)-based Government contracts (Firm- Fixed Price or Cost-Plus Reimbursement) or Other Transactions (OT) for

Prototypes agreement (under the authority of 10 U.S.C. § 4022) subject to approval of the Contracting Officer or Agreements Officer, respectively. The resources made available for each topic issued under this BAA will depend on the quality of the proposals received and the availability of funds.

Majority Ownership in Part. Proposers that are more than 50% owned by multiple venture capital operating companies (VCOC), hedge funds (HF), private equity firms (PEF), or any combination of these as set forth in 13 C.F.R. § 121.702, are eligible to submit proposals in response to DARPA topics advertised within this BAA.

For proposers that are a member of this ownership class the following must be satisfied for proposals to be accepted and evaluated:

a. Prior to submitting a proposal, firms must register with the SBA Company Registry Database.
b. The proposer within its submission must submit the Majority-Owned VCOC, HF, and PEF Certification. A copy of the SBIR VC Certification can be found on https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program, under SBIR/STTR BAA Forms. Include the SBIR VC Certification in the Supporting Documents (Volume 5).
c. Should a proposer become a member of this ownership class after submitting its proposal and prior to any receipt of a funding agreement, the proposer must immediately notify the Contracting Officer, register in the appropriate SBA database, and submit the required certification which can be found under SBIR/STTR BAA Forms and Templates on https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program.

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 SBIR 24.4 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 commercial 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 topic.

Please see https://acquisitioninnovation.darpa.mil/ 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

Phase II awardees of STTR funding pursuant to this BAA may be eligible to participate in the DARPA Embedded Entrepreneurship Initiative (EEI). 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 DARPA-funded advanced technology, into high-value products and capabilities for the government and commercial markets, and positions DARPA awardees to attract U.S. private 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 U.S. industry and private investor partners via EEI's Investor Working Groups; and (3) Additional funding to hire an

embedded entrepreneur to achieve specific milestones in a Go-to-Market strategy for transitioning the technology into 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, and customers. Funding for EEI is typically no more than $310,000 per awardee over the duration of the award. An awardee will attend one commercialization workshop, and also may apportion EEI funding to hire more than one embedded entrepreneur, if achieving the milestones requires a unique expertise that can be obtained without exceeding the awardee's total EEI funding.

EEI Application Process:
After receiving an SBIR/STTR award, awardees interested in being considered for EEI should notify their DARPA Program Manager (PM) during the period of performance. 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 the DARPA Commercial Strategy Team. A Senior Commercial Advisor will then contact the performer, assess fitness for EEI and determine, in consultation with the PM, and Commercial Strategy Team, whether or not 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.

After SCA review, the Commercial Strategy Team may request the SBIR/STTR awardee to submit additional tasks for review and/or apply separately to the Commercial Strategy "Commercial Solutions Opening" for additional review at https://sam.gov/opp/0b1cda40f5f0486a9180649312107987/view

EEI awards are at the sole discretion of DARPA and subject to program balance and the availability of funding. For more information, please refer to the EEI website https://eei.darpa.mil/.

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. 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 with a copy to SBIR_BAA@darpa.mil.

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. 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 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. *DARPA cannot accept late proposals*.

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 BAA Forms & 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.

Proposers should ensure that they have an accurate and active entity registration on SAM.gov, and a complete NIST SP 800-171 DoD Assessment. The portal and instructions on how to complete the NIST assessment is located at https://www.sprs.csd.disa.mil/nistsp.htm.

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 SBIR 24.4 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 the Technical Volume (Volume 2) – White Paper & Slide Deck**

1. The Technical Volume must include two parts, PART ONE: white paper, and PART TWO: slide deck, combined as a single Portable Document Format (PDF) for upload to DSIP.

2. Type of File: The Technical Volume must be a single 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.

3. Length: The length of the white paper shall not exceed 15 pages, and the slide deck shall not exceed 5 pages/slides. The Government will not consider pages in excess of the page count limitations.

4. 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.

c. Content of the Technical Volume (Volume 2) – White Paper & Slide Deck

White Paper (NTE 15 pages). Provide the following information:
Goals and Impact: Clearly describe what is being proposed and what difference it will make (qualitatively and quantitatively), including a brief discussion on how this directly relates to the topic.

1. Technical Plan: 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.

2. Management and Capabilities: Designate key personnel who will be involved in the Phase I effort. Provide a brief summary of expertise of the team, including subcontractors and key personnel. Describe the organizational experience in this technology area, previous work not directly related to the proposed effort, but similar, existing intellectual property required to complete the project, and any specialized facilities to be used as part of the project. List Government-furnished materials or data assumed to be available. Describe any specialized facilities to be used as part of the project, the extent of access to these facilities, and any biological containment, biosafety, and certification requirements.

3. Transition and Commercialization Plan (not to exceed 5 pages):
    a) Describe the commercial product or DoD system to be developed.

b) Discuss the potential end users – DoD, Federal, and/or private sector customers. Discuss your business model for this technology (i.e., how to you anticipate generating revenue with this technology?). Who are you selling to directly or indirectly, a supplier, an integrator, or an end user?
c) Describe your company's funding history. Discuss how much additional funding above this proposed effort (include additional required technology development, staffing requirements, infrastructure requirements, IP strategy costs, etc.) that will be required to bring this technology to market and how you anticipate going about getting that funding (e.g., Govt S&T contracts, investment).
d) Describe the timeline to maturity for sales or transition to an end user. Describe your IP strategy.
e) Describe the technology, market, team and business risks associated with this proposed effort and your plan to mitigate these risks.

Slide Deck (not to exceed 5 slides). Provide the following information (convert the completed deck to a pdf and attach it to the white paper):

1. What are you trying to do and how does this directly relate to the topic?

2. Technology and commercial product: Specifically, what are you proposing to produce – software, system, application? Be specific on what your proposed technology development is targeting as an end state.

3. How is the technology approached today? Who is doing the research, development and delivering products/services? What are the current limitations in the technology and commercial marketplaces?

4. Management: Overview of team, facilities, and qualifications.

5. Technical summary quad chart: Use template provided at https://www.darpa.mil/work-with-us/for-small-businesses/participate-sbir-sttr-program.

NOTE: All letters of recommendation and CVs can be loaded in Volume 5: Supporting Documents. 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 every item.

For Phase I proposals, proposers should NOT provide documentation to substantiate how all proposed costs were derived. However, proposers should be prepared to provide such documentation should the Contracting Officer request this documentation. If any substantiating documentation is requested by the Contracting Officer, it is important to respond as quickly as

possible to the request as to not delay contract negotiation.

Examples of substantiating documentation are as follows, 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 be able to 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.

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 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.
- If Subcontractors will be performing Fundamental Research under the effort, please incorporate the following into proposal: 1) a separate SOW outlining the specific work that the proposer finds to qualify as Fundamental Research; OR 2) Within Prime contractor SOW identify which tasks are to be performed that are fundamental research.
- Proposers should complete both tabs within the Cost Proposal Spreadsheet (Cost Model & Milestone Chart)

For more information about cost proposals and accounting standards associated with contract awards, see the Defense Contract Audit Agency (DCAA) publication titled "Audit Process Overview – Information for Contractors" available at http://www.dcaa.mil.

Please note, a separate, more detailed cost proposal spreadsheet will be provided for any Phase II Proposals.

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 SBIR 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. See Appendix A Introduction for required certifications that must be included in Volume 5. For additional information, see the SBIR 24.4 Annual Program Broad Agency Announcement (BAA) at https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/.

h. 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.

DARPA STTR 24.4 Topic Index
Release 2

HR0011SB20244-02 TITLE: Atmospheric Water Extraction Plus (AWE+)
OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Advanced Materials

OBJECTIVE: AWE+ seeks to develop novel atmospheric water extraction (AWE) technology with potential for energy use below 100Wh electric per liter of water generated across a wide range of environments. Integrate the technology into a proof-of-concept prototype producing potable water with a clear path to full-size implementation.

DESCRIPTION: There is a critical DoD need to separate the warfighter from the supply chain as the military moves towards more mobile, flexible, and self-sufficient operations, including the Expeditionary Advanced Base Operations (EABO, U.S. Marine Corps), the Multi-Domain Operations (MDO, Army), and the Agile Combat Employment (ACE, U.S. Air Force) concepts. Reducing water resupply requirements through the use of AWE devices will have important tactical implications and have a significant impact on the reduction of casualties and costs, especially in forward operating environments. The goal of developing AWE+ is to provide potable water for a range of military needs by developing low-power, distributable systems that can provide potable water anywhere, anytime, and without the need for any external liquid water source (e.g., groundwater, seawater, rivers, lakes, etc.). Although many technologies for meeting these needs have been developed, prototypes and production units lack the energy efficiency desired by the DoD to make them truly "game-changing" devices.

DARPA seeks to develop novel systems capable of producing water with very low energy input across a range of ambient conditions using sorbent materials. A key challenge of sorbent materials is releasing water from saturated sorbents. DARPA seeks teams with innovative means of releasing water from sorbents which is cyclically stable and has very low energy requirements (e.g. photo-switching, compressive release, multi-stage liquid desiccant distillation). Proof of concept material development will take place over Phase I. Performers will then focus on scaling up material development and doing basic device design activities (Phase II Base Period). Further investment will support integrating the novel materials into a functioning device, capable of producing water on its own (Phase II Option Periods).

DARPA is not seeking proposals related to direct thermal or vacuum release of water from sorbents or traditional refrigeration cycle devices. Devices may not credit the use of any energy sources other than electricity or direct heating. Specifically excluded are solar thermal heating and human interventions. Proposals which do not comply with these conditions will be considered non-conforming and may not be evaluated. Devices should conceivably be able to reach the following energy metrics at a variety of environmental conditions:

- Not more than 100Wh electricity per liter of water produced; and
- Not more than 100Wh thermal energy per liter of water produced; or
- If desired, performers may trade off one watt-hour of electricity for three watt-hours of thermal energy. For example, a device which required 80Wh electricity and 160Wh thermal energy per liter of water would be considered acceptable.

Proposers should clearly outline their plan for reaching the desired energy metrics and provide an estimate for the range of environmental conditions at which their devices could operate.

PHASE I: Phase I is a six-month effort focusing on proof-of-concept material and release mechanism development. Fixed payable milestones should include at a minimum:

- Month 1: Kickoff meeting and initial report on the status of performer design/engineering work and approach for meeting project requirements.
- Month 3: Initial material synthesis and water or steam production in a laboratory setting.
- Month 6:
    - Report showing the results of laboratory testing, demonstrating that the material and release mechanism are likely to be cyclically stable and produce potable water at a variety of environmental conditions.
    - Conceptual design of a device incorporating the material and release mechanism with estimates for specific energy consumption (energy per kg water), broken up by thermal energy and electrical energy inputs.
    - Performers will also deliver a schedule for their planned actions during Phase II.

Proposers may include additional milestones. If proposers choose to include additional milestones, they are encouraged to review the "Important Notes" section below the Milestone Chart in the cost proposal template.

In addition to reports described above, performers shall have quarterly telecons with DARPA.

PHASE II: To bound the scope of the effort while affording the maximum flexibility for technical innovation, a successful proposal will address overarching technical objectives using performer-defined metrics and milestones over the course of 24 months. Execution of this project will take place over a nine (9) month Base Period, with the option to extend via a nine (9) month Option I period and a six (6) month Option II period. Each period of performance will end in a Readiness Test with increasing technical difficulty as the project continues. Proposals should outline a work plan to technically advance their AWE systems to meet all requirements set forth in the Base, Option I, and Option II end-of-period challenges. Proposers should identify at least one (1) deliverable per month to meet incremental technical milestones to sufficiently advance their technology to meet end-of-period challenges.

Base Period
Performers will be expected to demonstrate functionality of their water capture & release mechanisms in a laboratory environment, producing at least 100mL of potable liquid water over a six-hour period with minimal loss in performance. Milestones for this period should include:

- Month 3: Performers shall submit a preliminary design for an integrated prototype system with sorbent & release systems, which produces at least 1L/day without manual intervention.
- Month 6: Performers, if using a novel sorbent, shall demonstrate production of at least 1g batches of the sorbent material.
- Month 9: Production of at least 100mL water from the performer's sorbent and release mechanism, produced within six hours over multiple cycles, with minimal degradation reported between cycles. DARPA observers may be present for the test. A report on

energy use during the test, and an estimate for size, weight, and power in a scaled-up optimized system at various ambient environmental conditions.

In addition to reports described above, performers shall have quarterly telecons with DARPA.

Option I
If selected to continue, performers will be expected to produce an integrated prototype combining their capture & release mechanisms. This prototype should be capable of producing at least 40mL of potable liquid water per hour at the DARPA condition. Milestones for this period should include:

- Month 3: Performers shall complete a final design for the 40mL/hr prototype device and order long-lead components.
- Month 6: Performers shall complete modelling showing anticipated operation of the prototype and a hypothetical scaled-up device across a range of operating conditions.
- Month 9: Demonstrate 12-hour prototype operation with minimal manual interventions, producing at least 40mL water per hour. Testing should be done at 70°F and the lowest relative humidity practical to meet production goals. DARPA observers may be present for the test.
- Produce a report on energy used by the prototype and the quality of water produced. Update size, weight, and power estimates for an optimized & scaled-up device.

In addition to reports described above, performers shall have quarterly telecons with DARPA.

Option II
If selected to continue, performers will advance the technology readiness level and optimization of their devices during the Option II Period. Milestones for this period should include:

- Month 3: Performers shall submit a design for a modified prototype with improved energy efficiency and capable of operating for at least 30 days.
- Month 6: Production of at least 1 liter of potable water per day over a continuous 4-day test run with minimal manual interventions. Testing should be done at 70°F and the lowest relative humidity practical to meet production goals. DARPA observers may be present for the test. A report on energy use during the test, and a preliminary design for a production-ready system. This design should include estimates for size, weight, and power.

In addition to reports described above, performers shall have quarterly telecons with DARPA.

Phase II Enhancement: Phase II awards under this topic may be eligible for a Phase II Enhancement. Performers are encouraged to visit https://www.darpa.mil/attachments/DARPA-SBIR-STTR-Phase-II-Enhancement-Prgm-Instructions-122222.pdf for more information and instructions on Phase II Enhancements.

PHASE III DUAL USE APPLICATIONS: The end goal of this effort is to demonstrate AWE capable of meeting potable water needs for expeditionary scenarios with extremely high efficiency. Phase III will be oriented toward transition within DoD/military and further commercialization of the technology. The proposer is required to obtain funding from the private sector OR a non-SBIR/STTR Government source. This is to develop the prototype technology into a viable product or service for sale (e.g., a deployable, ruggedized, user-friendly device) in military or private sector markets. The following are the potential commercial and DoD/military applications and use cases:

- Satisfy military expeditionary water needs to reduce logistical footprint and vulnerability of supply lines. Reduce the carbon footprint of logistics-related military infrastructure needs
- Develop next-generation dehumidification systems for residential and commercial HVAC

KEYWORDS: Atmospheric water extraction, atmospheric water capture, atmospheric water harvesting, sorbent materials, advanced manufacturing

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