



Broad Agency Announcement
Defense Sciences Office (DSO) Office-wide BAA
Defense Sciences Office
HR001124S0039

September 27, 2024

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016 and 2 CFR § 200.203. Any resultant award negotiations will follow all pertinent law and regulation, and any negotiations and/or awards for procurement contracts will use procedures under FAR 15.4, Contract Pricing, as specified in the BAA.

OVERVIEW INFORMATION:

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Defense Sciences Office
- **Funding Opportunity Title** – Defense Sciences Office (DSO) Office-wide BAA
- **Announcement Type** – Initial Announcement
- **Funding Opportunity Number** – HR001124S0039
- **Assistance Listing Number:** 12.910 Research and Technology Development
- **Dates/Time - All Times are Eastern Time Zone (ET)**
 - Posting Date: September 27, 2024
 - Question Submittal Closing Date: September 5, 2025 at 4:00 PM
 - Executive Summary: Executive Summaries may be submitted on a rolling basis until September 26, 2025 at 4:00 PM
 - Proposal Abstract: Abstracts may be submitted on a rolling basis until September 26, 2025 at 4:00 PM
 - Proposal Due Date: Proposals may be submitted on a rolling basis until September 26, 2025 at 4:00 PM
- **Anticipated individual awards** - Multiple awards are anticipated.
- **Types of instruments that may be awarded** – Cooperative Agreements, Procurement Contracts, and Other Transaction for Research, and Other Transaction for Prototype
- **NAICS Code:** 541713, 541714, 541715, 541720
- **Agency contact**
 - Points of Contact

The BAA Coordinator for this effort may be reached at:
HR001124S0039@darpa.mil
DARPA/ DSO
ATTN: HR001124S0039
675 North Randolph Street
Arlington, VA 22203-2114

Section I: Funding Opportunity Description

The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is soliciting proposals that investigate innovative approaches that enable revolutionary advances in science, devices, or systems for national security applications. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

The DARPA Defense Sciences Office regularly publishes Broad Agency Announcements (BAAs) requesting responses to specific program topics. This announcement seeks revolutionary research ideas for topics not being addressed by ongoing DSO programs or other published solicitations.

To avoid proposals that duplicate existing activities or are responsive to other published DSO solicitations, potential proposers are highly encouraged to review current DSO programs and solicitations, respectively listed at <http://www.darpa.mil/about-us/offices/dso> and <http://www.darpa.mil/work-with-us/opportunities>. Contacting DSO program managers to discuss their research interests is strongly encouraged. A current list of program managers is available at <http://www.darpa.mil/about-us/people>.

A. Introduction

The mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and create the next generation of scientific discovery to fuel innovation throughout the Agency and beyond. DSO serves as “DARPA’s DARPA” by developing and executing an aggressive and forward leaning portfolio that expands the art of the possible across a broad set of technical areas. DSO aims to create strategic surprise advantage for the DoD by pushing technology towards its fundamental scientific limits. We look to prevent technological surprise by understanding the path commercial research and development (R&D) is taking, anticipating that our adversaries will exploit available technology to develop new capabilities in the coming decades. In addition, the office looks for changes at the global scale and the impact such changes may have on our nation.

In support of this mission, the DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts or studies and analysis proposals that address one or more of the following technical thrust areas: (1) Novel Materials & Structures, (2) Sensing & Measurement, (3) Computation & Processing, (4) Enabling Operations, (5) Collective Intelligence, and (6) Emerging Threats. Each of these thrust areas is described below and includes a list of example research topics that highlight several (but not all) potential areas of interest. Proposals must investigate innovative research approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements to the existing state of practice or are for manufacturing scale-up.

B. Technical Thrust Area Descriptions

To support its mission, DSO is interested in engaging with the R&D community to tackle complex challenges and develop impactful capabilities. DSO frames its office according to the thrust areas described further below, but encourages any fundamental research concept, idea, or effort that addresses DARPA’s mission to make pivotal investments in breakthrough technologies for national security.

1. Novel Materials & Structures: This thrust includes, but is not limited to, science and

technology in quantum devices, atomic scale systems, and functional and structural materials.

2. **Sensing & Measurement:** This thrust includes, but is not limited to, science and technology in quantum sensing and metrology, seeing (sensing) the unseen, and novel light sources.
3. **Computation & Processing:** This thrust includes, but is not limited to, science and technology of quantum computing, cryptography, and modeling of complex systems.
4. **Enabling Operations:** This thrust includes, but is not limited to, technologies to support space-based operations, tactically remote environments, and resource assurance.
5. **Collective Intelligence:** This thrust includes, but is not limited to, exploration of complex sociotechnical systems, adaptable Artificial Intelligence (AI), and AI-accelerated learning.
6. **Emerging Threats:** This thrust includes, but is not limited to, methods to understand or address national security concerns related to global issues associated with raw material availability, environmental catastrophes, and digital societies.

Section II: Evaluation Criteria

- Proposals will be evaluated using the following criteria listed in **descending order of importance**: Overall Scientific and Technical Merit; Potential Contribution and Relevance to the DARPA Mission; and Cost and Schedule Realism.
 - **Overall Scientific and Technical Merit:** The proposed technical approach is innovative, feasible, achievable, and complete. Detailed technical rationale is provided delineating why the proposed approach can achieve the program goals and metrics. The proposed technical team has the expertise and experience to accomplish the proposed tasks. Task descriptions and associated technical elements provided are complete and logically sequenced with all proposed deliverables clearly defined so the final outcome of the award's work achieves the goal. The proposal identifies major technical risks, and planned mitigation efforts are clearly defined and feasible.
 - **Potential Contribution and Relevance to the DARPA Mission:** The potential contributions of the proposed effort bolster the national security technology base and support DARPA's mission to make pivotal early technology investments that create or prevent technological surprise. The proposed intellectual property restrictions (if any) will not significantly impact the Government's ability to transition the technology.
 - **Cost and Schedule Realism:** The proposed costs and schedule are realistic for the technical and management approach and accurately reflect the technical goals and objectives of the solicitation. All proposed labor, material, and travel costs are necessary to achieve the program metrics, consistent with the proposer's Statement of Work, and reflect a sufficient understanding of the costs and level of effort needed to successfully accomplish the proposed technical approach. The costs for the prime proposer and proposed subawardees are substantiated by the details provided in the proposal (e.g., the type and number of labor hours proposed per task, the types and quantities of materials, equipment and fabrication costs, travel and any other applicable costs and the basis for the estimates). The proposed schedule aggressively pursues performance metrics in an efficient time frame that accurately accounts for the anticipated workload. It is expected that the effort will leverage all available, relevant, prior research to obtain the maximum

benefit from the available funding. For proposals containing cost share, the proposer has provided sufficient rationale regarding the appropriateness of the cost share arrangement, relative to the objectives of the proposed solution (e.g., high likelihood of commercial application, etc.).

- Unless otherwise specified in this announcement, for additional information on how DARPA reviews and evaluates proposals through the Scientific Review Process, please visit: [Proposer Instructions: General Terms and Conditions](#)

Section III: Submission Information

- This announcement allows for multiple award instrument types to be awarded to include Procurement Contracts, Cooperative Agreements, Other Transaction for Research, and Other Transaction for Prototype. Some award instrument types have specific cost-sharing requirements. The following websites are incorporated by reference and contain additional information regarding overall proposer instructions, general terms and conditions, and each specific award instrument type.

Proposers must review the following links:

- **Proposer Instructions and General Terms and Conditions:** [Proposer Instructions: General Terms and Conditions](#)
- **Procurement Contracts:** [Proposer Instructions: Procurement Contracts](#)
- **Cooperative Agreements:** [Proposer Instructions: Grants/Cooperative Agreements](#)
- **Other Transaction for Research and Other Transaction for Prototype:** [Proposer Instructions: Other Transactions](#)
- Prior to submitting a full proposal, proposers are strongly encouraged to first submit an executive summary or abstract as described below. This process allows a proposer to ascertain whether the proposed concept is applicable to the DSO Office-wide BAA, important to the DSO mission and portfolio, and currently of interest.
- Executive summaries, abstracts, and full proposals that are not found to be applicable to the DSO Office-wide BAA as defined above may be deemed non-conforming and removed from consideration. All executive summaries, abstracts, and full proposals must provide sufficient information to assess the validity/feasibility of their claims as well as comply with the requirements outlined herein for submission formatting, content, and transmission to DARPA. Executive summaries, abstracts, and full proposals that fail to do so may be deemed non-conforming and removed from consideration. Proposers will be notified of non-conforming determinations via letter.
- This announcement contains an executive summary phase. Executive summaries are strongly encouraged but not required. Executive Summaries will be reviewed on a rolling basis and can be submitted until September 26, 2025 at 4:00 PM as stated in the Overview section. Executive Summary submissions must provide **Attachment A**. DARPA will respond to executive summaries with a brief statement either encouraging or discouraging submission of a follow-on abstract or full proposal. In keeping with the intent of the executive summary, these responses will generally be limited to a statement of interest (or lack thereof), rather than providing detailed feedback. Regardless of DARPA's response to an executive

summary, proposers may submit an abstract or full proposal. Regardless of the future instrument type desired, all executive summaries must be submitted through the Broad Agency Announcement Tool (BAAT). For instructions on how to submit to BAAT, visit the “Unclassified Submission Instructions” section at [Proposer Instructions: General Terms and Conditions](#).

- This announcement contains an abstract phase. Abstracts are strongly encouraged but not required. Abstracts will be reviewed on a rolling basis and can be submitted until September 26, 2025 at 4:00 PM as stated in the Overview section. Additional instructions for abstract submission are contained within **Attachments B and C**. DARPA will respond to abstracts with a statement as to whether DARPA is interested in the idea. If DARPA does not recommend the proposer submit a full proposal, DARPA will provide feedback to the proposer regarding the rationale for this decision. Regardless of DARPA’s response to an abstract, proposers may submit a full proposal. DARPA will review all conforming full proposals using the published evaluation criteria and without regard to any comments resulting from the review of an abstract. Proposers should note that a favorable response to an abstract is not a guarantee that a proposal based on the abstract will ultimately be selected for award negotiation. Regardless of instrument type desired, all abstracts must be submitted through the Broad Agency Announcement Tool (BAAT). For instructions on how to submit to BAAT, visit the “Unclassified Submission Instructions” section at [Proposer Instructions: General Terms and Conditions](#).
- Full proposals can be submitted through September 26, 2025 at 4:00 PM as stated in the Overview section.
 - **Attachments D, E, F, and G** contain specific instructions and templates and constitute a full proposal submission for proposers requesting either a Procurement Contract or Other Transaction (OT) for Prototype. Proposers requesting Procurement Contracts or OT for Prototype must submit proposals through the Broad Agency Announcement Tool.
 - **Attachments D, E, and G** contain specific instructions and templates and constitute a full proposal submission for proposers requesting a Cooperative Agreement or Other Transaction (OT) for Research. Proposers requesting a Cooperative Agreement or OT for Research must submit proposals through grants.gov.
- BAA Attachments:
 - **(required if submitting an executive summary) Attachment A:** Executive Summary Template
 - **(required if submitting an abstract) Attachment B:** Abstract Summary Slide Template
 - **(required if submitting an abstract) Attachment C:** Abstract Instructions and Template
 - **(required) Attachment D:** Proposal Summary Slide Template
 - **(required) Attachment E:** Proposal Instructions and Volume I Template (Technical and Management)
 - **(required for proposer requesting Procurement Contracts or Other Transaction Agreements for Prototype) Attachment F:** Proposal Instructions and Volume II Template (Cost)

- **(required) Attachment G:** MS Excel™ DARPA Standard Cost Proposal Spreadsheet

Section IV: Special Considerations

- This announcement, stated attachments, and websites incorporated by reference constitute the entire solicitation. In the event of a discrepancy between the announcement, attachments, or websites, the announcement takes precedence.
- All responsible sources capable of satisfying the Government's needs, including both U.S. and non-U.S. sources, may submit a proposal DARPA will consider. Historically Black Colleges and Universities, Small Businesses, Small Disadvantaged Businesses and Minority Institutions are encouraged to submit proposals and join others in submitting proposals; however, no portion of this announcement will be set aside for these organizations' participation due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities. Non-U.S. organizations and/or individuals may participate to the extent that such participants comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances.
- As of the time of publication of this solicitation, all proposal submissions are anticipated to be unclassified.
- Periodically, DARPA may endeavor to hold "Pitch Day(s)". A "Pitch Day" entails DARPA soliciting proposals for a specific, targeted aspect under one or more of the BAA's thrust areas. Proposers ultimately would pitch their proposals to DARPA via oral presentations. Any "Pitch Day" established under this BAA would be advertised via a separate Special Notice announcement linked to this BAA and posted on www.sam.gov, and will include specific instructions and evaluation.
- Federally Funded Research and Development Centers, University Affiliated Research Centers, and Government entities interested in participating in the program or proposing to this BAA should first contact the point of contact listed in the Overview section prior to submitting an executive summary, abstract, or proposal to discuss eligibility and requirements. Additional information regarding eligibility can be found at [Proposer Instructions: General Terms and Conditions](#).
- As of the date of publication of this solicitation, the Government expects that program goals as described herein may be met by proposed efforts for fundamental research and non-fundamental research. Some proposed research may present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies unique and critical to defense. Based on the anticipated type of proposer (e.g., university or industry) and the nature of the solicited work, the Government expects some awards will include restrictions on the resultant research requiring the awardee seek DARPA permission before publishing any information or results relative to the program. For additional information on fundamental research, please visit [Proposer Instructions: General Terms and Conditions](#).
- Proposers should indicate in their proposal whether they believe the scope of the research included in their proposal is fundamental or not. While proposers should clearly explain the intended results of their research, the Government shall have sole discretion to determine

whether the proposed research shall be considered fundamental and to select the award instrument type. Appropriate language will be included in resultant awards for non-fundamental research to prescribe publication requirements and other restrictions, as appropriate. This language can be found at [Proposer Instructions: General Terms and Conditions](#).

- For certain research projects, it may be possible that although the research to be performed by a potential awardee is non-fundamental research, their proposed subawardee's effort may be fundamental research. It is also possible the research performed by a potential awardee is fundamental research while their proposed subawardee's effort may be non-fundamental research. In all cases, it is the potential awardee's responsibility to explain in their proposal which proposed efforts are fundamental research and why the proposed efforts should be considered fundamental research.
- DARPA's Fundamental Research Risk-Based Security Review Process (formerly CFIP, now FRRBS aka "FERBS") is an adaptive risk management security program designed to help protect the critical technology and performer intellectual property associated with DARPA's research projects by identifying the possible vectors of undue foreign influence. DARPA will create risk assessments of all proposed Senior/Key Personnel selected for negotiation of a fundamental research cooperative agreement award. The DARPA risk assessment process will be conducted separately from the DARPA scientific review process and adjudicated prior to final award. For additional information on this process, please visit [Proposer Instructions: Grants/Cooperative Agreements](#).
- Proposers that anticipate involving human subjects or animals in the proposed research must comply with the approval procedures detailed at [Human Subjects and Animal Subjects Research](#), to include providing the information specified therein as required for proposal submission.
- DARPA has streamlined our Broad Agency Announcements and is interested in your feedback on this new format. Please send any comments to DARPA solicitations@darpa.mil.

Additional Resources Available to Proposers

- The APEX Accelerators program, formerly known as the Procurement Technical Assistance Program (PTAP), focuses on building a strong, sustainable, and resilient U.S. supply chains by assisting a wide range of businesses that pursue and perform under contracts with the DoD, other federal agencies, state and local governments and with government prime contractors. See <https://www.apexaccelerators.us/> for more information. APEX Accelerators help businesses:
 - Complete registration with a wide range of databases necessary for them to participate in the government marketplace (e.g., SAM).
 - Identify which agencies and offices may need their products or services and how connect with buying agencies and offices.
 - Determine whether they are ready for government opportunities and how to position themselves to succeed.
 - Navigate solicitations and potential funding opportunities.

- Receive notifications of government contract opportunities on a regular basis.
 - Network with buying officers, prime contractors, and other businesses.
 - Resolve performance issues and prepare for audit, only if the service is needed, after receiving an award.
- Project Spectrum is a nonprofit effort funded by the DoD Office of Small Business Programs to help educate the Defense Industrial Base (DIB) on compliance. Project Spectrum is vendor-neutral and available to assist businesses with their cybersecurity and compliance needs. Their mission is to improve cybersecurity readiness, resilience, and compliance for small/medium-sized businesses and the federal manufacturing supply chain. Project Spectrum events and programs will enhance awareness of cybersecurity threats within the manufacturing, research and development, as well as knowledge-based services sectors of the industrial base. Project Spectrum will leverage strategic partnerships within and outside of the DoD to accelerate the overall cybersecurity compliance of the DIB.
www.Projectspectrum.io is a web portal that will provide resources such as individualized dashboards, a marketplace, and Pilot Program to help accelerate cybersecurity compliance.
 - DARPAConnect offers free resources to potential performers to help them navigate DARPA, including “Understanding DARPA Award Vehicles and Solicitations,” “Making the Most of Proposers Days,” and “Tips for DARPA Proposal Success.” Join DARPAConnect at www.DARPAConnect.us to leverage on-demand learning and networking resources.