

DEPARTMENT OF THE NAVY (DON)
DoW 2026 Small Business Innovation Research SBIR (SBIR) BAA
Release 5
Direct to Phase II (DP2)
Proposal Submission Instructions

IMPORTANT

- **The following instructions apply to Direct to Phase II (DP2) SBIR topic only:**
 - **DON26BZ05-DV081 through DON26BZ05-DV087**
- Submitting small business concerns (SBCs) are encouraged to thoroughly review the DoW SBIR/STTR Program Broad Agency Announcement (BAA) and register for the DSIP Listserv to remain apprised of important programmatic changes.
 - The DoW Program BAA is located at: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/#announcements>. Select the tab for the appropriate BAA cycle.
 - Register for the DSIP Listserv at: <https://www.dodsbirsttr.mil/submissions/login>.
- The information provided in the DON Proposal Submission Instructions takes precedence over the DoW Instructions posted for this BAA.
- A submitting SBC **MUST** use the DP2 Phase I Feasibility proposal template for Volume 2. This template is specific to DON DP2 topics and meets DP2 submission requirements. The DP2 Phase I Feasibility proposal template can be found at https://navysbir.com/links_forms.htm.
- Proposing SBCs 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 are eligible to submit proposals in response to DON topics advertised in this BAA. Information on Majority Ownership in Part and certification requirements at time of submission for these proposing SBCs are detailed in the section titled ADDITIONAL SUBMISSION CONSIDERATIONS.
- The DON may consider the following FAR and Non-FAR contracting strategies when issuing Phase II awards: Cost Plus Fixed Fee (CPFF), Firm Fixed Price (FFP), Basic Ordering Agreement (BOA), or Prototype Other Transaction (OT).
- This BAA is issued under regulations set forth in Federal Acquisition Regulation (FAR) 35.016 and awards will be made under “other competitive procedures”. The policies and procedures of FAR Subpart 15.3 shall not apply to this BAA, except as specifically referenced in it. All procedures are at the sole discretion of the Government as set forth in this BAA. Submission of a proposal in response to this BAA constitutes the express acknowledgement to that effect by the proposing SBC.

INTRODUCTION

The DON SBIR/STTR Programs are mission-oriented programs that integrate the needs and requirements of the DON's Fleet through research and development (R&D) topics that have dual-use potential, but primarily address the needs of the DON. More information on the programs can be found on the DON SBIR/STTR website at www.navysbir.com. Additional information on DON's mission can be found on the DON website at www.navy.mil.

The Department of War (DoW), including the Department of the Navy (DON), may issue an SBIR award to an SBC under Phase II, without regard to whether the SBC received a Phase I award for such project. Prior to such an award, the head of the agency, or their designee, must issue a written determination that the SBC has demonstrated the scientific and technical merit and feasibility of the technology solution that appears to have commercial potential (for use by the government or in the public sector). The determination must be submitted to the Small Business Administration (SBA) prior to issuing the Phase II award. As such, DON issues this portion of the BAA in accordance with the requirements of the Direct to Phase II (DP2) authority. Only those proposing SBCs that are capable of meeting the DP2 proposal requirements may participate in this DP2 BAA. No Phase I awards will be issued to the designated DP2 topic.

For questions regarding this BAA, use the information in Table 1 to determine who to contact for what types of questions.

TABLE 1: POINTS OF CONTACT FOR QUESTIONS REGARDING THIS BAA

Type of Question	When	Contact Information
Program and administrative	Always	DON SBIR/STTR Program Management Office usn.pentagon.cnr-arlington-va.mbx.navy-sbir-sttr@us.navy.mil or appropriate Program Manager listed in Table 2 (below)
Topic-specific technical questions	BAA Pre-release	Technical Point of Contact (TPOC) listed in each topic on the DoW SBIR/STTR Innovation Portal (DSIP). Refer to the Proposal Submission section of the DoW SBIR/STTR Program BAA for details.
	BAA Open	DoW SBIR/STTR Topic Q&A platform (https://www.dodsbirsttr.mil/submissions) Refer to the Proposal Submission section of the DoW SBIR/STTR Program BAA for details.
Electronic submission to the DoW SBIR/STTR Innovation Portal (DSIP)	Always	DSIP Support via email at dodsbirsupport@reisystems.com
Navy-specific BAA instructions and forms	Always	DON SBIR/STTR Program Management Office usn.pentagon.cnr-arlington-va.mbx.navy-sbir-sttr@us.navy.mil

TABLE 2: DON SYSTEMS COMMAND (SYSCOM) SBIR PROGRAM MANAGERS

Topic Numbers	Point of Contact	SYSCOM	Email
DON26BZ05-NV081 to DON26BZ05-NV087	Ms. Kristi DePriest	Naval Air Systems Command (NAVAIR)	navair-sbir@us.navy.mil

Each DON SBIR DP2 topic requires documentation to determine that Phase I feasibility, described in the Phase I section of the topic, has been met.

The DON SBIR DP2 is a two-step process:

STEP ONE: Prepare and Submit a Phase I Feasibility Proposal (instructions and link to template provided below). The purpose of the Phase I Feasibility Proposal is for the proposing SBC to provide documentation to substantiate that both Phase I feasibility and the scientific and technical merit described in the topic have been met. **The Phase I Feasibility Proposal must:** demonstrate that the proposing SBC performed Phase I-type research and development (R&D) and provide a concise summary of Phase II objectives, work plan, related research, key personnel, transition/commercialization plan, and estimated costs. Feasibility documentation MUST NOT be solely based on work performed under prior or ongoing federally funded SBIR/STTR work. The government will evaluate Phase I Feasibility Proposals and select SBCs to submit a Full DP2 Proposal. **Demonstrating proof of feasibility is a requirement for a DP2 award. The SBC must submit a Phase I Feasibility Proposal to be considered for selection to submit a Full DP2 Proposal.**

STEP TWO: If selected, the cognizant SYSCOM Program Office will contact the SBC directly to provide instructions on how to submit a Full DP2 Proposal.

DON SBIR reserves the right to make no awards under this DP2 BAA. All awards are subject to availability of funds and successful negotiations. Proposing SBCs must read the topic requirements carefully. The Government is not responsible for expenditures by the proposing SBC prior to award of a contract. For 2026.BZ Release 1 topics designated as DP2, DON will accept only Phase I Feasibility Proposals (described below).

DP2 PROPOSAL SUBMISSION REQUIREMENTS

The following section details requirements for submitting a compliant DON SBIR DP2 Proposal to the DoW SBIR/STTR Programs.

(NOTE: Proposing SBCs are advised that support contract personnel will be used to carry out administrative functions and may have access to proposals, contract award documents, contract deliverables, and reports. All support contract personnel are bound by appropriate non-disclosure agreements.)

DoW SBIR/STTR Innovation Portal (DSIP). Proposing SBCs are required to submit proposals via the DoW SBIR/STTR Innovation Portal (DSIP); and follow proposal submission instructions in the DoW SBIR/STTR Program BAA on the DSIP at <https://www.dodsbirsttr.mil/submissions>. Proposals submitted by any other means will be disregarded. Proposing SBCs submitting through DSIP for the first time will be asked to register. It is recommended that proposing SBCs register as soon as possible upon identification of a proposal opportunity to avoid delays in the proposal submission process. Proposals that are not

successfully certified electronically in DSIP by the Corporate Official prior to BAA Close will NOT be considered submitted and will not be evaluated by DON. Proposals that are encrypted, password protected, or otherwise locked in any portion of the submission will be REJECTED unless specifically directed within the text of the topic to which you are submitting. Please refer to the DoW SBIR/STTR Program BAA for further information.

Eligibility. Each proposing SBC must:

- Have demonstrated feasibility of Phase I-type R&D work
- Have submitted a Phase I Feasibility Proposal for evaluation
- Meet Offeror Eligibility and Performance Requirements as defined in the Proposal Fundamentals section of the DoW SBIR/STTR Program BAA
- Comply with primary employment requirements of the principal investigator (PI) during the Phase II award including, employment with the SBC at the time of award and during the conduct of the proposed project. Primary employment means that more than one-half of the PI's time is spent in the employ of the SBC
- Register in the System for Award Management (SAM) as defined in the Certifications and Registrations section of the DoW SBIR/STTR Program BAA. To register, visit <https://sam.gov/>

Proposal Volumes. The following seven volumes are required.

- **Proposal Cover Sheet (Volume 1).** As specified in DoW SBIR/STTR Program BAA.
- **Technical Volume (Volume 2).**
 - Technical Proposal (Volume 2) must meet the following requirements or the proposal will be REJECTED:
 - A submitting SBC MUST use the DP2 Phase I Feasibility proposal template for Volume 2. The DP2 Phase I Feasibility proposal template can be found at https://navysbir.com/links_forms.htm.

This template is specific to DON DP2 topics and meets DP2 submission requirements:

- ☐ Not to exceed 30 pages, regardless of page content; Phase I Proof of Feasibility portion not to exceed 20 pages, Snapshot of Proposed Phase II Effort portion not to exceed 10 pages
 - ☐ Single column format, single-spaced typed lines
 - ☐ Standard 8 ½" x 11" paper
 - ☐ Page margins one inch on all sides. A header and footer may be included in the one-inch margin.
 - ☐ No font size smaller than 10-point
- Additional information:
 - A font size smaller than 10-point is allowable for headers, footers, imbedded tables, figures, images, or graphics that include text. However, proposing SBCs are cautioned that if the text is too small to be legible it will not be evaluated.
- **Cost Volume (Volume 3).** The text fields related to costs for the proposed effort must be answered in the Cost Volume of the DoW Submission system (at <https://www.dodsbirsttr.mil/submissions/>), however, proposing SBCs DO NOT need to download and complete the separate cost volume template when submitting the DON SBIR Phase I Feasibility Proposal. Proposing SBCs are to include a cost estimate in the Order of Magnitude Cost Estimate Table (example below) within the Snapshot of Proposed Phase II Effort portion of the Technical Volume (Volume 2). Please refer to Table 3 below for guidance on cost and period of performance. Costs for the Base and Option are to be separate and identified on the Proposal Cover Sheet and in the Order of Magnitude Cost Estimate Table in the Technical Volume (Volume 2).

Order of Magnitude Cost Estimate Table			
Line Item – Details	Estimated Base Amount	Estimated Option Amount	Total Estimated Amount Base + Option
Direct Labor (fully burdened) – Prime			
Subcontractors/Consultants			
Material			
Travel & ODC			
G&A			
FCCM			
Fee/Profit			
TABA (NTE \$25K, included in total amount)			
Total Estimated Costs			

TABLE 3: COST & PERIOD OF PERFORMANCE

Topic Number	Base		Option		Total (NTE)
	Cost (NTE)	POP (NTE)	Cost (NTE)	POP (NTE)	
DON26BZ05-DV081 to DON26BZ05-DV087	\$1,000,000	30 mos.	\$400,000	12 mos.	\$1,400,000

- Additional information:
 - For Phase II a minimum of 50% of the work is performed by the proposing SBC. The percentage of work requirement must be met in the Base costs as well as in the Option costs. The percentage of work is measured by both direct and indirect costs. To calculate the minimum percentage of work for the proposing SBC the sum of all direct and indirect costs attributable to the proposing SBC represent the numerator and the total cost of the proposal (i.e., Total Cost before Profit Rate is applied) is the denominator. The subcontractor percentage is calculated by taking the sum of all costs attributable to the subcontractor as the numerator and the total cost of the proposal (i.e., Total Cost before Profit Rate is applied) as the denominator. **NOTE:** G&A, if proposed, will only be attributed to the proposing SBC.
 - Provide sufficient detail for subcontractor, material, and travel costs. Subcontractor costs must be detailed to the same level as the prime contractor. Material costs must include a listing of items and cost per item. Travel costs must include the purpose of the trip, number of trips, location, length of trip, and number of personnel.
 - Inclusion of cost estimates for travel to the sponsoring SYSCOM's facility for one day of meetings is recommended for all proposals.
 - The "Additional Cost Information" of Supporting Documents (Volume 5) may be used to provide supporting cost details for Volume 3.
- **Company Commercialization Report (Volume 4).** DoW collects and uses Volume 4 and DSIP requires Volume 4 for proposal submission. Please refer to the Proposal Preparation Instructions and Requirements section of the DoW SBIR/STTR Program BAA for details to ensure compliance with DSIP Volume 4 requirements.

- **Supporting Documents (Volume 5).** Volume 5 is for the submission of administrative material that DON may or will require to process a proposal, if selected, for contract award.

All proposing SBCs must review and submit the following items, as applicable:

- **Majority Ownership in Part.** Proposing SBCs which 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 DON topics advertised within this BAA. Complete the certification as detailed under ADDITIONAL SUBMISSION CONSIDERATIONS.
- Additional information:
 - Proposing SBCs may include the following administrative materials in Supporting Documents (Volume 5); a template is available at https://navysbir.com/links_forms.htm to provide guidance on optional material the proposing SBC may want to include in Volume 5:
 - Additional Cost Information to support the Cost Volume (Volume 3)
 - SBIR/STTR Funding Agreement Certification
 - Data Rights Assertion
 - Disclosure of Information (DFARS 252.204-7000)
 - Prior, Current, or Pending Support of Similar Proposals or Awards
 - Foreign Citizens
 - Details of Request for Discretionary Technical and Business Assistance (TABAs), if proposed, is to be included under the Additional Cost Information section if using the DON Supporting Documents template.
 - Do not include documents or information to substantiate the Technical Volume (Volume 2) (e.g., resumes, test data, technical reports, or publications). Such documents or information will not be considered.
 - A font size smaller than 10-point is allowable for documents in Volume 5; however, proposing SBCs are cautioned that the text may be unreadable.
- **Fraud, Waste and Abuse Training Certification (Volume 6).** DoW requires Volume 6 for submission. Please refer to the Proposal Preparation Instructions and Requirements section of the DoW SBIR/STTR Program BAA for details.
- **Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Volume 7).** In accordance with Section 4 of the SBIR and STTR Extension Act of 2022 and the SBA SBIR/STTR Policy Directive, the DoW will review all proposals submitted in response to this BAA to assess security risks presented by SBCs seeking a Federally funded award. SBCs must complete the Disclosures of Foreign Affiliations or Relationships to Foreign Countries webform in Volume 7 of the DSIP proposal submission. Please refer to the Proposal Preparation Instructions and Requirements section of the DoW SBIR/STTR Program BAA for details.

DP2 EVALUATION AND SELECTION

The following section details how the DON SBIR/STTR Programs will evaluate Phase I Feasibility proposals.

Proposals meeting DSIP submission requirements will be forwarded to the DON SBIR/STTR Programs. Prior to evaluation, all proposals will undergo a compliance review to verify compliance with DoW and DON SBIR/STTR proposal eligibility requirements. Proposals not meeting submission requirements will be REJECTED and not evaluated.

- **Proposal Cover Sheet (Volume 1).** The Proposal Cover Sheet (Volume 1) will undergo a compliance review to verify the proposing SBC has met eligibility requirements and followed the instructions for Proposal Cover Sheet as specified in the DoW SBIR/STTR Program BAA.
- **Technical Volume (Volume 2).** The DON will evaluate and select Phase I Feasibility proposals using the evaluation criteria specified in the Method of Selection and Evaluation Criteria section of the DoW SBIR/STTR Program BAA, with technical merit being most important, followed by qualifications of key personnel and commercialization potential of equal importance. The information considered for this decision will come from Volume 2. This is not a FAR Part 15 evaluation and proposals will not be compared to one another. Cost is not an evaluation criterion and will not be considered during the evaluation process; the DON will only do a compliance review of Volume 3. Due to limited funding, the DON reserves the right to limit the number of awards under any topic.

The Technical Volume (Volume 2) will undergo a compliance review (prior to evaluation) to verify the proposing SBC has met the following requirements or the proposal will be REJECTED:

- A submitting SBC MUST use the DP2 Phase I Feasibility proposal template for Volume 2. The DP2 Phase I Feasibility proposal template can be found at https://navysbir.com/links_forms.htm.

This template is specific to DON DP2 topics and meets DP2 submission requirements:

- Not to exceed 30 pages, regardless of page content; Phase I Proof of Feasibility portion not to exceed 20 pages, Snapshot of Proposed Phase II Effort portion not to exceed 10 pages
 - Single column format, single-spaced typed lines
 - Standard 8 ½" x 11" paper
 - Page margins one inch on all sides. A header and footer may be included in the one-inch margin.
 - No font size smaller than 10-point, except as permitted in the instructions above.
- **Cost Volume (Volume 3).** The Cost Volume (Volume 3) will not be considered in the selection process and will undergo a compliance review to verify the proposing SBC has met the following requirements or the proposal will be REJECTED:
 - Must not exceed values for the Base and Option (refer to Table 3).
 - Must meet minimum percentage of work; a minimum of 50% of the work is performed by the proposing SBC. The percentage of work requirement must be met in the Base costs as well as in the Option costs.
- **Company Commercialization Report (Volume 4).** The CCR (Volume 4) will not be evaluated by the DON nor will it be considered in the award decision. However, all proposing SBCs must refer to the DoW SBIR/STTR Program BAA to ensure compliance with DSIP Volume 4 requirements.
- **Supporting Documents (Volume 5).** Supporting Documents (Volume 5) will not be considered in the selection process and will only undergo a compliance review to ensure the proposing SBC has included items in accordance with the DP2 SUBMISSION INSTRUCTIONS section above.
- **Fraud, Waste, and Abuse Training Certificate (Volume 6).** Not evaluated.
- **Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Volume 7).** Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Volume 7) will be assessed as part of the Due Diligence Program to Assess Security Risks. Refer to the DoW SBIR/STTR Program BAA to ensure compliance with Volume 7 requirements.

ADDITIONAL SUBMISSION CONSIDERATIONS

This section details additional items for proposing SBCs to consider during proposal preparation and submission process.

Foreign Risk Evaluation (FRE) Program to Assess Security Risks. 15 U.S.C. §638(vv) requires the Department of War, in coordination with the Small Business Administration, to establish and implement a due diligence program, known as Foreign Risk Evaluation (FRE) Program, to assess and, when possible, mitigate security risks presented by SBCs seeking a Federally funded award. Please review the Certifications and Registrations section of the DoW SBIR/STTR Program BAA for details on how DoW will assess security risks presented by SBCs. The FRE Program to Assess Security Risks will be implemented for all Phases.

Discretionary Technical and Business Assistance (TABA).

The Small Business Innovation and Economic Security Act Section 7 mandates agencies offer TABA. The purpose of TABA is to assist awardees in making better technical decisions on SBIR/STTR projects; solving technical problems that arise during SBIR/STTR projects; minimizing technical risks associated with SBIR/STTR projects; commercializing the SBIR/STTR product or process, including intellectual property protections and cybersecurity assistance; and screening for potential foreign involvement in technology development or commercialization activities. TABA services can be provided through vendor(s) selected by the SBC or the SBC may propose use of TABA funding to hire new staff, augment staff, or direct staff to conduct or participate in training activities consistent with the purpose of TABA as detailed above. The Phase II TABA amount, if proposed, cannot include any profit/fee by the proposing SBC and must be inclusive of all applicable indirect costs. TABA cannot be used in the calculation of general and administrative expenses (G&A) for the SBIR proposing SBC. An SBC receiving TABA will be required to submit a report detailing the results and benefits of the service received. This TABA report will be due at the time of submission of the final report.

Request for TABA funding will be reviewed by the DON SBIR/STTR Program Management Office.

If proposing a TABA Provider, the following MUST be included in the request or be subject to denial.

- Provider(s)
- Provider(s) point of contact, email address, and phone number
- An explanation of the provider's unique qualifications to provide the TABA service
- Tasks that will be performed by the provider (to include the purpose and objective of the assistance)
- Total provider(s) cost, number of hours, and labor rates (average/blended rate is acceptable)

If proposing TABA funding to hire new staff, augment staff, or direct staff to conduct or participate in training activities consistent with the purpose of TABA, the following MUST be included or be subject to denial.

- Name(s), position(s), business need to be filled, and/or training to be provided
- Number of employees to be hired, augmented, or directed to participate in training activities
- Qualifications of employees hired or augmented, or detailed need for training
- Tasks that will be performed (to include the purpose and objective of the assistance)
- Total staff/training cost, number of hours, and labor rates (average/blended rate is acceptable)

TABA requests must be included in the proposal as follows:

- Phase II:

- DON Phase II Cost Volume (provided by the DON SYSCOM) - the value of the TABA request.
- Supporting Documents (Volume 5) – a detailed request for TABA (as specified above) specifically identified as “TABA” in the section titled Additional Cost Information when using the DON Supporting Documents template.

Proposed values for TABA must NOT exceed:

- Phase II: A total of \$25,000 per award, not to exceed \$50,000 per Phase II project, included in the Phase II award amount.

Disclosure of Information (DFARS 252.204-7000). In order to eliminate the requirements for prior approval of public disclosure of information (in accordance with DFARS 252.204-7000) under this award, the proposing SBC shall identify and describe all fundamental research to be performed under its proposal, including subcontracted work, with sufficient specificity to demonstrate that the work qualifies as fundamental research. Fundamental research means basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons (defined by National Security Decision Directive 189). An SBC whose proposed work will include fundamental research and requests to eliminate the requirement for prior approval of public disclosure of information must complete the DON Fundamental Research Disclosure and upload as a separate PDF file to the Supporting Documents (Volume 5) in DSIP as part of their proposal submission. The DON Fundamental Research Disclosure is available on https://navysbir.com/links_forms.htm and includes instructions on how to complete and upload the completed Disclosure. Simply identifying fundamental research in the Disclosure does NOT constitute acceptance of the exclusion. All exclusions will be reviewed and, if approved by the Government Contracting Officer, noted in the contract.

Majority Ownership in Part. Proposing SBCs 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 DON topics advertised within this BAA.

For proposing SBCs 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, proposing SBCs must register with the SBA Company Registry Database.
- b. The proposing SBC 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://navysbir.com/links_forms.htm. Include the SBIR VC Certification in the Supporting Documents (Volume 5).
- c. Should a proposing SBC become a member of this ownership class after submitting its proposal and prior to any receipt of a funding agreement, the proposing SBC must immediately notify the Contracting Officer, register in the appropriate SBA database, and submit the required certification, which can be found on https://navysbir.com/links_forms.htm.

System for Award Management (SAM). It is strongly encouraged that proposing SBCs register in SAM, <https://sam.gov>, by the Close date of this BAA, or verify their registrations are still active and will not expire within 60 days of BAA Close. Additionally, proposing SBCs should confirm that they are registered to receive contracts (not just grants) and the address in SAM matches the address on the proposal. An SBC selected for an award **MUST** have an active SAM registration at the time of award or they will be considered ineligible.

Cybersecurity Maturity Model Certification (CMMC) Program. DoW has established the CMMC Program to verify that awardees have implemented required security measures necessary to safeguard Federal Contract Information (FCI) and Controlled Unclassified Information (CUI). CMMC Level requirements are identified within each topic and must be met prior to award. Proposing SBCs should carefully review and consider the CMMC requirements as compliance may impact proposed costs and technical approach. Please review the DoW SBIR/STTR Program BAA for additional information on the CMMC Program.

Notice of NIST SP 800-171 Assessment Database Requirement. The purpose of the National Institute of Standards and Technology (NIST) Special Publication (SP) 800-171 is to protect Controlled Unclassified Information (CUI) in Nonfederal Systems and Organizations. As prescribed by DFARS 252.240-7997, in order to be considered for award, an SBC is required to implement NIST SP 800-171 and shall have a current assessment uploaded to the Supplier Performance Risk System (SPRS) which provides storage and retrieval capabilities for this assessment. The platform Procurement Integrated Enterprise Environment (PIEE) will be used for secure login and verification to access SPRS. For brief instructions on NIST SP 800-171 assessment, SPRS, and PIEE, please visit <https://www.sprs.csd.disa.mil/nistsp.htm>. For in-depth tutorials on these items please visit <https://www.sprs.csd.disa.mil/webtrain.htm>.

Human Subjects, Animal Testing, and Recombinant DNA. If the use of human, animal, and recombinant DNA is included under a DP2 proposal, please carefully review the requirements at: <https://www.nre.navy.mil/work-with-us/how-to-apply/compliance-and-protections/research-protections>. This webpage provides guidance and lists approvals that may be required before contract/work can begin.

International Traffic in Arms Regulation (ITAR). For topics indicating ITAR restrictions or the potential for classified work, limitations are generally placed on disclosure of information involving topics of a classified nature or those involving export control restrictions, which may curtail or preclude the involvement of universities and certain non-profit institutions beyond the basic research level. Small businesses must structure their proposals to clearly identify the work that will be performed that is of a basic research nature and how it can be segregated from work that falls under the classification and export control restrictions. As a result, information must also be provided on how efforts can be performed in later phases if the university/research institution is the source of critical knowledge, effort, or infrastructure (facilities and equipment).

SELECTION, AWARD, AND POST-AWARD INFORMATION

Notifications. Email notifications for proposal receipt (approximately one week after the Phase I BAA Close) and selection are sent based on the information received on the proposal Cover Sheet (Volume 1). Consequently, the e-mail address on the proposal Cover Sheet must be correct.

Debriefs. Requests for a debrief must be made within 15 calendar days of select/non-select notification via email as specified in the select/non-select notification. Please note debriefs are typically provided in writing via email to the Corporate Official identified in the proposal of the proposing SBCs within 60 days of receipt of the request. Requests for oral debriefs may not be accommodated. If contact information for the Corporate Official has changed since proposal submission, a notice of the change on company letterhead signed by the Corporate Official must accompany the debrief request.

Protests. Interested parties have the right to protest in accordance with the procedures in FAR Subpart 33.1.

Pre-award agency protests related to the terms of the BAA must be served to: osd.ncr.ousd-r-e.mbx.SBIR-STTR-Protest@mail.mil. A copy of a pre-award Government Accountability Office (GAO) protest must also be filed with the aforementioned email address within one day of filing with the GAO.

Protests related to a selection or award decision should be filed with the appropriate Contracting Officer for an Agency Level Protest or with the GAO. Contracting Officer contact information for specific DON Topics may be obtained from the DON SYSCOM Program Managers listed in Table 2 above. For protests filed with the GAO, a copy of the protest must be submitted to the appropriate DON SYSCOM Program Manager and the appropriate Contracting Officer within one day of filing with the GAO.

Awards. Due to limited funding, the DON reserves the right to limit the number of awards under any topic. Any notification received from the DON that indicates the proposal has been selected does not ultimately guarantee an award will be made. This notification indicates that the proposal has been selected in accordance with the evaluation criteria and has been sent to the Contracting Officer to conduct cost analysis, confirm eligibility of the proposing SBC, and to take other relevant steps necessary prior to making an award.

Contract Types. The DON will consider the following for award: Cost Plus Fixed Fee (CPFF), Firm Fixed Price (FFP), Basic Ordering Agreement (BOA), or Prototype Other Transaction (OT).

Contract Deliverables. Contract deliverables are typically progress reports and final reports. Required contract deliverables must be uploaded to <https://www.navysbirprogram.com/navydeliverables/>.

Transfer Between SBIR and STTR Programs. Section 4(b)(1)(i) of the SBIR and STTR Policy Directive provides that, at the agency's discretion, projects awarded a Phase I under a BAA for SBIR may transition in Phase II to STTR and vice versa.

Navy SBIR Transition Program (STP). Phase II awardees have the opportunity to participate in the virtual Navy STP Kickoff during the first or second year of the Phase II contract. While there are no travel costs associated with this virtual event, Phase II awardees should budget time of up to a full day to participate. STP information can be obtained at: <https://navystp.com>. Phase II awardees will be contacted separately regarding this program.

PHASE III GUIDELINES

A Phase III SBIR/STTR award is any work that derives from, extends, or completes effort(s) performed under prior SBIR/STTR funding agreements, but is funded by sources other than the SBIR/STTR programs. This covers any contract, grant, or agreement issued as a follow-on Phase III award or any contract, grant, or agreement award issued as a result of a competitive process where the awardee was an SBIR/STTR firm that developed the technology as a result of a Phase I or Phase II award. The DON will give Phase III status to any award that falls within the above-mentioned description. Consequently, DON will assign SBIR/STTR Data Rights to any noncommercial technical data and noncommercial computer software delivered in Phase III that were developed under SBIR/STTR Phase I/II effort(s). Government prime contractors and their subcontractors must follow the same guidelines as above and ensure that companies operating on behalf of the DON protect the rights of the SBIR/STTR firm.

Department of the Navy
SBIR DOW 2026 BAA
Topic Index
Release 5

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DON26BZ05-DV084	DIRECT TO PHASE II: Innovative Flexible Fuel Cell Design
DON26BZ05-DV085	DIRECT TO PHASE II: Persistent Non-Destructive Inspection System for Airfield Readiness and Foreign Object Debris Mitigation
DON26BZ05-DV086	DIRECT TO PHASE II: Development of Customized Aerospace Lightweight, High Power, High Frequency Bandwidth, Nanocrystalline EMI Filters
DON26BZ05-DV087	DIRECT TO PHASE II: Edge-Deployed Explainable Digital-Twin Condition Based Maintenance CBM+ Platforms for Carrier-Based Systems

DON26BZ05-DV081 TITLE: DIRECT TO PHASE II: Intelligent Data Analysis of Post-Mission Reporting Artifacts & Data

OUSW (R&E) CRITICAL TECHNOLOGY AREA(S): Applied Artificial Intelligence (AAI)

COMPONENT TECHNOLOGY PRIORITY AREA(S): Trusted AI and Autonomy

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Establish a framework using advanced, automated analytics, allowing various users to parse and query different data types from large datasets. The framework will use innovative and automated methods for comprehensive and efficient data analysis to support data-driven decisions based on post-mission reporting databases.

DESCRIPTION: The U.S. Navy collects vast amounts of high-quality data for training and operational use. While the quantity and quality of this data are crucial for advanced automation and smart systems, effectively using it presents a significant challenge. The Navy requires a solution that enables personnel who are not data scientists to easily connect, analyze, and visualize data from various sources. The goal is to empower them to make data-driven decisions that improve operational and training efficiency. The increasing volume and complexity of data within the Fleet demand an advanced analysis solution that surpasses traditional methods. This topic seeks a platform that allows personnel to “conversationally” access and utilize extensive data resources, thereby enhancing the Fleet's analytical capabilities. The ideal solution will be a user-friendly platform for creating and sharing interactive reports and dashboards, fostering a culture of data-driven collaboration and decision-making.

Key Solution Requirements:

The proposed solution must be robust, scalable, and capable of efficiently handling large, heterogeneous datasets. It should include the following features:

- Connect to a wide range of data sources, including spreadsheets, SQL databases, cloud services, and on-premises resources. It must also transform raw data by cleaning and preparing it for analysis.
- Offer an intuitive interface that allows naval personnel of varying expertise to interact with the tools and interpret results in real-time or near real-time. Users should be able to create relationships between data tables, define measures, and build calculations.
- Enable users to ask questions and propose analyses in plain language and receive relevant visualizations as answers. This conversational approach will bridge the gap between data experts and non-specialists.
- Provide comprehensive data visualization functions, allowing users to explore and present insights through interactive charts, graphs, tables, and other visual representations like maps and figures.
- Integrate automated data preprocessing and cleansing techniques to ensure data quality and consistency.
- The accuracy of the outputs is paramount. The solution must provide transparent, explainable methods so personnel can understand and trust the rationale behind data-driven recommendations. Users must also have access to manual methods to verify the results.

- The solution must adhere to the Department of War's (DoW) ethical principles (Responsible, Equitable, Traceable, Reliable, Governable), current policies on automated technology, and all Risk Management Framework (RMF) guidance.

Work produced in Phase II may become classified. Note: The prospective contractor(s) must be U.S. owned and operated with no foreign influence as defined by 32 U.S.C. § 2004.20 et seq., National Industrial Security Program Executive Agent and Operating Manual, unless acceptable mitigating procedures can and have been implemented and approved by the Defense Counterintelligence and Security Agency (DCSA) formerly Defense Security Service (DSS). The selected contractor and/or subcontractor must be able to acquire and maintain a secret level facility and Personnel Security Clearances. This will allow contractor personnel to perform on advanced phases of this project as set forth by DCSA and NAVAIR in order to gain access to classified information pertaining to the national defense of the United States and its allies; this will be an inherent requirement. The selected company will be required to safeguard classified material during the advanced phases of this contract IAW the National Industrial Security Program Operating Manual (NISPOM), which can be found at Title 32, Part 2004.20 of the Code of Federal Regulations.

PHASE I: For a Direct to Phase II topic, the Government expects that the small business will have accomplished the following in a Phase I-type effort and developed a concept for a workable prototype or design to address, at a minimum, the basic requirements of the stated objective above. The following actions would be required to satisfy the requirements of Phase I:

- Previous work designing and developing advanced analytic techniques, methods, and models with technical approaches relevant to this topic.
- Evidence that a previous capability is feasible within a relevant domain or using publicly available training data, with clear parallels to the needs of DoW post-mission analysis use cases.
- The ability to ingest various data types, prepare the data, and output initial visualizations. This includes identifying advanced and automated processing solutions for text, audio, and graphics.
- A clear description of existing prototypes, matured capabilities, or modules to be leveraged, developed, and extended under the Phase II effort.

FEASIBILITY DOCUMENTATION: Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e., the small business must have performed Phase I-type research and development related to the topic NOT solely based on work performed under prior or ongoing federally funded SBIR/STTR work) and describe the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above.

PHASE II: Develop and prototype the proposed solution, demonstrating its ability to integrate with sample Navy post-mission air data files or similar data types. The prototype must be capable of the following:

- Ingest and prepare a variety of synthetic or real-world data types.
- Allow users to conduct analysis through a natural and user-friendly interface that supports human-in-the-loop and human-on-the-loop interaction.
- Present relevant data visualizations based on the analysis.
- Ensure that all outputs are transparent and include a method for verifying their accuracy.

Given the rapidly evolving nature of this domain, the development strategy should focus on:

- Leveraging available tools and infrastructures to maximize the potential for transition to government users.
- Minimizing lifecycle sustainment costs and accelerating the maturation of the solution.

The project must adhere to all appropriate DoW policies and address cybersecurity requirements to support a future Authority to Operate (ATO).

Work in Phase II may become classified. Please see note in the Description section.

PHASE III DUAL USE APPLICATIONS: Mature the prototype developed in Phase II and transition it into a fully operational capability for deployment across relevant Navy platforms and acquisition programs. This includes:

- Completing final integration and conducting operational testing and evaluation with designated partners.
- Ensuring the technology is robust, scalable, and ready for sustained use within the Naval Aviation training and/or operational environment.

The intelligent data analysis framework developed under this topic has significant commercial potential across numerous private sectors. Any industry that generates large volumes of complex data, such as finance, healthcare, logistics, and manufacturing, could benefit from a platform that allows non-technical users to perform advanced analytics through natural language queries, with verified results. Commercial applications include business intelligence, market trend analysis, supply chain optimization, and predictive maintenance. The technology's ability to democratize data analysis makes it a highly valuable tool for any organization seeking to foster a data-driven culture and gain a competitive advantage.

REFERENCES:

1. Russell, S. J., & Norvig, P. (2016). Artificial intelligence: a modern approach. Pearson Education Limited. <https://www.worldcat.org/title/1124776132>
2. Ouyang, L., Wu, J., Jiang, X., Almeida, D., Wainwright, C., Mishkin, P., Zhang, C., Agarwal, S., Slama, K., Ray, A., Schulman, J., Hilton, J., Kelton, F., Miller, L., Simens, M., Askell, A., Welinder, P., Christiano, P. F., Leike, J., & Lowe, R. (2022). Training language models to follow instructions with human feedback. *Advances in Neural Information Processing Systems*, 35, 27730-27744. https://proceedings.neurips.cc/paper_files/paper/2022/hash/b1efde53be364a73914f58805a001731-Abstract-Conference.html
3. Wei, J., Tay, Y., Bommasani, R., Raffel, C., Zoph, B., Borgeaud, S., Yogatama, D., Bosma, M., Zhou, D., Metzler, D., Chi, E. H., Hashimoto, T., Vinyals, O., Liang, P., Dean, J., & Fedus, W. (2022). Emergent abilities of large language models. <https://arxiv.org/abs/2206.07682>
4. Goodfellow, I., Bengio, Y. & Courville, A. (2016). Deep learning. MIT Press. <https://www.deeplearningbook.org/>
5. National Science & Technology Council, Artificial Intelligence Research & Development Interagency Working Group, Subcommittee on Networking & Information Technology Research & Development, Subcommittee on Machine Learning & Artificial Intelligence, and the Select Committee on Artificial Intelligence of the National Science & Technology Council. (2019). 2016–2019 Progress report: advancing artificial intelligence R&D. Executive Office of the President of the United States. <https://www.nitrd.gov/pubs/AI-Research-and-Development-Progress-Report-2016-2019.pdf>
6. Select Committee on Artificial Intelligence of the National Science & Technology Council. (2019). The national artificial intelligence research and development strategic plan: 2019 update. Executive Office of the President of the United States. <https://www.nitrd.gov/pubs/National-AI-RD-Strategy-2019.pdf>
7. Defense Innovation Board. (2019). AI principles: recommendations on the ethical use of artificial intelligence by the Department of Defense. Department of Defense. https://media.defense.gov/2019/Oct/31/2002204458/-1/-/1/0/DIB_AI_PRINCIPLES_PRIMARY_DOCUMENT.PDF
8. National Industrial Security Program Executive Agent and Operating Manual (NISP), 32 U.S.C. § 2004.20 et seq. 1993”. <https://www.ecfr.gov/current/title-32/subtitle-B/chapter-XX/part-2004>

KEYWORDS: Artificial Intelligence; Machine Learning; Data Analytics; Natural Language Processing; Data Visualization; Big Data

DON26BZ05-DV082 TITLE: DIRECT TO PHASE II: Cross-domain Interface for Trusted Access & Data Exchange Logic

OUSW (R&E) CRITICAL TECHNOLOGY AREA(S): Quantum and Battlefield Information Dominance (Q-BID)

COMPONENT TECHNOLOGY PRIORITY AREA(S): Advanced Computing and Software

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Develop a bi-directional software Cross Domain System (CDS) guard capable of executing on expeditionary, small form factor, fielded modular computer systems with a Peripheral Component Interconnect Express (PCIe) open systems interface.

DESCRIPTION: The Navy (aircraft and ships) requires a bi-directional software CDS guard capable of executing on small form factor, modular, removable, commercially available, and affordable computer systems with PCIe open standard interfaces to increase interoperability. The host hardware must contain, at a minimum, a 10-core processor, 64 GB of DDR5 RAM, 2 TB of SSD storage, and multiple I/O ports, including at least four (4) 1 GigE outputs, four (4) USB outputs, and one HDMI or DisplayPort interface. The CDS guard software and architecture will support rapid rule set updates enabling more efficient certification and approval processes by the National Security Agency (NSA). A key development objective is to provide an affordable software licensing and updated approach that reduces acquisition and sustainment cost of ownership for the Navy.

The CDS guard software architecture will allow for rapid implementation of business rules provided by the Government as Government Furnished Equipment (GFE) following award (classified content). The CDS guard software architecture must support updating and maintaining the software rule set within a data library maintained by the contractor to facilitate rapid business rule updates required for emergent systems. The CDS guard must support up to 100 Mbps of data parsing, including video streams, tracks, messaging, and voice, and must also support data logging.

Work produced in Phase II may become classified. Note: The prospective contractor(s) must be U.S. owned and operated with no foreign influence as defined by 32 U.S.C. § 2004.20 et seq., National Industrial Security Program Executive Agent and Operating Manual, unless acceptable mitigating procedures can and have been implemented and approved by the Defense Counterintelligence and Security Agency (DCSA) formerly Defense Security Service (DSS). The selected contractor and/or subcontractor must be able to acquire and maintain a secret level facility and Personnel Security Clearances. This will allow contractor personnel to perform on advanced phases of this project as set forth by DCSA and NAVAIR in order to gain access to classified information pertaining to the national defense of the United States and its allies; this will be an inherent requirement. The selected company will be required to safeguard classified material during the advanced phases of this contract IAW the National Industrial Security Program Operating Manual (NISPOM), which can be found at Title 32, Part 2004.20 of the Code of Federal Regulations.

PHASE I: For a Direct to Phase II topic, the Government expects that the small business will have accomplished the following in a Phase I-type effort and developed a concept for a workable prototype or design to address, at a minimum, the basic requirements of the stated objective above. The following actions would be required to satisfy the requirements of Phase I:

DIRECT TO PHASE II: Cross-domain Interface for Trusted Access & Data Exchange Logic (CITADEL) has demonstrated the use of cross domain guard on commercial single board computer solutions while emphasizing affordability, modularity, and rapid prototyping, while maintaining high assurance through hardware and software controls.

FEASIBILITY DOCUMENTATION: Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e., the small business must have performed Phase I-type research and development related to the topic NOT solely based on work performed under prior or ongoing federally funded SBIR/STTR work) and describe the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above.

PHASE II: Develop and demonstrate a bi-directional CDS guard running on four (4) commercial off-the-shelf (COTS), removable, plug and play computer modules to support cross domain data parsing of Internet Protocol (IP)-based High Frequency (HF) track data, voice and messaging. One of the computer modules will host the guard and include four (4) 1 GIGe ports to support guard functions, while the remaining computer modules will operate as independent enclaves with bi-directional data exchange through the guard.

Develop a software architecture capable of approval by the NSA that provides a means of updating rule sets through a partitioned software layout scheme that minimizes the need for repeated NSA re-approval. Deliver a prototype containing the CDS guard software and COTS hardware.

Work in Phase II may become classified. Please see note in the Description section.

PHASE III DUAL USE APPLICATIONS: Focus on operational testing, certification, and transition of the bi-directional CDS guard to fleet platforms supporting Distributed Maritime Operations and Combined Joint All-Domain Command and Control. Perform final testing that includes integration with afloat and ashore command-and-control systems, validation on COTS and Small Form Factor Modular hardware, and security accreditation in coordination with the NSA. Support transition through Navy program offices responsible for tactical networks, maritime operations centers, and joint fires integration. Package the solution for rapid installation using open standards to support scalable deployment across surface, subsurface, aviation, and expeditionary forces.

Phase III outcomes will directly enable fleet-wide adoption and sustainment through government-owned data rights and modular upgrade paths.

The proposed CDS guard has strong dual-use potential for commercial sectors that require secure data transfer between networks of differing trust levels. Critical infrastructure operators, including energy, transportation, and port authorities, can leverage this technology to protect operational technology while sharing real-time data with enterprise systems. Financial services, healthcare networks, and cloud service providers can apply the same rules-based data transfer to comply with regulatory and cybersecurity requirements. The software-defined architecture enables adaptation for commercial environments without dependence on classified hardware. These markets provide a sustainable commercial pathway while preserving Department of Defense mission relevance.

REFERENCES:

1. Smith, Scott. "Shedding Light on Cross Domain Solutions." SANS Institute, 09 December 2015. <https://www.sans.org/white-papers/36492>
2. Sundaravarathan, Vignesh. "Cross-Domain Solutions (CDS): A Comprehensive Survey." IEEE Access, Vol. 12, 26 September 2024. <https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=10721459>
3. National Industrial Security Program Executive Agent and Operating Manual (NISP), 32 U.S.C. § 2004.20 et seq. 1993". <https://www.ecfr.gov/current/title-32/subtitle-B/chapter-XX/part-2004>

KEYWORDS: Cross Domain Solution; Bi-Directional Data Transfer; Distributed Maritime Operations; Combined Joint All-Domain Command and Control; Software-Defined Guard; Tactical Edge Computing

DON26BZ05-DV083 TITLE: DIRECT TO PHASE II: Solution to Reduce Towing Based Mishaps During Flightline Operations

COMPONENT TECHNOLOGY PRIORITY AREA(S): Trusted AI and Autonomy

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Develop advanced, modular technology to enhance situational awareness and collision-prevention during aircraft towing operations; both at land-based airfields and on shipboard flight decks.

DESCRIPTION: Towing procedures are frequent and indispensable flightline operations, essential for repositioning aircraft and other rolling support equipment for maintenance, fueling, parking, and deployment. Towing related mishaps can damage aircraft and ground support equipment, require costly repairs, and negatively impact mission readiness.

The Navy is seeking innovative solutions that can retrofit existing towing units with modern technology to enhance situational awareness for towing crews. The solution must be compatible with current Navy tow tractors (Mid-Range Tow Tractor (MRTT), Shipboard Tow Tractor (STT), and Large Land-Based Tow Tractor (LLTT)) and meet the rigorous military environmental conditions of the fleet. The proposed system must comply with all naval requirements, including operation in an Emission Controlled (EMCON) environment and meet electromagnetic interference (EMI) requirements for both shipboard and shore-based operations. The system must remain fully functional whether or not the unit is actively towing an object. Additionally, it must provide the towing crew with sufficient time to make informed decisions and prevent unintended collisions, accounting for acceleration and inertial effects.

The solution should incorporate real-time alert systems to warn towing crews of imminent collisions or innovative intervention systems capable of stopping the towing unit to prevent accidents. The approach may employ low-tech, human-in-the-loop solutions or high-tech, fully autonomous systems, provided mission needs are met. By reducing human error and improving operational safety, this technology will significantly decrease towing-related mishaps and help protect valuable military assets.

PHASE I: For a Direct to Phase II topic, the Government expects that the small business will have accomplished the following in a Phase I-type effort and developed a concept for a workable prototype or design to address, at a minimum, the basic requirements of the stated objective above. The following actions would be required to satisfy the requirements of Phase I:

Technical feasibility has been demonstrated through prior development and evaluation of a modular collision-awareness and intervention capability applicable to aircraft towing operations. Core sensing, alerting, and control functions have been prototyped and tested in relevant operational conditions. Prior efforts validated real-time proximity detection, operator alerting performance, and system integration with representative towing platforms.

These activities reduced key technical risks related to sensing accuracy, alert latency, integration, and operational compatibility. The technology is sufficiently mature to proceed directly to Phase II prototype refinement, integration, and fleet-relevant testing.

FEASIBILITY DOCUMENTATION: Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e., the small business must have performed Phase I-type research and development related to the topic NOT solely based on work performed under prior or ongoing federally funded SBIR/STTR work) and describe the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above.

PHASE II: Demonstrate the solution's ability to alert the towing team and enhance situational awareness in real-world operational environments, significantly reducing the risk of mishaps. Based on the results of

this demonstration, a determination will be made regarding next steps and a detailed plan developed for further optimization and integration into military towing platforms and operational procedures. Phase II deliverables include a developed Technical Data Package, maintained system specifications, and an evaluation and analysis report detailing the reliability of the technical approach, as well as the maintainability and sustainability of the hardware and software. The report shall also include a thorough evaluation of Supply Chain Risk Management (SCRM). Additionally, training documentation, manuals, and aids shall be developed as part of the Phase II deliverables. At the conclusion of Phase II, a final prototype demonstration will be conducted at NAS Lakehurst or NAS PAX. The system will be tested on existing towing units, such as the MRTT, STT, and LLTT, during standard towing procedures and operations to validate the effectiveness of the developed technology.

PHASE III DUAL USE APPLICATIONS: Phase III will focus on either Low-Rate Initial Production (LRIP) or Full Rate Production (FRP) and deployment of the solution, including integration with existing towing equipment and procedures, as well as the implementation of training programs to ensure effective utilization by personnel.

Partnerships with military agencies and contractors will be established to support widespread adoption, and commercialization opportunities for civilian aviation applications will be explored to extend the technology's impact beyond military operations. Documentation of operational outcomes, including reductions in mishap rates and cost savings, will be provided to demonstrate the solution's value and scalability.

The project has significant benefits to the commercial airspace industry. Towing aircraft plays an important role in commercial flight operations. Solutions developed in this effort can be utilized by major airports ensuring the reduction of unnecessary incidents that may result in schedule delays and increase overall operation safety.

REFERENCES:

1. EMI Compliance: MIL-STD-461 methods RE102 and RS103
https://quicksearch.dla.mil/qsdocdetails.aspx?ident_number=35789
2. EME Compliance: MIL-STD-464
https://quicksearch.dla.mil/qsDocDetails.aspx?ident_number=35794
3. FAA Circular: AC 450.179-1 Ground Safety
https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1040342
4. FAA Circular: AC 00-34B Aircraft Ground Handling and Servicing
https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1042894
5. FAA Circular: AC 00-65A Towbar and Towbarless Movement of Aircraft
https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1042052
6. Ruggedization: MIL-STD-810
https://quicksearch.dla.mil/qsDocDetails.aspx?ident_number=35978

KEYWORDS: Aviation Crunches; Towing; Sensors; Situational Awareness; Autonomy; Human – Machine interaction; Decision Aid

DON26BZ05-DV084 TITLE: DIRECT TO PHASE II: Innovative Flexible Fuel Cell Design

OUSW (R&E) CRITICAL TECHNOLOGY AREA(S): Contested Logistics Technologies (LOG)

COMPONENT TECHNOLOGY PRIORITY AREA(S): Sustainment

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Develop and evaluate innovative fuel cell materials and processes to produce Class A, Type I crashworthy self-sealing fuel cells compliant with MIL-DTL-27422F.

DESCRIPTION: The Department of the Navy (DON) is seeking flexible fuel cell construction solutions that will meet MIL-DTL-27422F requirements for Class A Type I fuel cells. The DON is seeking advanced manufacturing processes, procedures, materials and technology that contribute to the fast production of fuel cells (weeks not months) while having low defects, reworks, and maintaining flexibility and quality.

Modern manufacturing processes and techniques shall be used to ensure the fuel cell remains lightweight, pliable, and foldable to facilitate installation into airframe structural cavities while providing sufficient performance to withstand crash impact loads at velocities of 65 feet per second. The self-sealing solution shall be capable of operating at temperatures down to -40°F and pressures of 1.5 psi.

Work produced in Phase II may become classified. Note: The prospective contractor(s) must be U.S. owned and operated with no foreign influence as defined by 32 U.S.C. § 2004.20 et seq., National Industrial Security Program Executive Agent and Operating Manual, unless acceptable mitigating procedures can and have been implemented and approved by the Defense Counterintelligence and Security Agency (DCSA) formerly Defense Security Service (DSS). The selected contractor and/or subcontractor must be able to acquire and maintain a secret level facility and Personnel Security Clearances. This will allow contractor personnel to perform on advanced phases of this project as set forth by DCSA and NAVAIR in order to gain access to classified information pertaining to the national defense of the United States and its allies; this will be an inherent requirement. The selected company will be required to safeguard classified material during the advanced phases of this contract IAW the National Industrial Security Program Operating Manual (NISPOM), which can be found at Title 32, Part 2004.20 of the Code of Federal Regulations.

PHASE I: For a Direct to Phase II topic, the Government expects that the small business would have accomplished the following in a Phase I-type effort and developed a concept for a workable prototype or design to address, at a minimum, the basic requirements of the stated objective above. The below actions are required to satisfy the requirements of Phase I:

Availability of material level-data and defined proof of concept for fuel cell construction designs and/or applications validating the concept.

FEASIBILITY DOCUMENTATION: Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e., the small business must have performed Phase I-type research and development related to the topic NOT solely based on work performed under prior or ongoing federally funded SBIR/STTR work) and describe the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above.

PHASE II: The Phase II approach shall align with qualification activities outlined in MIL-DTL-27422F, prioritizing crash impact, performance, gunfire performance, and flexibility evaluations. Material coupons, panels, and cube(s) shall be produced. Testing shall be performed to demonstrate and validate that the technology, materials, and processes meet the requirements defined in MIL-DTL-27422.

Work in Phase II may become classified. Please see note in Description paragraph.

PHASE III DUAL USE APPLICATIONS: Scale up the technology to produce aircraft-representative articles and validate compliance with MIL-DTL-27422F testing for a rotary platform.

Technology developed under this topic can be applied to joint services, as well as foreign Military Sales, and could be implemented into commercial aircraft as well. FAA requirements are less stringent than military requirements, therefore providing a safer product that could be implemented into commercial applications.

REFERENCES:

1. MIL-DTL-27422F, DETAIL SPECIFICATION: TANK, FUEL, CRASH-RESISTANT, BALLISTIC-TOLERANT, AIRCRAFT (06-FEB-2014). https://everyspec.com/MIL-SPECS/MIL-SPECS-MIL-DTL/MIL-DTL-27422F_49706/
2. National Industrial Security Program Executive Agent and Operating Manual (NISP), 32 U.S.C. § 2004.20 et seq. 1993”. <https://www.ecfr.gov/current/title-32/subtitle-B/chapter-XX/part-2004>
3. MIL-STD-801E, DEPARTMENT OF DEFENSE TEST METHOD STANDARD (10-AUG-2017), INSPECTION AND ACCEPTANCE STANDARDS FOR FLEXIBLE FUEL CELLS AND FITTINGS. https://everyspec.com/MIL-STD/MIL-STD-0800-0899/MIL-STD-801E_55757/

KEYWORDS: Fuel Cell; Fuel Bladder; MIL-DTL-27422; Crashworthy; Manufacturing; Flexible

DON26BZ05-DV085 TITLE: DIRECT TO PHASE II: Persistent Non-Destructive Inspection System for Airfield Readiness and Foreign Object Debris Mitigation

OUSW (R&E) CRITICAL TECHNOLOGY AREA(S): Applied Artificial Intelligence (AAI)

COMPONENT TECHNOLOGY PRIORITY AREA(S): Trusted AI and Autonomy

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Develop a continuous, sensor-based inspection solution that provides real-time data on airfield surface conditions and Foreign Object Debris (FOD) risks, with outputs that support established airfield assessment practices (e.g., Pavement Condition Index (PCI) and alignment with applicable ASTM/FAA standards, without prescribing specific report formats or alerting implementations.

DESCRIPTION: Develop a sensor-based system to inspect and analyze airfield surfaces. The system will be evaluated on its ability to reproduce the Pavement Condition Index (PCI) – consistent assessments, aligned with ASTM D 5340 and applicable FAA Advisory Circular guidance, as currently used by airfields and funding sponsors to prioritize airfield maintenance and repair activities related to FOD generation. The system will also be evaluated on its ability to detect, identify, and distinguish airfield surface features, including pavement markings, vegetation, and debris (FOD).

Any system developed must be capable of operating persistently without interfering with airfield operations. For the purposes of the topic, “without interfering” is defined as operating in a manner that does not require additional runway, taxiway, or apron closures; does not introduce operational delays; and does not increase operator burden. Any platform utilized must also be capable of transitioning to an autonomously operated system that can be integrated into a larger airfield management digital architecture, beginning the FOD Operational Decision Network.

PHASE I: For a Direct to Phase II topic, the Government expects that the small business will have accomplished the following in a Phase I-type effort and developed a concept for a workable prototype or design to address, at a minimum, the basic requirements of the stated objective above. The following actions would be required to satisfy the requirements of Phase I:

This portion of the work will focus on sensor development and qualification. The system must be able to quantify probability of detection to identify, distinguish, and quantify PCI features within a 95% confidence interval.

- Identify PCI elements and current measurement techniques
- Develop sensors capable of measuring PCI features
- May utilize existing and available data and/or Artificial Intelligence (AI)/Machine Learning (ML) to categorize features
- Define a method for measuring performance of sensors (e.g., did you detect all flaws/features? Are you able to accurately quantify the magnitude of each feature?)
- Distinguish PCI features from markings, vegetation, FOD, etc.

FEASIBILITY DOCUMENTATION: Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e., the small business must have performed Phase I-type research and development related to the topic NOT solely based on work performed under prior or ongoing federally funded SBIR/STTR work) and describe the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above.

PHASE II: Integrate sensors that were developed in a Phase I-type effort into a system capable of operating on an active airfield. Ensure that the system is capable of evaluating defined airfield pavement

sections and identifying all Pavement Condition Index (PCI) distress features across 100% of the accessible inspected area. Inspection boundaries should be defined by the airfield pavement section limits provided for demonstration. Inspection frequency should be sufficient to support repeatable PCI evaluation and maintenance prioritization. For areas that are inaccessible due to operational, safety, or physical constraints, the system should document coverage gaps and demonstrate an acceptable method for accounting for these areas in the resulting PCI assessment. Demonstrate that the dataset can be evaluated to reproduce a PCI report for a pavement section for both asphalt and concrete (as defined by the American Society for Testing and Materials (ASTM) standard in the references). Include in the dataset examples of all features defined in the PCI. (Note: If a single section does not contain examples of all features, multiple sections can be used.)

Include the following key elements:

- Integration into a platform capable of operating on an airfield
 - Creation of a new pavement evaluation method that contains sufficient data to also produce a legacy PCI report
 - Production of near real-time pavement condition updates based on scan periodicity
 - Integration with FOD data systems and digital twins
- Prepare a Phase III commercialization/transition plan.

PHASE III DUAL USE APPLICATIONS: Integrate the technology into the larger FOD System-of-Systems managed and funded within Naval Air Warfare Center Aircraft Division (NAWCAD). The Department of Navy (DON) Zero FOD program is the primary transition partner, but this system will produce information that will inform facilities requirements (e.g., Naval Facilities Engineering Systems Command (NAVFAC), Marine Corps Installations Command (MCICOM), Commander, Navy Installations Command (CNIC)).

Airfield recapitalization is an aviation industry problem, with the civil aviation community facing the same challenges as the Department of War (DoW). A comprehensive, automated evaluation of pavement surfaces coupled with a risk-based approach addresses the Federal Aviation Administration's (FAA) mandate to produce 40-year pavement surfaces. These tools will also facilitate prioritization of FAA Airport Improvement Program (AIP) funds that are used to recapitalize civil aviation airfields. The Zero FOD program is in direct coordination with the FAA and DOW facilities commands to develop an operational condition index that is based on the data this project will develop.

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KEYWORDS: FOD; Facilities; Pavement; Digital Airfield; Artificial Intelligence/Machine Learning; AI/ML; Infrastructure

DON26BZ05-DV086 TITLE: DIRECT TO PHASE II: Development of Customized Aerospace Lightweight, High Power, High Frequency Bandwidth, Nanocrystalline EMI Filters

OUSW (R&E) CRITICAL TECHNOLOGY AREA(S): Scaled Directed Energy (SCADE)

COMPONENT TECHNOLOGY PRIORITY AREA(S): Directed Energy (DE)

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Design, develop, test, and deliver a lightweight, high power, high frequency bandwidth, common mode voltage cancellation (CMVC) electromagnetic interference (EMI) filter optimized for aerospace power generation applications.

DESCRIPTION: The U.S. Navy is embarking on opportunities for increased aerospace platform electrification to meet its unique demands on aircraft power and propulsion systems which drives a significant need for increased power density and high temperature components. A key enabler is wide bandgap (WBG) device-based power conversion. These technologies bring significant benefits to improving fielded aerospace electrical power system challenges while also driving towards new advanced platform capabilities. However, they also bring a new set of significant challenges, namely electromagnetic interference (EMI) and electromagnetic compatibility (EMC) which, if not mitigated properly, may lead to avionics or mission system degradation jeopardizing the platform's warfighting mission readiness.

Nanocrystalline materials are an emerging technology that provide opportunity to bring significant weight savings to common mode (CM) inductors due to its high saturation flux density, high temperature capability, and low core losses. While existing COTS nanocrystalline magnetic cores have mainly focused on high power, low frequency (i.e., industrial drives) or low power, high frequency (i.e., radio frequency system) applications, the Navy requires high power and high frequency bandwidth nanocrystalline cores to achieve desired filter attenuation performance and power density requirements for military aerospace applications. In many cases, the components required for these aerospace applications (e.g., tactical fighter aircraft or future hybrid electric/fully electric aircraft) differ significantly from existing COTS components required for commercial electric vehicle markets due to the higher power, increased power density, and more stringent EMI requirements in the military aerospace environment.

This topic is focused on maturation of the materials and components to enable development of system level filter hardware solutions that are reliable and maintain high performance response for military aerospace applications, with option for commercial use, as documented in DO-160 and MIL-STD-461 for EMI performance.

The solution should demonstrate a greater than 50% weight reduction compared to commercial off-the-shelf (COTS) CMVC filters and inductor components through the development and use of customized high power and high frequency bandwidth nanocrystalline core materials.

PHASE I: For a Direct to Phase II topic, the Government expects that the small business will have accomplished the following in a Phase I-type effort and developed a concept for a workable prototype or design to address, at a minimum, the basic requirements of the stated objective above. The following actions would be required to satisfy the requirements of Phase I:

The Government expects that the small business will be able to demonstrate experience in the development, manufacture, and test of passive nanocrystalline magnetic core materials across various end-use applications. The small business should include skills and expertise necessary to support

advanced research and development in the materials and understand development and integration into CMVC EMI filter devices.

FEASIBILITY DOCUMENTATION: Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e., the small business must have performed Phase I-type research and development related to the topic NOT solely based on work performed under prior or ongoing federally funded SBIR/STTR work) and describe the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above.

PHASE II: Focus on research and development toward significant material and component-level improvements of passive high power and high frequency bandwidth nanocrystalline core materials that enable system level reductions in Size, Weight, Power, and Cooling (SWaP-C) of a CMVC EMI filter for aerospace power generation applications. Develop designs that consider requirements set forth in both DO-160 and MIL-STD-461 for EMI performance. Consider innovative design methodologies and experimentation to mature the CMVC EMI filter technology to a minimum of TRL 5 through testing and demonstration in a lab environment as a threshold requirement. Conduct required additional testing and demonstration to TRL 6 in a relevant end-use application environment. Deliver a minimum of two CMVC EMI filter units with the expected greater than 50% weight reduction in comparison to existing COTS designs with demonstrated significant improvements in filter attenuation.

PHASE III DUAL USE APPLICATIONS: Deliver flight-representative prototype CMVC EMI filters for integration into a selected aerospace generator or power system with planned integrated system test, ground test, and flight test.

High power, high frequency, nanocrystalline core materials and filter components have opportunity for dual-use applications in commercial aerospace that have similar rigorous SWaP-C and EMI/EMC demands.

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KEYWORDS: Inductor; nanocrystalline; electromagnetic interference filter; high frequency; electrical power system; aerospace

DON26BZ05-DV087 TITLE: DIRECT TO PHASE II: Edge-Deployed Explainable Digital-Twin Condition Based Maintenance CBM+ Platforms for Carrier-Based Systems

OUSW (R&E) CRITICAL TECHNOLOGY AREA(S): Applied Artificial Intelligence (AAI)

COMPONENT TECHNOLOGY PRIORITY AREA(S): Advanced Computing and Software

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Develop Digital Twin modeling and simulation, leveraging existing and new sensors to detect faults and predict possible failures in Aircraft Launch and Recovery Equipment (ALRE) to provide advance notice and prepare “maintainers” performing Condition Based Maintenance (CBM).

DESCRIPTION: Carrier-based aviation platforms under NAVAIR generate massive, high-frequency streams of voltage, current, pressure, vibration, and temperature data across multiple subsystems—from the Advanced Arresting Gear (AAG) and steam catapults to hydraulic deck handlers and fuel-management valves—but Denied, Disrupted, Intermittent, Limited (DDIL) connectivity in carrier deployment forces maintenance crews to batch-download raw logs via physical media and ferry them ashore for analysis, introducing critical delays that can obscure early indicators of seal leakage, actuator fatigue, or control-valve drift, drive up unscheduled maintenance and lifecycle costs, and jeopardize sortie rates and aircrew safety in forward-deployed environments. DoDI 4151.22 mandates that CBM+ be “examined, evaluated, integrated, and incorporated” into weapon-system engineering and sustainment plans to optimize readiness and reduce life-cycle costs, and OPNAVINST 4790.16C requires Navy program managers to document CBM+ implementation and assess CBM+ maturity at every acquisition and sustainment review. By embedding a reusable, edge-deployed digital-twin core with semantic-AI reasoning, CBM+ workstations directly fulfill these requirements, enabling on-platform prognostics, formal CBM+ documentation, and continuous maturity assessments throughout NAVAIR system development and fielding.

Topic Focus: The Navy seeks proposals for an edge-deployed (at the point of need, e.g., on the ship), explainable (i.e., Explainable Artificial Intelligence) Digital-Twin CBM+ Platform—hereafter “CBM+ Workstation”—that:

1. Ingests & Reduces High-Rate Sensor Streams Onboard. Leverage model-order-reduction and adaptive sampling to transform raw sensor traces (e.g., water-twister pressure, hydraulic fluid temperature, vibrations, noise, electric-motor power conditioning system sensors, etc.) into compact, information-rich features in real time into compact, high-value analysis that facilitates transmission under DDIL limitations.
 2. Embeds Hybrid Physics & Semantic-AI Reasoning. Fuse first-principles Digital Twin models with maintenance-domain knowledge graphs and shipboard asset and contextual mission-specific knowledge graphs to automatically infer and explain emerging fault modes, delivering human-readable diagnostics rather than opaque alerts, and providing fault isolation to the Lowest Replaceable Unit (LRU).
 3. Supports Plug-and-Play Workstation Generation. Provide a secure developer API to instantiate customer-specific CBM+ “workstations” for any carrier-based subsystem, enabling rapid customization and field upgrades without source-code changes.
 4. Meets Shipboard Resilience Standards. Demonstrate performance on MIL-SPEC or ruggedized hardware, with <1 second anomaly-detection latency and <10 MB/hour data-transfer footprints to shore when intermittent links reconnect.
 5. Provide integration via high-level APIs with shore-based analytics and logistics processes.
- By funding this topic, the Navy will catalyze a reusable, standards-based CBM+ solution family—accelerating deployment of predictive-maintenance workstations across the fleet, reducing unscheduled downtime, and ensuring mission readiness even in contested, communication-limited environments.

PHASE I: For a Direct to Phase II topic, the Government expects that the small business will have accomplished the following in a Phase I-type effort and developed a concept for a workable prototype or design to address, at a minimum, the basic requirements of the stated objective above. The following actions would be required to satisfy the requirements of Phase I:

Established the feasibility of the edge-deployed, explainable CBM+ Workstation by focusing on a representative NAVAIR subsystem, such as the Advanced Arresting Gear (AAG).

FEASIBILITY DOCUMENTATION: Offerors interested in participating in Direct to Phase II must include in their response to this topic Phase I feasibility documentation that substantiates the scientific and technical merit and Phase I feasibility described in Phase I above has been met (i.e., the small business must have performed Phase I-type research and development related to the topic NOT solely based on work performed under prior or ongoing federally funded SBIR/STTR work) and describe the potential commercialization applications. The documentation provided must validate that the proposer has completed development of technology as stated in Phase I above.

PHASE II: Develop a prototype CBM+ workstation core that operates on representative edge-computer hardware and processes live data from an AAG test site. Demonstrate semantic-AI fault inference for at least two critical AAG failure modes (such as seal leakage or valve blockage), generating confidence metrics and natural-language explanations to decrease maintenance downtime and improve AAG availability. Utilize existing sensor systems to perform electrical and mechanical diagnostics and prognostics. Create a software interface capable of automatically generating a lightweight CBM+ workstation for a second carrier subsystem, like the catapult accumulator system.

PHASE III DUAL USE APPLICATIONS: Transition the CBM+ Workstation from a prototype to a fully operational, supported, and scalable solution for the MK15 Advanced Arresting Gear and the Navy, while also pursuing broader commercial applications.

Commercial or industrial sites with limited network connectivity could greatly benefit from an edge-deployed digital twin for a variety of systems (additive manufacturing, HVAC systems, etc.).

REFERENCES:

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KEYWORDS: Diagnostics; Prognostics; Health management; Digital twin; CBM+; Edge-compute