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

IMPORTANT

- **The following instructions apply to topics:**
  - **DON26BZ05-NV068 through DON26BZ05-NV080**

- 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.dodsbirsttr.mil/submissions/login. 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.

- **DON Phase I Technical Volume (Volume 2) page limit is not to exceed 10 pages.**

- 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.

- Phase I Technical Volume (Volume 2) and Supporting Documents (Volume 5) templates, specific to DON topics, are available at https://www.navysbir.com/links_forms.htm.

- The DON may consider the following FAR and Non-FAR contract strategies when issuing Phase I awards: Firm Fixed Price (FFP), Basic Ordering Agreement (BOA), or Prototype Other Transaction (OT). The DON may consider the following FAR and Non-FAR contracting strategies when issuing Phase II awards: Cost Plus Fixed Fee (CPFF), FFP, BOA, or Prototype 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.

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	Navy 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 COMMANDS (SYSCOM) SBIR PROGRAM MANAGERS

Topic Numbers	Point of Contact	SYSCOM	Email
DON26BZ05-NV068 to DON26BZ05-NV079	Ms. Kristi DePriest	Naval Air Systems Command (NAVAIR)	navair-sbir@us.navy.mil
DON26BZ05-NV080	Mr. Scott Steward	Strategic Systems Programs (SSP)	ssp.sbir@ssp.navy.mil

PHASE I SUBMISSION INSTRUCTIONS

The following section details requirements for submitting a compliant Phase I 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 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.

Proposal Volumes. The following seven volumes are required.

- **Proposal Cover Sheet (Volume 1).** As specified in DoW SBIR/STTR Program BAA.

- **Technical Proposal (Volume 2)**
  - Technical Proposal (Volume 2) must meet the following requirements or the proposal will be REJECTED:
    - Not to exceed ten (10) pages, regardless of page content
    - 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
    - Include, within the ten-page limit of Volume 2, an Option that furthers the effort in preparation for Phase II and will bridge the funding gap between the end of Phase I and the start of Phase II. Tasks for both the Phase I Base and the Phase I Option must be clearly identified. Phase I Options are exercised upon selection for Phase II.
    - Work proposed for the Phase I Base must be exactly six (6) months.
    - Work proposed for the Phase I Option must be exactly six (6) months.

  - Additional information:
    - A Phase I proposal template specific to DON to meet Phase I requirements is available at https://navysbir.com/links_forms.htm
    - 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).**
  - Cost Volume (Volume 3) must meet the following requirements or the proposal will be REJECTED:
    - The Phase I Base amount must not exceed $200,000.
    - Phase I Option amount must not exceed $115,000.
    - Costs for the Base and Option must be separated and clearly identified in Volume 3.
    - For Phase I, a minimum of two-thirds of the work is performed by the proposing SBC. The two-thirds percentage of work requirement must be met in the Base costs as well as in the Option costs. DON will not accept deviations from the minimum percentage of work requirements for Phase I. 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 (Total Subcontractor Costs (TSC)) as the numerator and the total cost of the proposal (i.e., Total Cost before Profit Rate is applied) as the denominator.
      - Proposing SBC Costs (included in numerator for calculation of the SBC):
        - Total Direct Labor (TDL)
        - Total Direct Material Costs (TDM)
        - Total Direct Supplies Costs (TDS)
        - Total Direct Equipment Costs (TDE)
        - Total Direct Travel Costs (TDT)
        - Total Other Direct Costs (TODC)
        - General & Administrative Cost (G&A)

        NOTE: G&A, if proposed, will only be attributed to the proposing SBC.
      - Subcontractor Costs (numerator for subcontractor calculation):
        - Total Subcontractor Costs (TSC)
      - Total Cost (i.e., Total Cost before Profit Rate is applied, denominator for either calculation)
    - **Cost Sharing: Cost sharing is not accepted on DON Phase I proposals. A value above or below $0.00 entered in the Cost Sharing field will not be considered in the Phase I contract award.**

  - Additional information:
    - 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. When a proposal is selected for award, be prepared to submit further documentation to the SYSCOM Contracting Officer to substantiate costs (e.g., an explanation of cost estimates for equipment, materials, and consultants or subcontractors).

- **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.

  - Proposing SBCs must review and submit the following items, as applicable:
    - **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. 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 (TABA), 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) in Volume 5 (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 (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 15 U.S.C. §638(vv) 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.

PHASE I EVALUATION AND SELECTION

The following section details how the DON SBIR/STTR Programs will evaluate Phase I 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 the Proposal Cover Sheet as specified in the DoW SBIR/STTR Program BAA.

- **Technical Volume (Volume 2).** The DON will evaluate and select Phase I 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:
  - Not to exceed ten (10) pages, regardless of page content
  - 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.
  - Include, within the 10-page limit of Volume 2, an Option that furthers the effort in preparation for Phase II and will bridge the funding gap between the end of Phase I and the start of Phase II. Tasks for both the Phase I Base and the Phase I Option must be clearly identified.
  - Work proposed for the Phase I Base must be exactly six (6) months.
  - Work proposed for the Phase I Option must be exactly six (6) months.

- **Cost Volume (Volume 3).** The Cost Volume (Volume 3) will not be considered in the selection process and will only 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 ($200,000) and Option ($115,000).
  - Must meet minimum percentage of work; a minimum of two-thirds of the work is performed by the proposing SBC. The two-thirds percentage of work requirement must be met in the Base costs as well as in the Option costs. DON will not accept deviations from the minimum percentage of work requirements for Phase I.
  - **Cost Sharing: Cost sharing is not accepted on DON Phase I proposals. A value above or below $0.00 entered in the Cost Sharing field will not be considered in the Phase I contract award.**

- **Company Commercialization Report (CCR) (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 PHASE I 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 I 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 I:
  - Online DoW Cost Volume (Volume 3) – 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.
- 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 I: A total of $6,500, in addition to the Phase I award amount.
- 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, 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 anticipate that a Projected CMMC Level for Phase II award may be higher than the Projected CMMC Level advertised in the Phase I topic. 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. Due to the short timeframe associated with Phase I of the SBIR/STTR process, the DON does **not** recommend the submission of Phase I proposals that require the use of Human Subjects, Animal Testing, or Recombinant DNA. For example, the ability to obtain Institutional Review Board (IRB) approval for proposals that involve human subjects can take 6-12 months, and that lengthy process can be at odds with the Phase I goal for time-to-award. Before the DON makes any award that involves an IRB or similar approval requirement, the proposing SBC must demonstrate compliance with relevant regulatory approval requirements that pertain to proposals involving human, animal, or recombinant DNA protocols. It will not impact the DON's evaluation, but requiring IRB approval may delay the start time of the Phase I award and if approvals are not obtained within two months of notification of selection, the decision to award may be terminated. If the use of human, animal, and recombinant DNA is included under a Phase I or Phase II 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.

Government Furnished Equipment (GFE). Due to the typical lengthy time for approval to obtain GFE, it is recommended that GFE is not proposed as part of the Phase I proposal. If GFE is proposed, and it is determined during the proposal evaluation process to be unavailable, proposed GFE may be considered a weakness in the technical merit of the proposal.

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 SBC 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 compliance review of Volume 3 to confirm eligibility of the proposing SBC, and to take other relevant steps necessary prior to making an award.

Contract Types. A Firm Fixed Price (FFP), Basic Ordering Agreement (BOA), or Prototype Other Transaction (OT) may be used for Phase I awards.

Funding Limitations. In accordance with the SBIR and STTR Policy Directive section 4(b)(5), there is a limit of one sequential Phase II award per SBC per topic. The maximum Phase I proposal/award amount including all options (including TABA) is $315,000. The Phase I Base amount must not exceed $200,000 and the Phase I Option amount must not exceed $115,000. The maximum Phase II proposal/award amount including all options (including TABA) is $2,000,000 (unless non-SBIR/STTR funding is being added). Individual SYSCOMs may award amounts, including Base and all Options, of less than

$2,000,000 based on available funding. The structure of the Phase II proposal/award, including maximum amounts as well as breakdown between Base and Option amounts will be provided to all Phase I awardees either in their Phase I award or a minimum of 30 days prior to the due date for submission of their Initial Phase II proposal.

Contract Deliverables. Contract deliverables for Phase I are typically a kick-off brief, progress reports, and a final report. Required contract deliverables (as stated in the contract) must be uploaded to https://www.navysbirprogram.com/navydeliverables/.

Payments. The DON makes three payments from the start of the Phase I Base period, and from the start of the Phase I Option period, if exercised. Payment amounts represent a set percentage of the Base or Option value as follows:

Days from Start of Base Award or Option	Payment Amount
15 Days	50% of Total Base or Option
90 Days	35% of Total Base or Option
180 Days	15% of Total Base or Option

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.

PHASE II GUIDELINES

Evaluation and Selection. All Phase I awardees may submit an **Initial** Phase II proposal for evaluation and selection. The evaluation criteria for Phase II is the same as Phase I (as stated in this BAA). The Phase I Final Report and Initial Phase II Proposal will be used to evaluate the SBC's potential to progress to a workable prototype in Phase II and transition the technology to Phase III. Details on the due date, content, and submission requirements of the Initial Phase II Proposal will be provided by the awarding SYSCOM either in the Phase I contract or by subsequent notification.

Awards. The DON will consider the following for Phase II award: Cost Plus Fixed Fee (CPFF), Firm Fixed Price (FFP), Basic Ordering Agreement (BOA), or Prototype Other Transaction (OT). Phase II awards can be structured in a way that allows for increased funding levels based on the project's transition potential. To accelerate the transition of SBIR/STTR-funded technologies to Phase III, especially those that lead to Programs of Record and fielded systems, the Commercialization Readiness Program was authorized and created as part of section 5122 of the National Defense Authorization Act of Fiscal Year 2012. The statute set-aside is 1% of the available SBIR/STTR funding to be used for administrative support to accelerate transition of SBIR/STTR-developed technologies and provide non-financial resources for the SBCs (e.g., the Navy SBIR Transition Program, STP).

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

DON26BZ05-NV068 TITLE: Intelligent Tools for Naval Aircrew Performance and Readiness

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

COMPONENT TECHNOLOGY PRIORITY AREA(S): Human-Machine Interfaces

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Research, develop, and demonstrate innovative methods for designing intelligent human performance systems to enhance Naval Aircrew readiness. These systems will track, predict, and mitigate cognitive, physical, and psychological vulnerabilities, serving as prehabilitation and protection tools. A key focus is to empower aeromedical officers with effective tools and programs to proactively support aircrew readiness.

DESCRIPTION: Modern Naval Aviation operations place significant cognitive, physical, and psychological demands on aircrew tasked with operating sophisticated, highly integrated aircraft. While advanced training simulations exist, they often rely on static assessments or subjective observations, lacking the dynamic, predictive, and personalized capabilities needed to optimize aircrew readiness, prevent human factors-related issues, and mitigate physical and psychological injuries. Challenges such as cognitive overload, spatial disorientation, cognitive tunneling, fatigue, musculoskeletal injuries from prolonged vibration, and burnout—highlighted by recent research on helicopter aircrew—pose significant risks to mission success and safety, particularly in contested or degraded environments.
This topic seeks to develop an intelligent human performance system as a critical prehabilitation and protection tool, designed to augment and empower aeromedical officers in proactively managing aircrew readiness and well-being. The system will move beyond reactive responses to support aeromedical officers in optimizing aircrew performance through the following capabilities:
1. Proactive Performance Monitoring and Prediction:
Leverage intelligent tools to continuously assess aircrew cognitive state, physical performance, and psychological response using physiological sensors, eye-tracking, performance metrics, voice analysis, and validated self-reported measures (e.g., Military Readiness Scale - MRS-15). Predict potential vulnerabilities based on historical data and real-time inputs, providing actionable insights for aeromedical officers to inform interventions.
2. Personalized Insights and Recommendations:
Provide data-driven insights tailored to individual strengths, weaknesses, and predicted vulnerabilities. Aeromedical officers can use these insights to recommend personalized training protocols, prehabilitation exercises, cognitive conditioning, physical readiness programs, and psychological resilience strategies to mitigate fatigue, injury risk, and stress.
3. Human-System Vulnerability Identification:
Analyze interactions between aircrew and aircraft systems to identify human-system interface shortcomings or cognitive biases under specific conditions. This data will enable aeromedical officers to recommend improvements in aircraft design, cockpit ergonomics, and aircrew training methodologies, addressing readiness gaps and supporting proactive mitigations.
4. Trust Calibration through Data Transparency:
Provide transparent, objective data on aircrew performance and automated system behavior to foster appropriate levels of trust. Aeromedical officers can guide aircrew on when and how to rely on automation, preventing over-reliance or under-utilization, thereby enhancing operational safety and efficiency.
5. Building Resilience and Sustaining Readiness:
Utilize continuous feedback and predictive analytics to support mental fortitude, adaptability, and decision-making in high-stakes situations. The system will actively contribute to long-term aircrew readiness and operational lifespan under the guidance of aeromedical support teams.

Proposed solutions should focus on fundamental research into innovative tools for intelligent human performance monitoring and prediction, along with methods for rigorously evaluating their impact on aircrew cognitive function, physical responses, psychological state, and mission performance. Emphasis should be placed on a human-centric approach, ensuring actionable insights, alignment with aeromedical and clinical practice guidelines, and measurable, sustainable improvements in aircrew readiness as part of a comprehensive program.

PHASE I: Phase I will deliver a comprehensive feasibility study and preliminary design for intelligent tools aimed at Naval Aircrew performance and readiness. The proposed design must explicitly demonstrate its utility for aeromedical officers and include the following key elements:
1. Develop a detailed Concept of Operation (CONOPS) outlining the system's functional architecture, core intelligent system design (e.g., anomaly detection, predictive modeling), and data collection/analysis methods. The system must track, predict, and inform aircrew cognitive, physical, and psychological vulnerabilities to support expert review, intervention, and prevention.
2. Identify key Naval Aircrew performance metrics (e.g., flight/simulated flight performance, physiological responses, workload) and trust indicators that the system will monitor, predict, and influence for readiness assessment. This includes integration of established instruments such as the MRS-15.
3. Develop a proof-of-concept simulation or analytical model to demonstrate core data collection, analysis, and predictive capabilities. This demonstration should focus on a training pipeline or simplified flight/cockpit task and be presented to aeromedical officers and human performance experts (e.g., predicting disorientation from physiological cues).
4. Propose a methodology for evaluating system effectiveness in supporting aeromedical officers to improve Naval Aircrew performance, resilience, and readiness. This includes considerations for human subject safety, data privacy, ethical guidelines, and integration into existing Naval Aviation training and aeromedical review processes.
5. Design prototype user interfaces and data visualizations tailored for aeromedical officers. Ensure the system provides explainable insights and intervention rationale to maximize learning, protective benefits, and operational utility.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: The Phase II effort will deliver a prototype Intelligent Human Performance System designed as a deployed prehabilitation and protection tool for expert users, specifically aeromedical officers. Deliverables will include the following key components:

	Deliverable Description	Technical & Validation Metrics
1	Functional Prototype Development: Develop and test a fully functional prototype capable of robustly monitoring, predicting, and recommending interventions for Naval aircrew cognitive, physical, and psychological vulnerabilities during relevant aviation tasks.	• Emphasis on utility for aeromedical officers. • Provide actionable insights for expert-led interventions.
2	Rigorous Validation Studies: Conduct rigorous validation studies to demonstrate measurable improvements in aircrew operational performance, including reduced errors, enhanced decision-making under stress, and improved resilience.	• Must demonstrate statistically significant improvements. • Target a minimum 15% to 20% reduction in tactical/procedural errors under simulated stress. • Demonstrate a 10% to 15% improvement in decision-making latency without degradation in accuracy.

3	Explainable AI Insights: Ensure the system generates explainable aircrew performance insights and provides actionable, personalized prehabilitation recommendations.	• Designed for expert review and delivery during or after training sessions. • Must present clear physiological and psychological causal links to the aeromedical officer.
4	System Integration & Documentation: Provide comprehensive documentation of intelligent system algorithms, data requirements, and computational resources.	• Ensure seamless integration with physical/physiological sensors, aircraft systems, and training infrastructures. • Enable scalable deployment within Naval Aviation training units.
5	Transition & Sustainment Plan: Develop a detailed transition plan for deploying the system to Naval Aviation flight training units, mission rehearsal systems, and human factors/human performance research facilities.	• Outline clear roles for aeromedical officers and other expert users in sustaining aircrew readiness.
6	Ethical, Safety, & Data Privacy Protocol: Provide recommendations for ethical guidelines, data security protocols, and psychological support measures to ensure safe and effective deployment of the system in high-stakes military human performance contexts.	• Measures must be developed under the direct purview of aeromedical professionals. • Must include strict data anonymization/de-identification protocols to isolate and protect Personally Identifiable Information (PII) and Protected Health Information (PHI).

Human Subjects Research (HSR) and Regulatory Compliance:
All Phase II work involving human subjects, human data, or physiological/psychological monitoring shall be conducted in accordance with 32 CFR Part 219, DoDI 3216.02 (Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research), and 10 U.S.C. 980 (Limitation on Use of Humans as Experimental Subjects).

- Approvals: The contractor shall comply with DFARS Clause 252.235-7004 (Protection of Human Subjects). Prior to initiating any human testing, validation studies, or participant recruitment, the contractor must obtain both local Institutional Review Board (IRB) approval and subsequent secondary approval from the DoN Human Research Protection Official (HRPO).
- Proposal Structure: Offerors shall separate human-use research tasks from general technical/software development tasks within their Statement of Work (SOW) and cost proposals to prevent overall award delays.

PHASE III DUAL USE APPLICATIONS: The Phase III approach focuses on transitioning the prototype Intelligent Human Performance System developed in Phase II into operational use within Naval Aviation or other high-reliability organizations (HRO). This phase will emphasize scalability, integration into existing infrastructures, and commercialization opportunities to ensure widespread adoption and sustained impact on operator readiness. The system will be deployed as a prehabilitation and protection tool, empowering aeromedical officers or appropriate providers to proactively manage aircrew / operator performance and well-being.
Key Goals
1. Operational Deployment: Transition the system into active use within Naval Aviation training units, aeromedical facilities, and mission rehearsal systems and/or other appropriate HROs.

2. Scalability: Ensure the system can be scaled across multiple Naval Air Stations and training pipelines / other HROs.
3. Integration: Seamlessly integrate the system with existing Naval Aviation training infrastructures, physiological monitoring systems, and aeromedical review processes and/or other appropriate HRO processes.
4. Commercialization: Explore opportunities for broader adoption within other military branches, allied forces, and civilian aviation and/or HRO sectors.

Phase III Deliverables
1. Full System Deployment
• Production-Ready System: Deliver a fully operational version of the Intelligent Human Performance System, including:
o Advanced monitoring and prediction capabilities for cognitive, physical, and psychological vulnerabilities.
o Personalized insights and recommendations for aeromedical officers to deliver expert-led interventions.
o Integrated human-system vulnerability identification and mitigation tools.
• Deployment Locations: Implement the system at key Naval Air Stations (e.g., NAS Pensacola, NAS Whiting Field, NAS Corpus Christi) and training units and/or other identified HRO locations
2. Integration with existing Infrastructure
• Compatibility: Ensure seamless integration with the existing systems.
• Sensor Integration: Incorporate appropriate physiological sensors into the system for real-time data collection.
• Training Pipeline Integration: Embed the system into existing training pipelines, including mission rehearsal systems and flight simulators.
3. Expanded Functionality
• Advanced Analytics: Enhance predictive modeling capabilities to identify readiness gaps and optimize interventions.
• Performance Dashboard: Provide aeromedical officers with a comprehensive dashboard for tracking aircrew performance trends and outcomes.
• Scenario Customization: Enable instructors and aeromedical officers to design and modify training scenarios tailored to individual aircrew needs.
4. Validation and Certification
• Empirical Validation: Conduct large-scale validation studies to demonstrate measurable improvements in aircrew readiness, resilience, and operational performance.
• Authorization to Operate (ATO): Achieve ATO certification for deployment within Naval Aviation, ensuring compliance with NIST Risk Management Framework (RMF) standards.
• Ethical and Security Guidelines: Finalize ethical guidelines and data security protocols for system use in high-stakes military contexts.
5. Commercialization Strategy
• Military Expansion: Explore opportunities to deploy the system across other branches of the military (e.g., Air Force, Army) and allied forces.
• Civilian Aviation Applications: Adapt the system for use in civilian aviation, focusing on pilot readiness and safety.
• Partnerships: Establish partnerships with industry leaders, research institutions, and government agencies to support commercialization efforts.
This topic has significant potential to benefit the private sector, particularly in industries where human performance and safety are critical. The intelligent human performance system developed for Naval Aircrew can be adapted for use in civilian aviation, helping commercial pilots and air traffic controllers manage cognitive, physical, and psychological stressors to improve safety and operational efficiency. Secondary applications include:

1. Healthcare: The system's predictive analytics and physiological monitoring capabilities can be used in hospitals and clinics to track patient recovery, prevent burnout among healthcare workers, and optimize performance in high-pressure environments.
2. Emergency Response: Firefighters, paramedics, and law enforcement personnel can benefit from tools that monitor and enhance readiness during high-risk operations.
3. Sports and Athletics: Professional athletes and coaches can use the system to track physical and cognitive performance, prevent injuries, and optimize training regimens.

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KEYWORDS: Naval Aircrew; Human Performance; Physiological Sensors; Predictive Analytics; Aeromedical Officers; Readiness Assessment

DON26BZ05-NV069 TITLE: Wearable Real-Time Command-and-Control Interface for Enhanced Naval Situational Awareness

COMPONENT TECHNOLOGY PRIORITY AREA(S): Human-Machine Interfaces

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: Develop, demonstrate, and deliver a production-ready, wearable, real-time Command-and-Control (C2) interface utilizing Mixed Reality (MR) technology with spatial anchoring that integrates and fuses multi-domain naval sensor data from Joint All-Domain Command and Control (JADC2).

DESCRIPTION: The Department of the Navy faces critical operational challenges in delivering real-time C2 capabilities to personnel operating in complex, multi-domain maritime environments. Naval operations require processing vast amounts of multi-source intelligence from JADC2 while ensuring mobility, tactical effectiveness, and operator safety.
Operational Gaps:
Key challenges include:
• Information Overload: High-tempo operations result in multi-domain data saturation, reducing situational awareness.
• Mobility Constraints: Console-based systems limit operator mobility and adaptability in dynamic maritime environments.
• Environmental Limitations: Commercial wearables lack durability and functionality under maritime conditions, including exposure to salt spray, extreme temperatures, and high humidity.
• Test Range Deficiencies: Current test ranges lack integrated C2 capabilities across JADC2 domains.
• Laser Safety Compliance: Eye protection for Class 4 laser environments is required while accessing multi-domain data.
• REPLICATOR Program Needs: Human-autonomous system interfaces are essential for coordinated swarm operations
The objective of this topic is to develop, demonstrate, and deliver a production-ready, wearable, real-time C2 interface utilizing MR technology with spatial anchoring that integrates and fuses multi-domain naval sensor data from JADC2 with the purpose of enabling enhanced human-machine interfaces (HMIs) for geographically dispersed naval forces supporting Distributed Maritime Operations.
This interface must provide real-time, multi-source intelligence processing while maintaining mobility and tactical effectiveness, with initial deployment focused on test range operations and REPLICATOR autonomous systems integration.
Technical Requirements:
This effort demands MR capabilities, surpassing basic augmented reality (AR) systems. MR provides spatial anchoring of digital information to real-world objects, environmental understanding for safety-critical operations, and occlusion handling to ensure digital displays are appropriately hidden behind real-world hazards. These features are vital for naval operations where tactical data must be spatially registered to ship equipment, deck spaces, and operational areas while maintaining operator safety.
Existing Systems and Limitations:

Current systems include console-based combat information centers, handheld tactical computers, and tablet-based devices, all of which are vulnerable to maritime conditions. Commercial Off-The-Shelf (COTS) MR platforms, such as Microsoft HoloLens 2, Magic Leap 2, Apple Vision Pro (passthrough mode), and Meta Quest Pro (passthrough mode), provide foundational capabilities but lack maritime environmental qualification and military-grade cybersecurity features.
Technology Maturity:
• Integrated MR systems: TRL 6-7
• Maritime-qualified implementations: TRL 5-6
• JADC2 sensor fusion with laser safety integration: TRL 4-5
Performance Requirements:
Optimized for initial deployment in test range operations and REPLICATOR integration under non-combatant conditions:
• Operating temperature: -10°C to +50°C
• Water resistance: IPX6 rating
• Continuous operation: 12+ hours
• Data processing latency: <30ms
• Sensor integration: 10+ simultaneous inputs
• Display performance: 1 arc minute resolution, 90Hz refresh rate
• Angular tracking accuracy: sub-1 deg
• Security: FOUO/CUI processing capability
• Laser safety: ANSI Z136.1 and MIL-STD-1425 compliance
• Human performance: MIL-STD-1472H compliance
• Equipment Durability: MIL-STD-810 compliance
• REPLICATOR compatibility: Autonomous system interfaces and Common Control System (CCS) framework
Critical Innovation Areas:
Breakthrough development is required in:
• Laser-safe optical systems: Full MR functionality with Department of War (DoW)-approved eye protection for Class 4 laser environments.
• Adaptive brightness control: Handling extreme maritime lighting conditions and MIL-STD-1472 compliance
• Real-time processing architecture: Supporting 15+ simultaneous JADC2 data streams with AI-driven threat correlation.
• Ruggedized electronics: Surviving 1,000-hour salt spray exposure with MIL-STD-810 compliance.
• Quantum-resistant encryption: Enabling secure mesh networking.
• Autonomous system interfaces: Intuitive gesture and voice recognition for single-operator swarm management.
Security and Classification:
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: Define and develop a concept for a wearable MR C2 interface that meets performance and environmental constraints for test range and REPLICATOR applications. Demonstrate laser safety integration with full MR functionality. Validate cybersecurity framework for FOUO/CUI processing. Establish REPLICATOR integration baseline with autonomous system interface development. Perform modeling and simulation to provide initial assessment of concept performance. Phase I Option, if exercised, would include initial layout and capabilities description to build the unit in Phase II.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Develop production-ready hardware platform optimized for initial deployment environments. Implement JADC2 sensor fusion capabilities for test range and distributed maritime operations. Integrate REPLICATOR autonomous system interfaces and human-machine teaming protocols. Validate compatibility with Navy's Common Control System (CCS) framework. Demonstrate coordinated control of multiple autonomous platforms through MR interface. Complete commercial environmental qualification testing. Conduct operator evaluation with test range personnel and fleet operators. Deliver 5 prototype systems qualified for operational evaluation with complete technical data package and source code with Government Purpose Rights.
Work in Phase II may become classified. Please see note in Description section.

PHASE III DUAL USE APPLICATIONS: Integrate Phase II developed wearable interface with multiple platforms for enhanced crew situational awareness. Upgrade to full military environmental qualification including IPX8 rating, MIL-S-901D Grade A compliance, and SECRET-level processing capability. Expand REPLICATOR program integration for autonomous swarm coordination in distributed maritime operations with full combat capability. Scale manufacturing for naval platform deployment quantities. Commercial applications include maritime industry fleet management with real-time cargo and navigation data; offshore energy platform operations with safety-critical information overlay; port security operations integrating multiple sensor systems; manufacturing facilities with laser-intensive operations requiring worker protection; aerospace testing operations with complex instrumentation integration; and emergency response coordination with real-time situational awareness. Estimated total addressable market of $2.3B by 2030 across commercial maritime ($850M), industrial safety ($1.1B), and government/defense ($350M+) segments.

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KEYWORDS: Mixed Reality; Human machine interface; JADC2; REPLICATOR; Distributed Maritime Operations; Sensor Fusion

DON26BZ05-NV070 TITLE: Multi-Frequency Coverage Unit with Broad Band Interference and Designed Canceller

COMPONENT TECHNOLOGY PRIORITY AREA(S): Integrated Network Systems-of-Systems

PROJECTED CMMC LEVEL REQUIREMENT: Level 2 (Self)

OBJECTIVE: Design and develop an innovative high technology canceller that will retain critical mission communication/connectivity during self/co-site interference environment.

DESCRIPTION: An innovative canceller unit is sought after in a CNI (Communications, Navigation, Identification) system and retains communication/connectivity in an on-board interference environment. Modern CNI systems can be frequency agile using rapid frequency hopping to reduce susceptibility to narrow band jamming. This canceller will retain connectivity/communication with other aircraft and ground CNI systems to at least 120nms apart. With this CNI system is a TDMA-based (Time Division Multiple Access) secure, high-speed digital data link and does multiple random hops frequency. This canceller must be capability to handle high power in both transmit (UHF) and receive (UHF + interference).

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: Design and develop a canceller that allows operation of this CNI system during interference operations. Proof-of-concept and system effectiveness in a lab environment. Phase I canceller will show CNI system communication/connectivity to 70nmi apart during self/co-site interference. Lab testing is a concept to allow operation in an interference environment. This Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Validate a concept prototype with the actual interfere environment. Demonstration with this CNI system operation will include chamber-testing capability with the actual interference emitters. Phase II canceller will show CNI system communication/connectivity with great ranges during self/ co-site interference. Minimum requirements a unit is less than 6 in X 6 in X 12 in, less than 30 lbs. Will provide a maximum of 150W (+28Vdc).
Work in Phase II may become classified. Please see note in Description paragraph.

PHASE III DUAL USE APPLICATIONS: Validate the designated unit and support integration into a later specified aircraft. Conduct testing which verifies successful operation of the MIDS/JTRS unit with later specified jamming assignment.

Successful development of a canceller could be used by commercial aircraft receiving communication interference. A canceller would allow aircraft to receive information from other aircraft/ground-based

signals without getting interference. Private and commercial airlines could benefit from this technological development.

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KEYWORDS: Canceller; MIDS; Interference; MIDS/JTRS; EA-18G; Jamming; Connectivity

DON26BZ05-NV071 TITLE: Dynamically Generated, Articulated 3-Dimensional Training Content

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: Create a secure, user-friendly toolkit that enables rapid conversion of diverse Navy data sources (structured and unstructured) into photorealistic 3-dimensional (3-D) assets suitable for deployment in Augmented Reality (AR) and Mixed Reality (MR) training platforms and Live-Virtual-Constructive (LVC) environments. The solution should provide a low-code/no-code software platform for the automated generation of AR/MR training content that requires minimal source media while offering human-on-the-loop controls.

DESCRIPTION: The Navy increasingly relies on immersive training solutions utilizing Virtual, Augmented, and Mixed Reality (VR/AR/MR) to provide instructors with the flexibility to create realistic training scenarios, including fault injections and novel situations. However, the traditional development of interactive 3-D models remains a significant bottleneck, requiring months of intensive design, modeling, and coded scripting. This slow process hinders curriculum updates, constrains training throughput, and increases lifecycle costs. Navy initiatives demand technologies that accelerate content creation and refresh, particularly given emerging opportunities for advanced LVC training, adaptive tutoring, and rapid prototyping of virtual content.

Recent technological breakthroughs, such as neural radiance fields, 3-D Gaussian Splatting, and 3-D model diffusion, offer near-instant scene creation and real-time asset generation. Furthermore, advances in computing power and technology such as generative artificial intelligence (AI) enables the ingestion of large technical datasets to auto-draft procedures and annotations for instructional content. Despite these advances, existing solutions often lack the dynamic articulation, physics, and logic necessary for hands-on procedural practice and team interaction. Critically, fleet use cases require no-code tools that empower Subject Matter Experts (SMEs) to verify content outputs, embed adaptive cues, and seamlessly export to existing simulators and LVC systems. Dynamic articulation, multi-user networking, SME oversight, and standards-compliant export represent key transition hurdles.

Secure, user-friendly toolkit solutions are desired that enables the rapid conversion of diverse Navy data sources (structured and unstructured) into photorealistic 3-D assets suitable for deployment in AR and MR training platforms and LVC environments. The solution should provide a low-code/no-code software platform for the automated generation of AR/MR training content that requires minimal source media (e.g., smartphone photos, video, Computer-aided design model, or schematics) while offering human-on-the-loop controls for validation and refinement of models. These photorealistic 3-D assets should have articulating sub-components, respond to user actions, and drive the learning of procedural maintenance workflows. The toolchain must support easy export to a variety of Navy immersive reality training platforms and/or LVC environments or systems. The goal is to produce mission-specific, realistic content in days instead of weeks or months, leveraging actual fleet data and user-friendly tools.

This topic seeks an innovative capability that supports automated or semi-automated generation of AR/MR content from real-world data sources—such as maintenance records, after-action reports, sensor logs, or mission debriefs—and enables curriculum developers or instructors to generate varied training scenarios quickly and intuitively. The system should support parameterized scenario generation and include tools for editing or customizing scenarios without requiring software development skills.
Key technical elements may include:

• AI-assisted generation of 3-D assets, animations, or procedural scripts;
• Natural language processing (NLP) to parse textual data into scenario logic;
• Interfaces that allow low-code or no-code authoring of AR/MR content;
• Export capability to common AR/MR engines (Unity, Unreal) and Navy-deployed HMDs or mobile devices; and
• Security and compatibility with Navy computing environments.
The expected outcome is a toolchain that empowers training programs to rapidly create and deploy operationally relevant AR/MR training content, significantly reducing development time and cost while enhancing the effectiveness of Navy training programs.

PHASE I: Design and demonstrate the feasibility of a software solution for rapidly generating AR/MR training content for the Navy. This involves creating an end-to-end pipeline architecture blending emerging technologies like generative 3-D modeling and technical data parsing, enabling real-time part motion and interactive scenarios from minimal inputs. Key activities include developing a functional prototype system capable of ingesting operational or training datasets and outputting usable AR/MR scenarios, validating key technical components such as data parsing and low/no-code content editing, and creating a detailed plan for integration with Navy AR/MR platforms, while tracking return on investment metrics including time to generate, test, and integrate.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Develop and validate a robust, multi-asset prototype content generation toolkit based on the Phase I architecture. This includes enhancing the system to support diverse asset classes (e.g., pumps, power supplies) with capabilities like automated kinematics and collision physics, demonstrating a full technical workflow feeding training content to adaptive tutoring models and multi-user solutions, and ensuring compatibility with various export models and environments. Usability assessments with Navy personnel will validate effectiveness and time savings, deployment on Navy-relevant AR/MR systems will be demonstrated, and efforts will strive for an IL-4/IL-5-accredited or higher solution, including testing and validating established ROI metrics, fidelity, and realism.

PHASE III DUAL USE APPLICATIONS: Support the transition of the rapid content generation toolkit into a program of record for NAVAIR and other Department of War (DoW) components. Transition strategy will consider direct integration with existing Naval training systems that can minimize sustainment challenges through technology use and/or alignment with future training initiatives looking toward modernized technologies. Phase III activities will include integration and deployment of the technology for specific platforms and enabling government and fleet SMEs to convert technical data into interactive AR/MR training modules for critical systems and maintenance procedures.
Beyond NAVAIR, the effort will deliver technology for integration into LVC environments to enhance mission rehearsal realism and establish a long-term sustainment framework for software updates and user support. This focus will support expansion of Phase III effort to dual-use applications that allow for the adoption of the core technology for other government agencies and private sector markets with similar training needs. The resulting output is expected to establish a toolkit that can serve as a standard for SME-driven immersive content creation across the Navy, significantly reducing costs and timelines while increasing warfighter readiness.

The core technology of this toolkit has significant commercial potential in any industry reliant on complex, hands-on procedural training, such as commercial aerospace, advanced manufacturing, energy, and medical technology. These sectors face the same content creation bottlenecks as the military, needing to train technicians on high-value assets and frequently updated procedures. The requirement for a no-code, AI-powered platform directly addresses this market gap by enabling in-house experts, not programmers, to quickly convert engineering diagrams, service manuals, and operational data into interactive 3-D training experiences for AR and VR.

An expected commercialization strategy will likely be a tiered Software-as-a-Service (SaaS) model, making the platform accessible to both small businesses and large enterprises. The key competitive advantage is the AI-assisted workflow, which automates the generation of articulated, physics-enabled models from diverse data sources. This differentiates the solution from game engines requiring specialized developers and other no-code platforms that often produce only static visualizations. By solving the critical need for rapid and scalable immersive content, our toolkit is well-positioned for strong commercial success and sustainable revenue growth.

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KEYWORDS: Immersive training; 3-D content generation; Augmented/Virtual Reality (AR/VR); Low-code/no-code; Live Virtual Constructive (LVC); Virtual environments

DON26BZ05-NV072 TITLE: Digitally Enhanced Weapon System Technical Data

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

COMPONENT TECHNOLOGY PRIORITY AREA(S): Sustainment

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: Design, develop, and demonstrate a solution capable of rapidly delivering digitally enhanced weapon system technical data within 24 hours.

DESCRIPTION: Current practices often take weeks or months to provide fleet operators and maintainers with clear and actionable sustainment instructions to address emergent critical fleet issues. The challenges of rapidly fielding solutions and responding to critical operator and maintainer shortfalls require immediate action. This necessitates "just in time" (JIT) knowledge capture and transfer methods, applied as soon as engineers and subject matter experts (SMEs) determine the optimal solution for performing specific tasks. Current technical data, typically captured as text and static images, fails to fully convey the complexity of the systems being maintained. Enhanced video and interactive animations embedded in technical data improve readiness by enhancing maintenance proficiency at the operational level and reducing reliance on Depot-level maintenance.

The objective is to design, develop, and demonstrate a solution capable of rapidly delivering digitally enhanced weapon system technical data within 24 hours. The solution should include visual and interactive animation applications that enable technicians and operators to quickly understand and accurately execute complex procedures, as well as implement technical solutions to address emergent critical discrepancies with optimal speed and reliability.

Visual and interactive animations are the most effective and practical means to ensure correct and consistent performance of complex tasks and procedures. However, time and cost constraints often delay or block their development. These critical issues may involve technical data in both unclassified and classified realms. Prototype visual enhancements to technical data will be demonstrated in the form of maintenance videos, interactive animations, and other formats capable of being captured, processed, and deployed within a 24-hour timeframe. Solutions will also include the ability to provide same-day updates for emergent configuration management issues.

Leveraging existing logistics infrastructure, the enhanced visual and interactive technical data will be stored and deployed using the All Weapon Information System (AWIS) Repository. Demonstrated output formats will be accessible on laptops and tablets used by operators and maintainers in operational environments.

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: Phase I should produce a conceptual solution that includes the following:
1. Accurately capture and instantly communicate benchmarked best practices performed by SMEs through hardware-agnostic digital media applications, which will be embedded in current and future technical data within the AWIS Repository.
2. Ensure digital media applications include capabilities for both viewing actual visuals and interacting with animations, based on Program Office and user preferences.
3. Provide interactive animations with the ability to specifically identify and correctly order individual weapon system component parts.
4. Enable Program Office personnel and SMEs to virtually review, collaborate, and finalize individual digital media applications.
5. Include a Red Flag capability to complete and deliver individual digital media applications within 24 hours from the time of capture.
6. Ensure current Facility Clearance and personnel Security Clearances (including CACs) to work with classified technical data and equipment.
7. Demonstrate cybersecurity protocols and handling of Controlled Unclassified Information (CUI) in SOP format, with capability for CMMC 2.0 Certification.
The Phase I effort will include prototype plans to be developed and demonstrated under Phase II.

PHASE II: Demonstrate the capability to deliver a digitally enhanced weapon system technical data video solution within 24 hours for both classified and unclassified emergent critical discrepancies. The solution must include visual and interactive animation applications IAW MIL-STD-3001 PARTS 1-4
1. MIL-STD-3001-1 General Preparation of Digital Technical Information
Mandatory Baseline: Establishes the digital framework, XML/SGML schemas, and metadata standards. Your interactive animation interface, video metadata, and text descriptions must align with these general preparation rules.
2. MIL-STD-3001-2 Description, Principles of Operation, and Operation Data
Functional/Visual Concept: Governs how "Principles of Operation" are presented. Use this part to structure conceptual 3D animations explaining how the failed component/system operates and why the discrepancy occurred.
3. MIL-STD-3001-3 Testing and Troubleshooting Procedures
Diagnostic Video/Animations: Directs how step-by-step diagnostic procedures are structured. Your interactive troubleshooting animations or video guides showing technicians how to run built-in tests (BIT) or isolate the "emergent critical discrepancy" must align with this work package.
4. MIL-STD-3001-4 Maintenance Information with IPB
Corrective Action Video/Animations: Dictates how physical maintenance tasks (removal, installation, repair) are documented. Any rapid-response video or 3D interactive assembly/disassembly animation demonstrating how to physically fix the critical discrepancy must map to this part.
Work in Phase II may become classified. Please see note in Description paragraph.

PHASE III DUAL USE APPLICATIONS: Upon successful testing and demonstration, the capability will transition to operational programs and industry stakeholders to enable deployment across fleet platforms and enhance system readiness.
The digitally enhanced technical data solutions developed for naval weapon systems have the potential to deliver significant benefits to the private sector by advancing digital engineering, data interoperability, and lifecycle management practices. Technologies such as interactive technical manuals, model-based data environments, and automated diagnostics can be applied across commercial industries that maintain complex systems.

These capabilities can improve maintenance efficiency, reduce downtime, and support predictive maintenance through enhanced data accessibility and integration. Additionally, digital technical data platforms can enable improved training, remote support, and configuration management for large, distributed systems. Commercial sectors such as aviation maintenance, industrial equipment servicing, and logistics operations could leverage these tools to enhance operational reliability, workforce productivity, and lifecycle cost management.
As digital engineering adoption continues to grow across industries, innovations developed under this topic could transition into commercial digital asset management systems, smart maintenance solutions, and digital twin environments, creating broader economic value beyond their initial defense applications.

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KEYWORDS: Digital Engineering; Model-Based Systems Engineering (MBSE); Interactive Electronic Technical Manuals (IETM); Digital Twin; Technical Data Management; Predictive Maintenance

DON26BZ05-NV073 TITLE: Portable Digital Metrology System for Measurement of Defects on Optically Transparent Canopies and Windscreens

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 a portable digital metrology system to measure aircraft transparency damage (such as coating damage, scratches, cracks, or pits) that can be used on aircraft by squadron level maintenance personnel to characterize damage.

DESCRIPTION: Scratches and pits to the acrylic outer ply of canopies and windscreens cause optical distortion as well as structural vulnerability, and these types of damage cause significant readiness degradation. Repair methods for these defects are dependent on the severity of the damage which is determined by the dimensions of the defect. Currently available repair methods are limited and repair limitations are stringent and highly dependent on the severity of the defect. Inaccurate measurements could be the difference between a repairable asset and a scrapped transparency. Currently the only portable method for characterizing defects on aircraft transparencies is an optical micrometer. This tool is user-dependent, not ergonomic, and requires extensive training to be performed accurately. Due to the transparent material, it is also difficult to perform measurements with an optical micrometer on-aircraft or in outdoor environments and requires the removal of the canopy or windshield.
Candidate measurement concepts shall be executable on aircraft and capable of performing defect measurements (e.g., scratch defect with length 1”, width << 0.125”, and approx. depth of 0.100”) on optically transparent materials.

PHASE I: Define and develop a measurement concept and portable tool that can meet the requirements listed in the description. Perform analysis or testing to demonstrate measurement concept and portable tool performance.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Develop and demonstrate a prototype tool and/or process that meets the requirements listed in the Description. Prototype testing and demonstration shall be performed at the canopy shop at Fleet Readiness Center Southwest – North Island.

PHASE III DUAL USE APPLICATIONS: Perform final testing at organizational and intermediate level repair locations and transition for use on naval aircraft. Final testing shall include (at a minimum): total time and training required for full competency by a new user, precision/accuracy of measurement results in comparison to existing measurement tools, clarity and completion of documentation or measurement display provided to the end user, and applicability of tooling across multiple aircraft platforms/transparency materials.
This technology has significant dual-use potential for commercial airline Maintenance, Repair, and Overhaul (MRO) and automotive glass inspection.

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3. MIL-PRF-5425 Plastic, Sheet, Acrylic, Heat Resistant, https://quicksearch.dla.mil/qsDocDetails.aspx?ident_number=5396
4. NAVY SBIR 25.2-087 Repair Solution for Optically Transparent Canopies and Windscreens, https://www.navysbir.com/n25_2/N252-087.htm

KEYWORDS: Transparency; Acrylic Outer Ply; Canopy; Window; Windscreen; NDI; Optical Zone; Scratch and Pit Measurement

DON26BZ05-NV074 TITLE: Automated Post-Mission De-Brief and Re-Planning for Collaborative Combat Aircraft (CCA) Missions

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)

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: Develop automated capabilities for post-mission debriefs that enable rapid re-planning for future missions. By leveraging advanced analytics, diagnostics, and algorithms, this program aims to enhance mission effectiveness and adaptability of Collaborative Combat Aircraft (CCA) operations in contested environments by utilizing advanced analytics, diagnostics, and algorithms.

DESCRIPTION: Modern naval operations require the ability to adapt swiftly to evolving threats, especially during multi-day missions involving CCA. Current post-mission analysis is resource-intensive and often too slow to provide timely, actionable insights for subsequent engagements. This program aims to automate the post-mission debrief and re-planning process for CCA missions to enable faster, more informed decision-making.

The primary objective is to develop automated capabilities for post-mission debriefing that facilitate rapid re-planning for subsequent missions. By leveraging advanced analytics, diagnostics, and algorithms, this program seeks to enhance the mission effectiveness and adaptability of CCA operations in contested environments. The solution must deliver actionable insights from mission data to inform re-planning decisions, optimizing tactics and operational parameters in real-time for the next engagement.
The solution will concentrate on developing algorithms and tools to analyze mission data, identify key performance metrics, characterize uncertainty, and generate explainable recommendations for subsequent mission planning. The main areas of emphasis include:
• Blue Force Optimization: Refining the operational parameters, autonomy behaviors, algorithms, task allocation, routing, tactics, and employment concepts of collaborative combat aircraft based on mission outcomes. Recommendations should identify expected mission benefits, survivability implications, operational constraints, and confidence in the projected result.
• Red Force Modeling: Improving mission planning and execution through analysis of adversary tactics, capabilities, threat profiles, observed behaviors, and likely future course of action. The solution should identify uncertainty in Red Force assessments and provide alternative threat interpretations where the available evidence does not support a single high-confidence conclusion.
• Autonomous Re-Planning: Use machine learning, data analytics, optimization and decision-support methods to generate and compare potential follow-on mission plans based on real world outcomes and lessons learned. The solution should recommend multiple feasible courses of action, identify associated confidence levels and operational tradeoffs, and provide traceable rationale to support operator review and approval.
This effort will also seek to answer the following critical questions:

• What data points are most crucial for effective post-mission analysis and re-planning?
• How can systems be designed to enable rapid, iterative updates to mission plans?
• What mechanisms are most effective for selecting and adapting algorithms in real-time based on the available data?

By tackling these challenges, the program aims to create a framework that streamlines post-mission analysis and enables rapid, intelligent re-planning for CCA missions. This will ultimately enhance the effectiveness and survivability of naval assets in high-stakes environments.
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: Outline the strategy for tackling the post-mission debriefing and re-planning challenges unique to CCA missions. This process involves choosing suitable artificial intelligence (AI) or machine learning algorithms, supported by a comprehensive review of existing literature and prior research.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Develop the automated debrief and re-planning tools. Performers will implement their selected approach within a Navy-approved simulation environment, where they will demonstrate its effectiveness using multi-day mission simulations. The resulting solution must integrate seamlessly with existing CCA systems and include clear documentation for operational use.
Work in Phase II may become classified. Please see note in Description paragraph.

PHASE III DUAL USE APPLICATIONS: Transition the technology into operational systems supporting CCA and autonomous mission systems. It will be integrated with mission planning environments and autonomy framework to support the fleet.
Since industry leverages AI-driven solutions, it could easily adopt similar frameworks to improve commercial systems in the private/civilian sectors.

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KEYWORDS: CCA; Autonomous Mission Planning; Post Mission; Blue/Red Force Modeling; AI Decision Support; Multi-Agent Autonomy

DON26BZ05-NV075 TITLE: High Performance Electrolytic Coating Touch-Up Repairs for Aluminum

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 a simple, cost-effective, and portable touch-up applicator for performing electrolytic conversion coating repairs to provide a robust corrosion protective coating for aerospace aluminum components and structures.

DESCRIPTION: Corrosion protection for aerospace aluminum primarily relies on two inorganic coatings: chromate conversion coating and anodize coatings. Anodizing provides a superior barrier against corrosion, especially in harsh salt-water environments. In contrast, chromate conversion coatings (e.g., Alodine, Iridite) offer less protection but are significantly easier to apply, requiring a simple, non-electrolytic chemical application.

This difference in application creates a maintenance challenge. Anodizing is a complex process generally restricted to depot or Original Equipment Manufacturer (OEM) production facilities. Field repairs on anodized components, which can comprise up to 5% of the surface area under MIL-PRF-8625, often fall back on the use of easier-to-apply chromate conversion coatings. Touch-up pens, in particular, are widely used in aviation maintenance, from large depots to resource-constrained fleet environments. However, when used on an anodized part, these chromate repairs create a point of weakness that is more susceptible to corrosion.

A third alternative, electrolytic conversion coating, has been developed to bridge the performance gap between these two methods. Recent studies at NAVAIR demonstrate that applying a small electrical current (several hundred milliamps per square foot) during the conversion coating process significantly enhances corrosion resistance. Currently, the equipment required for this process restricts its use to depot factories where chemical processing shops are available. This creates a need for a field-deployable solution.
This topic seeks the development of a portable touch-up method for applying electrolytic conversion coatings. The solution is critical for filling a technology gap for a method to apply, repair, and touch-up aluminum coatings at the fleet level, improving corrosion capabilities across all levels of aircraft manufacturing, maintenance, and rework operations.
The ideal solution should meet the following criteria:
• The method must prevent chemical spills, environmental release, operator exposure, and contamination of the maintenance area.
• The process should be simple, cost-effective, easy to deploy to fleet maintenance sites, and require minimal operator training.
• The process should generate minimal hazardous waste, and the equipment should be simplified and miniaturized as much as is practical.
• The resulting coating must meet or exceed the corrosion performance requirements of MIL-DTL-81706.
• The application method must not damage the underlying aluminum through pitting, fatigue loss, or other undesirable effects.
• Primary aerospace aluminum alloys are 2000, 6000, and 7000 series aluminum alloys. However, the application method must perform equally well on all aluminum alloys.
• The process must not use hexavalent chromium.

PHASE I: Develop and demonstrate the feasibility of a portable, touch-up application method for electrolytic conversion coatings. The effort will include the following tasks:
1. Design a concept for a portable electrolytic conversion coating application method suitable for touch-up repairs.
2. Prove the viability of the application method, evaluating key parameters such as coating effectiveness, ease of use, and the ability to deposit coatings in tight spaces like fastener holes and other small interior diameters.
3. Conduct initial studies to assess the corrosion performance and paint adhesion of the applied coating.
4. Deliver a final report detailing the design and feasibility results, along with a comprehensive test and development plan for Phase II.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Develop, optimize, and validate a prototype system for applying electrolytic conversion coatings, focusing on the following key activities:
1. Based on the successful Phase I concept, fabricate and deliver a functional prototype system to NAVAIR for evaluation.
2. Further assess and refine key system parameters, including portability, material compatibility, process costs, and operator ease-of-use. The application method will be optimized to ensure successful coating deposition on a variety of part geometries.
3. Evaluate the coating method to ensure it does not cause adverse effects to the substrate, such as inadvertent pitting, etching, corrosion, or loss of paint adhesion. Conduct testing as applicable to meet the requirements of MIL-DTL-81706 and/or MIL-PRF-8625.
4. Seek additional funding from various sources to support a fatigue testing initiative aimed at generating preliminary data on this touch-up method.
5. Provide a comprehensive final report that documents the prototype's design, system performance, and all material testing results. Include a detailed plan for Phase III.

PHASE III DUAL USE APPLICATIONS: Transition the validated prototype into a fully commercialized, field-ready product for widespread military and commercial use. This phase will focus on the following activities:
1. Operational Demonstration: Demonstrate the system's effectiveness in real-world, on-aircraft repair scenarios on aluminum substrates. Final validation will ensure the product is ergonomic, easy-to-use, and does not cause detrimental effects to the base material or expose operators to safety or hazardous material risks.
2. Transition the finalized prototype into a commercially viable product ready for widespread distribution. This includes finalizing all licensing and intellectual property (IP) agreements necessary for a successful commercial launch.
3. Establish National Stock Numbers (NSNs) for the system, its chemicals, and any required consumables. This will ensure the product can be easily procured and deployed by Department of War (DoW) maintenance activities worldwide.
This technology has direct applications in both military and commercial aviation maintenance. As the use of electrolytic conversion coatings in aircraft production grows, the demand for a portable repair method will increase substantially. Anodizing and chromate conversion coatings are standard for protecting aluminum on a wide variety of commercial platforms, including airliners, helicopters, corporate jets, and general aviation aircraft. Since touch-up repairs are a routine maintenance activity across all types of aircraft, this technology would represent a significant improvement over existing methods, offering a more durable and effective corrosion protection solution for the broader aviation industry.

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2. MIL-PRF-8625 – Anodic Coatings for Aluminum and Aluminum Alloys. https://everyspec.com/MIL-SPECS/MIL-SPECS-MIL-A/MIL-A-8625F_2377/

KEYWORDS: Electrolytic conversion coating; ECC; Chromate conversion coating; Touch-up repair; Anodizing; Brush anodizing; Inorganic coating; Aluminum

DON26BZ05-NV076 TITLE: Open, Layered, Yielding Modular Platform for Unified Systems

COMPONENT TECHNOLOGY PRIORITY AREA(S): Sustainment

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: Transform maritime domain awareness and operational efficiency by developing a unified, modular, and open architecture platform that integrates shipboard systems and technologies.

DESCRIPTION: The current operational portfolio encompasses a large and diverse set of systems, many of which were developed piecemeal over time. This fragmented development history poses significant challenges to both sustainment and modernization efforts. The use of multiple, disparate systems performing similar or identical functions has resulted in a complex and costly “logistics tail”, extensive technical documentation, and redundant training programs. This duplication increases costs, reduces efficiency, and heightens the risk of obsolescence. Additionally, the lack of commonality between systems hinders the integration of new capabilities and technologies, as each system requires unique modifications. This slows innovation and limits the ability to leverage advancements in automation, artificial intelligence (AI), and digital engineering. Ultimately, the lack of interoperability within portfolio creates a fragmented, inefficient, and costly development and sustainment environment, negatively impacting warfighter readiness and effectiveness.

To address these challenges, PMA-213 is developing a portfolio-wide architecture, referred to as Zeus, which functions as a system of systems (SoS). Zeus will provide a modular and open digital and hardware framework capable of delivering varying levels of service and functionality based on specific mission requirements. This architecture will enable data fusion, redundancy, and seamless integration of individual apertures and below-deck infrastructure, tailored to each ship’s mission set. By adopting an open and modular design, Zeus will support future cost savings, accelerated modernization, and enhanced interoperability across the fleet. OLYMPUS is a sub-project of Zeus focusing on the below deck ship infrastructure.

OLYMPUS will enhance situational awareness, streamline decision-making, and improve fleet-wide interoperability through advanced data fusion, real-time analytics, and secure communication networks. By leveraging cutting-edge technologies such as AI, machine learning (ML), and digital engineering, OLYMPUS will ensure naval operations are resilient, adaptive, and capable of addressing emerging threats in complex and context environments.

In addition to operational benefits, OLYMPUS aims to achieve significant long-term cost savings and cost avoidance across portfolio by increasing commonality in parts, enabling quantity buys, and simplifying maintenance requirements. For example, standardizing hardware procurement to allow the purchase of twenty-five (25) computers for use across five systems, rather than five different computers for five systems. These efficiencies will impact all air-capable fleet platforms, including CVNs, L-Class ships, and DDGs, optimizing readiness and sustainment across the fleet.

The transition of OLYMPUS technology and architecture will primarily occur through routine sustainment efforts and technology refreshes within. With government ownership of the majority of data rights for the affected portfolio, the technology developed through this SBIR effort can be gradually fielded over time via Engineering Change Proposals (ECPs). This approach ensures a smooth and cost-effective transition while enabling the Navy to modernize its systems and maintain maritime superiority.

PHASE I: Assess the technical, operational, and economic feasibility of the OLYMPUS system. Key activities include:
1. Preliminary Analysis and Scope Definition:
Conduct a detailed analysis to define the scope, objectives, and requirements of the feasibility study. Evaluate existing technologies and their compatibility with the proposed modular and open architecture system.
2. High-Level System Design and Architecture:
Develop a high-level design and architecture for the OLYMPUS system, outlining its modular framework, data fusion capabilities, and integration pathways for shipboard systems.
3. Proof-of-Concept (PoC) Demonstrations:
Perform PoC demonstrations for critical components to validate initial concepts and assess their functionality in representative operational scenarios.
4. Comprehensive Risk Assessment:
Identify potential technical, operational, and integration challenges. Develop mitigation strategies to address risks associated with system development and deployment.
5. Feasibility Report:
Compile findings into a detailed feasibility report, including technical recommendations, risk mitigation strategies, and a roadmap for Phase II development. The report will provide actionable insights to guide the next phase of the effort.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Develop and test a prototype of the OLYMPUS system to validate its design and performance. This includes designing and building a prototype system based on the high-level architecture established in Phase I and integrating key components such as sensors, processing units, user interfaces, and communication networks. Laboratory and field testing will be conducted to evaluate system performance, interoperability, and resilience. Based on test results and stakeholder feedback, the system design will be refined. Detailed technical documentation and training materials will be developed to support system deployment and operation. A comprehensive test report will be prepared to summarize the findings and provide recommendations for full-scale deployment.

PHASE III DUAL USE APPLICATIONS: Transition the OLYMPUS system from prototype to operational deployment. Activities will focus on final system refinement, production readiness, and integration into operational environments. The system will be deployed in coordination with transition partners to support operational evaluation and adoption. Manufacturing, installation, and configuration processes will be established to support scalable deployment. Training and technical support will be provided to ensure effective system operation and sustainment. Feedback from operational use will be incorporated to support continuous improvement. Documentation developed during Phase II will be finalized to support long-term operation, maintenance, and sustainment, and deployment outcomes will inform broader implementation and commercialization efforts.

The OLYMPUS system has strong commercial potential in private sector applications that require integrated sensing, data processing, and reliable communication capabilities to support monitoring, decision-making, and operational efficiency. Potential dual-use applications include infrastructure monitoring, industrial operations, transportation systems, and emergency response environments where real-time data integration and system resilience are critical. The system’s modular architecture supports

adaptation to commercial use cases with minimal modification, enabling scalability across multiple industries. Commercial deployment opportunities exist in environments that require improved situational awareness, system reliability, and coordinated operations. Lessons learned through DoW deployment and operational testing will support commercialization by reducing technical risk and demonstrating system effectiveness in demanding operational environments.

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KEYWORDS: MOSA; Systems Engineering; Ship; Common; Computing; Interfaces; Architecture

DON26BZ05-NV077 TITLE: Multi-Core Parallel Processing for Sensor Fusion Architecture

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: Investigate and develop an efficient architectural structure/design to optimize sensor fusion algorithms within multi-core processors using parallel processing.

DESCRIPTION: The enhancement of target tracking, situational awareness, and decision-making in manned and autonomous systems is accomplished by fusing data from multiple sensors (homogeneous and heterogeneous). There are many complex issues within the implementation of sensor fusion, including, but not limited to, process latency, overprocessing of redundant data, and the inherent serial nature of current fusion architecture. To alleviate these issues, a prioritization ranking system is implemented to process higher valued tracks/data while dropping others. This forces a trade-off that risks track loss, leading to incomplete tracks and reduced situational awareness for operators in high-workload environment.

The objective is to develop a modular, platform-agnostic sensor fusion architecture that utilizes multi-core parallel processing to optimize data throughput and minimize latency. The system must support the parallel execution of both whole-task and sub-task fusion algorithms across multiple processing cores to maximize hardware utilization. The proposed architecture must demonstrate a significant reduction in process latency without the loss of fused track data or correlation accuracy.
Key requirements include:
• Parallelization: Ability to decompose fusion tasks into sub-tasks (spatial-alignment, temporal correlation, and attribute fusion) for concurrent execution.
• Track Integrity: Elimination of track loss currently caused by serial processing bottlenecks or aggressive data-prioritization filters.
• Latency: Real-time processing capability to support operator's decision-making in dynamic, complex environments.
• Platform Integration: Size, Weight, and Power (SWaP) for the processing unit should be compatible with 5th-generation or later platforms (typically 0.5 to 1.0 cubic feet and 28V DC power).
• Scalability: Design accommodates increasing number of data sources, including, but not limited to:
o AESA Radar
o Distributed Aperture Systems (DAS)
o Electro-Optical Targeting Systems (EOTS)
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: Focus on the architectural definition and high-fidelity modeling of a multi-core parallel processing sensor fusion engine. The approach consists of three primary tasks:
• Architecture Design: Define a scalable fusion framework that decomposes the serial bottlenecks into parallelizable sub-tasks. This design will specifically address the integration of data streams within the specified SWaP constraints of a tactical processing unit.
• Modeling and Simulation (M&S): Develop a discrete-event simulation environment to provide an initial assessment of throughput, latency, and track correlation accuracy. The simulated environment will assess and compare the proposed parallel architecture against current serial benchmarks to quantify performance gains.
• Feasibility Validation: Establish the mapping of fusion sub-tasks to physical CPU/GPU/FPGA cores compatible with strict SWaP constraints of 5th generation tactical aircraft. The Phase I Option, if exercised, will culminate in a Preliminary Design Document (PDD). This document will detail the finalized architectural constraints, interface control definitions, and a hardware-software roadmap required to transition the design into a functional prototype in Phase II.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Develop, integrate, and demonstrate a full-scale prototype of Parallel Multi-Core Sensor Fusion architecture. Building on Phase I architectural design and simulation results, the software-defined fusion algorithms will be transitioned into a tactical-grade processing unit. The primary focus of this effort is the real-time execution of fused track correlation across multiple sensors (both heterogeneous and homogeneous) data streams without the latency overhead inherent in legacy serial processors.
Technical Milestones include:
• Hardware-in-the-Loop (HiTL) Integration: Implement the parallelized fusion engine onto a multi-core System-on-Chip (SoC) that meets the 28V DC power and 80-pound weight constraints.
• Algorithmic Optimization: Refine sub-task decomposition to ensure balanced load distribution across processing cores, targeting an approximate reduction in end-to-end track latency of 50% compared to Phase I benchmarks.
• Performance Demonstration: Conduct a demonstration using sensor data to validate track consistency and correlation accuracy under dynamic, complex scenarios.
The final Phase II deliverable will be a Technology Readiness Level (TRL) 6 prototype, including a comprehensive Test and Evaluation (T&E) report and a transition plan for integration for Program Offices and manned/unmanned platforms.
Work in Phase II may become classified. Please see note in Description section.

PHASE III DUAL USE APPLICATIONS: Integrate the Phase II developed processing unit within a HiTL simulation, verify the performance of the complete system, and transition to an aircraft platform. Examples of potential dual use applications include search and rescue, home/private security, autonomous driving/robotics, and smart grid/energy management.

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KEYWORDS: Parallel Processing; Sensor Fusion; Algorithmic Optimization; Target Tracking; Sensor Networks; Multi-Core Processors; Situational Awareness; Sensor Processing

DON26BZ05-NV078 TITLE: Tech Data Interactive Electronic Technical Manuals Convertor

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: Develop a tool capable of transforming existing Navy technical manuals (TMs) into a format viewable within our targeted Interactive Electronic Technical Manuals (IETMS) viewer. This transformation must accommodate any existing TM, irrespective of its original specification and format, while also addressing data rights release considerations.

DESCRIPTION: The Navy is currently standardizing the format for technical manuals to facilitate the creation, management, and publication of IETMs. A significant portion of existing technical manuals has yet to be converted to the IETM format, making it challenging for users to easily navigate the information. These manuals also exist in various formats, lacking complete uniformity, which complicates parsing by automated tools and accurate display to the end-user.
The primary goal is to develop a tool or software that can automate the transformation of these diverse technical manuals into eXtensible Markup Language (XML), as XML documents are highly adaptable for various outputs. This XML output must then be formatted for compatibility with a Commercial Off-The-Shelf (COTS) or Government Off-The-Shelf (GOTS) tool, which can convert the information into step-by-step instructions.

Specifically, the objective is to create a tool capable of transforming any existing Navy technical manual, regardless of its original specification and format, while adhering to data rights release requirements. The transformed output must contain the appropriate distribution markings that match original inputted technical manual document and Defense Federal Acquisition Regulation Supplement (DFARS) markings. The output must be viewable in our designated IETMS viewer. The tool should be able to parse manuals from various formats, including PDFs, MIL-STD-3001-1, MIL-DTL-81310, S1000D v3.0, and S1000D v4.0, to extract relevant information.

This extracted information should be formatted for integration into a tool that generates quick, readable step-by-step instructions. These instructions should reference corresponding material and be displayed to the end-user, via an Extended Reality (XR) headset or tablet, during maintenance, troubleshooting, or operational procedures. The aim is to present these instructions within an Augmented Reality (AR) environment to enhance readability and digestibility. The tool should also be designed for integration with existing commercial or government tools.

PHASE I: Conduct a comprehensive analysis of the Navy's existing technical manuals to identify their legacy formats and structural variations. Collaborate with Navy stakeholders to define specific format and version compliance requirements, such as S1000D or MIL-STD-30001XML, based on the needs of the targeted platform. Select a specific product for which to create a content library. Evaluate current tools

and technologies for document conversion, Natural Language Processing (NLP), Optical Character Recognition (OCR), and AR integration to pinpoint existing gaps and potential opportunities. Subsequently, develop algorithms to identify and extract content, including text, tables, images, and diagrams, from this library. The converted outputs must be viewable on the Navy's chosen IETMs/XML viewer.
Furthermore, formulate plans to integrate NLP and search functionalities, enabling users to query specific tasks or information within the converted IETMs. Develop a method to format this queried task data so it can be fed into a COTS or GOTS tool. This tool will then convert the information into step-by-step instructions, intended for display within an AR/ XR environment.
The Phase I effort will include prototype plans to be developed under Phase II.

PHASE II: Refine, scale, and fully operationalize the automated tool or software developed in Phase I. This includes expanding the content library to encompass more than one platform. The goal is to create a functional prototype that can accept existing Navy technical manuals from the targeted product library as primary input and convert them into the specified standard format. Users must be able to view and navigate these converted technical manuals within the Navy's IETMs viewer.
Validation of the generated modules against existing IETMs/XML formats is crucial. Automated validation tools should be developed to ensure all converted data modules meet the targeted standards set by stakeholders. Additionally, an error detection and correction mechanism will be implemented to address any inconsistencies. Aiming for a threshold of at least 95% accuracy for conversion and after running the error correction should reduce the error rate to <= 1%.
Further, NLP and search capabilities will be integrated, allowing users to query specific tasks or information within the converted IETMs. Algorithms will be developed to extract relevant content and format it into an output compatible with COTS/GOTS tools, which will then generate simplified, step-by-step instructions tailored to user queries. The output will be verified by certified instructors and technical data engineers to determine viability and serviceability of produced output.

PHASE III DUAL USE APPLICATIONS: Final testing will involve the rapid conversion of a large set of existing technical manuals, encompassing various complexities and formats. These converted manuals will then be fed into a COTS or GOTS tool.
Subsequently, a live testing event will be conducted where sailors perform maintenance procedures, using the outputted IETMS tool and querying them for proper instructions. This event will be supervised by qualified maintainers. Evaluation metrics will be clarified provided at prior to Phase III award but should meet industry standards for current AI chat bot tools which are ~99% accuracy for information retrieval. Test event will pair off a maintainer with the automated tool vs a maintainer with the typical tools that they use today (i.e., technical manual on their portable electronic maintenance aid laptop).
The IETMS format is widely recognized as a standard for technical documentation. Its adoption can significantly improve interoperability and compliance across various industries, including aerospace, automotive, and energy. Furthermore, the tool's integrated query-based system enhances the ease with which users can search for relevant technical information, thereby boosting productivity and minimizing downtime. Finally, AR integration can further improve maintenance tasks by providing immersive, hands-free, step-by-step instructions for complex procedures.

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KEYWORDS: Technical Manuals; Artificial Intelligence; Augmented Reality; Natural Language Processing; Automation; XML

DON26BZ05-NV079 TITLE DON has removed topic DON26BZ05-NV079 from Release 5

DON26BZ05-NV080 TITLE: Submarine Cabinet Sound Dampening Alternative

COMPONENT TECHNOLOGY PRIORITY AREA(S): Advanced Materials;Sustainment

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: Develop and demonstrate an advanced noise mitigation material that is superior to the current lead septum foam product.

DESCRIPTION: As part of the production of electronic cabinets and consoles, noise mitigation products are installed prior to the installation of the electronic components and cabling. The noise mitigation material of choice for decades has been lead septum foam. Reference 1 is the baseline 53711-3203197 lead septum product. This material is installed with a Pressure Sensitive Adhesive (PSA) backing or adhesive to the inner walls of the enclosures. Depending on the complexity of the electronics assembly, in most applications it is difficult or impossible to remove and replace without first complete removal of the electronics and cabling. The electronic assemblies that require this product need to have minimal time offline. Additionally, reassembly of cable harnesses and wiring can result in electrical faults, so complete system testing after reassembly is required. The Navy needs a product that has performance characteristics equivalent or better than today's lead septum foam product and with a longer life expectancy (exceeding forty years) than the current foam product being used to meet end-of-life of the COLUMBIA/Dreadnought platforms. This product must also meet the Structureborne Noise MILSPEC (MIL-STD-740-2) criteria for testing [Ref 2]]. This material will be installed in Strategic Systems Programs (SSP) Fire Control, NAV, and TEMPALT equipment cabinets onboard COLUMBIA/Dreadnought SSBNs.

In addition to identifying a material with an extended service life, the material attachment methods are expected to have a reduction in time to replace, compared to the 53711-3203197 baseline material. The final product desired is a structureborne noise mitigation material with a defined efficient attachment method. The final product should be able to be reproduced in sheet sizes equivalent to 53711-3203197 baseline material to support needs from the Navy.

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 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 NAVSEA 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: Develop or select concept structureborne noise (SBN) materials that have performance characteristics and properties that are equivalent or better than the current lead septum foam product. Evaluate performance characteristics/properties that include noise mitigations, sound absorption, material shelf life, material density (i.e., weight), interface requirements, removal/replacement, low-smoke, and material envelope (size). (Note: Additional performance characteristics/properties can be evaluated if applicable.) Provide a trade study that identifies multiple conceptual design options that compare performance characteristics and properties against the baseline 53711-3203197 lead septum product. Work with SP23 to understand performance characteristics/properties desired for a final product. Identify risks to the proposed concept and develop Phase II plans that include ways to mitigate those risks. If the Phase I Option is exercised, include the initial performance characteristics/properties required to build/select a prototype solution in Phase II.

PHASE II: Select or produce a prototype SBN mitigation material for Navy evaluation. Work with the Navy to fully understand the interface requirements, the hardware, and the integration standards for the material being deployed. Provide testing scenarios that compare the 53711-3203197 baseline lead septum foam with the prototype material as outlined in the performance characteristics/properties detailed in Phase I. Establish a feedback loop with the Navy for implementing changes during prototype testing. It is probable that the work under this effort will be classified under Phase II (see the Description for details).

PHASE III DUAL USE APPLICATIONS: Support on-site testing of Navy equipment that utilizes the new product and work with the Navy in the operational set up of the material, including troubleshooting plus resolving implementation and execution issues at various Navy and DoW laboratories.
In respect to dual use applications, the Virginia class and/or other underwater platforms that utilize SBN mitigation materials could benefit from this effort. Additionally, SSP NAV common cabinets and TEMPALT cabinets will also utilize SBN mitigation materials.

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KEYWORDS: Structureborne Noise; Sound Controlling Blanket; Lead Septum Foam; Sound Absorption; Sound Mitigation; Sound Dampening; Noise Reduction