DEPARTMENT OF THE NAVY (DON)
Small Business Innovation Research (SBIR)
DOW 2026 SBIR CSO Release 1
Phase I Open Topics Proposal Submission Instructions

IMPORTANT

- **The following instructions apply to topic:**
  - **DON26BX01-NP001**

- Submitting small business concerns (SBCs) are encouraged to thoroughly review the DOW SBIR/STTR Program Commercial Solutions Opening (CSO) and register for the DSIP Listserv to remain apprised of important programmatic changes.
  - The DOW Program CSO is located at: https://www.dodsbirsttr.mil/submissions/login.
  - 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 CSO.

- 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 CSO.

- 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 provides notice that Prototype Other Transaction (OT) will be used for Phase I.

- This CSO is issued under regulations set forth in DFARS Subpart 212.70. and is considered competitive for the purposes of 10 U.S.C. chapter 127 and FAR 6.102. DON will treat items, technologies, and services acquired under this CSO as commercial items. This CSO includes no requirement for a commercial product or service to be an already-developed, off-the-shelf item. Please review the DOW SBIR/STTR Program CSO for more information.

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.

For questions regarding this CSO use the information in Table 1.

TABLE 1: POINTS OF CONTACT FOR QUESTIONS REGARDING THIS CSO

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	CSO 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 CSO for details.
	CSO 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 CSO for details.
Electronic submission to the DOW SBIR/STTR Innovation Portal (DSIP)	Always	DSIP Support via email at dodsbirsupport@reisystems.com
Navy-specific CSO 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
DON26BX01-NP001	Mr. Shadi Azoum	Naval Information Warfare Systems Command (NAVWAR)	info@navwarsbir.com

OPEN TOPIC SUBMISSIONS:

This CSO release contains Open Topics. As outlined in section 7 of the SBIR and STTR Extension Act of 2022, innovation Open Topic activities—

a. Increase the transition of commercial technology to the DOW;
b. Expand the small business nontraditional industrial base;
c. Increase commercialization derived from investments of the DOW; and
d. Expand the ability for qualifying SBCs to propose technology solutions to meet the needs of the DOW.

Unlike Conventional Topics, which specify the desired technical objective and output, Open Topics can use generalized mission requirements or specific technology areas to adapt commercial products or solutions to close capability gaps, improve performance, or provide technological advancements in existing capabilities.

An SBC may only submit one (1) proposal to each Open Topic. If more than one proposal from an SBC is received for a single Open Topic, only the most recent proposal to be certified and submitted in DSIP prior

to the submission deadline will receive an evaluation. All prior proposals submitted by the SBC for the same Open Topic will be marked as nonresponsive and will not receive an evaluation.

PHASE I SUBMISSION REQUIREMENTS

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 CSO on the DSIP at https://www.dodsbirsttr.mil/submissions. Please refer to the DOW SBIR/STTR Program CSO for further information.

Proposal Volumes. The following seven volumes are required.

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

- **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, 8 ½" x 11" paper, margins one inch on all sides, font size of not less 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 four (4) months.
    - Work proposed for the Phase I Option must be exactly six (6) months.

  - Additional information:
    - A Phase I Open Topic proposal template specific to DON to meet Phase I requirements is available at https://navysbir.com/links_forms.htm

- **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 $75,000.
    - Phase I Option amount must not exceed $100,000.
    - 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. The following is used to calculate the minimum percentage of work:
      - Proposing SBC Costs (numerator for SBC calculation):

        - Total Firm Costs

      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. A selected proposal may be required to submit further documentation to the SYSCOM Contracting Officer to substantiate costs.

- **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 CSO 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 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 CSO. Complete the certification as detailed under ADDITIONAL SUBMISSION CONSIDERATIONS.

- Additional information:
  - Proposing SBCs may include 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 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
  - 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.

- **Fraud, Waste and Abuse Training Certification (Volume 6)**. DOW requires Volume 6 for submission. Please refer to the Proposal Preparation Instructions and Requirements section of the DOW SBIR/STTR Program CSO for details.

- **Disclosures of Foreign Affiliations or Relationships to Foreign Countries (Volume 7)**. In accordance with Section 4 of the SBIR and STTR Extension Act of 2022 and the SBA SBIR/STTR Policy Directive, the DOW will review all proposals submitted in response to this CSO 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 CSO 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. Due to limited funding, the DON reserves the right to limit the number of awards under any topic.

- **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 CSO.

- **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 CSO, 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. Proposals will not be compared to one another.

- **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 requirements of Volume 3.

- **Company Commercialization Report (CCR) (Volume 4).** Not evaluated.

- **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 REQUIREMENTS 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 CSO 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.

Due Diligence Program to Assess Security Risks. The SBIR and STTR Extension Act of 2022 (Pub. L. 117-183) requires the Department of War, in coordination with the Small Business Administration, to establish and implement a due diligence program to assess security risks presented by SBCs seeking a Federally-funded award. Please review the Certifications and Registrations section of the DOW SBIR/STTR Program CSO for details on how DOW will assess security risks presented by SBCs. The Due Diligence Program to Assess Security Risks will be implemented for all Phases.

Discretionary Technical and Business Assistance (TABA). TABA is not available for DON Phase I Open Topics advertised in this CSO. Information on TABA funding requests for Phase II will be provided to Phase I awardees.

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 CSO.

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 CSO, or verify their registrations are still active and will not expire within 60 days of CSO 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. 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. 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. SBCs

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 CSO 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.

Proposal feedback. DON anticipates fulfilling proposal feedback requests using automated standardized language associated with the technical evaluation. Proposal feedback is not the same as a FAR Part 15 debriefing.

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

Protests related to the terms of the CSO 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 to confirm eligibility of the proposing SBC, and to take other relevant steps necessary prior to making an award.

Award Type. Phase I awards to this CSO will be executed as Prototype Other Transaction (OT) under 10 U.S.C. 4021/10 U.S.C. 4022.

Funding Limitations. The maximum Phase I proposal/award amount including all options is $175,000. The Phase I Base amount must not exceed $75,000 and the Phase I Option amount must not exceed $100,000.

Deliverables. 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 will make two payments from the start of the Open Topic Phase I Base period, and three payments from the start of the Open Topic 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	Payment Amount
15 Days	50% of Total Base
120 Days	50% of Total Base

Days From Start of Option	Payment Amount
15 Days	50% of Total Option
90 Days	35% of Total Option
180 Days	15% of Total Option

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 CSO). 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. Awards to this CSO will be executed as Prototype Other Transaction (OT) under 10 U.S.C. 4021/10 U.S.C. 4022. Phase II awards can be structured in a way that allows for increased funding levels based on the project's transition potential.

Funding Limitations. 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 will be provided to all Phase I awardees. 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.

Transition. To accelerate the transition of SBIR/STTR-funded technologies to Phase III, 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 STP). All Phase II awardees not receiving funds for TABA in their awards must 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.

Navy SBIR DoW 2026 CSO
Topic Index
Release 1

DON26BX01-NP001 TITLE: NAVWAR Open Topic for Resilient Wideband RF Photonic Architectures for Assured Communications and PNT in Contested Electromagnetic Environments

COMPONENT TECHNOLOGY PRIORITY AREA(S): Advanced Materials;Integrated Sensing and Cyber

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, prototype, and demonstrate next-generation radio frequency (RF) photonic front-end technologies that improve the reliability, clarity, and resilience of wireless communications and navigation in high-interference environments. These solutions will leverage advances similar to those used in commercial fiber-optic telecommunications, satellite broadband (e.g., Starlink-class systems), 5G wireless infrastructure, and autonomous vehicle sensor systems to ensure the U.S. Navy maintains assured communications and assured position, navigation, and timing (APNT) during contested maritime operations.

DESCRIPTION: The United States Navy must maintain reliable communications and accurate navigation to operate effectively at sea, coordinate with allies, and ensure freedom of navigation in increasingly complex and contested environments. Modern naval operations depend on uninterrupted wireless communications and precise timing and positioning, much like commercial aviation, autonomous shipping, satellite internet providers, and global logistics companies.
The Navy's Communications and GPS Navigation Program Office (PMW/A 170) is responsible for delivering resilient and adaptive communications and APNT capabilities to Fleet forces and coalition partners. As commercial technology rapidly advances in areas such as fiber-optic networking, 5G/6G wireless systems, high-speed satellite communications, and advanced sensing platforms, the Navy seeks to harness and adapt these innovations to strengthen maritime mission performance.
The Golden Fleet initiative emphasizes modernizing not only ships, but also the systems that enable command, control, communications, navigation, and situational awareness. Modern Naval operations depend heavily on reliable communications and precise navigation, much like commercial aviation, satellite broadband networks, autonomous systems, and global logistics enterprises. As commercial industries continue to advance technologies that maintain reliable performance in crowded and interference-heavy environments, the Navy seeks to adapt and transition these innovations to strengthen maritime mission resilience.
Naval communications and navigation systems must operate reliably not only in routine conditions, but also in environments where adversaries attempt to disrupt signals or where the radio spectrum is heavily congested. Traditional RF front-end electronics can experience degraded performance or signal loss when exposed to jamming, electromagnetic interference, or strong competing signals. These vulnerabilities can create operational risk and threaten mission continuity in contested electromagnetic environments.
To address these challenges, this Open Topic invites system-level innovations in wideband RF photonic front-end architectures. RF photonics combines radio and optical technologies by using light and fiber-based components to carry, preserve, and condition radio signals with high fidelity. Similar approaches

are widely used in commercial fiber-optic communications, high-capacity wireless infrastructure, and precision timing networks to improve signal quality, expand bandwidth, and reduce distortion over long distances. When adapted to Naval RF systems, these technologies offer a promising path to lower noise, improved resistance to interference, wider signal capture, and more reliable signal recovery than conventional electronic front ends.
Proposed solutions may incorporate commercially inspired technologies such as:

- Coherent optical signal processing used in high-speed telecom networks
- Advanced phase-tracking techniques similar to those used in precision satellite navigation and autonomous vehicle localization
- Interference suppression approaches used in dense commercial wireless environments (e.g., stadiums, smart cities, and industrial IoT networks)
- Compact photonic integrated circuits (PICs), similar to those being developed for next-generation data centers and lidar systems

Desired capabilities include systems that:

- Reduce receiver noise without relying on traditional RF amplifiers
- Maintain signal integrity under heavy interference and jamming
- Capture and reconstruct wideband signals with high accuracy
- Automatically detect and remove unknown interference sources
- Support scalable, ruggedized deployment on ships, aircraft, and distributed maritime platforms
- Reduce size, weight, power, and cost while improving survivability

Of particular interest are integrated, fiber-remoted, and packaged front-end modules that can operate reliably in harsh maritime environments, similar to ruggedized telecom and offshore energy communications equipment. Solutions that enable real-time interference excision without prior knowledge of the signal or threat are strongly encouraged.
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 NAVWAR 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 will explore technical feasibility and different approaches and identify a solution based on the investigation and technical tradeoffs. During Phase I, develop a coherent link architecture addressing the specifications detailed in the Description. Develop a design, chip level layout, and packaging concept for an integrated front end transceiver module. The transceiver should contain at minimum a sub 1V Vp coherent modulator deriving a signal and local oscillator from a remote optical source and a nominal 50 ohm antenna input. The transceiver package should incorporate necessary optical I/O to deliver I and Q signals to the backend. The link architecture should contain polarization management to eliminate the need for polarization maintaining fiber. The expected analog performance of the proposed transceiver should be determined and incorporated in an end-to-end link model to determine the expected performance (e.g. minimum detectable signal, input voltage range, digital sampling rate, operating bandwidth and SFDR) of the digital back end. Analysis of the effects of specific hardware and software innovations to reduce digitization and processing requirements is encouraged.

PHASE II: Phase II should optimize the Phase I design. Create, and test a functioning transceiver front end. Demonstrate a packaged, fiberized transceiver front end suitable for interface to a broadband antenna in a realistic environment. Update the end-to-end link model with the measured performance of the front-end transceiver and optimize the link architecture. Perform a feasibility demonstration of back-end signal recovery. The demonstration does not need to implement the entire planned functionality but should produce quantitative results that can be used to extrapolate the expected link performance with reasonable fidelity. Phase II should include a set of performance specifications for the identified solution and prototype(s). Proposals should also include the use of Systems Engineering Technical Review (SETR) events, plans for testing, demonstration, and validation of the solution within the target Program of Record (PoR) or an equivalent and Government approved development environment. Proposals should also include the development of a strategy or plan for post-Phase II activities to include the development of production representative articles, Formal Qualification Tests (FQT) plans, life-cycle support strategies and concepts, commercialization opportunities, etc.
It is highly likely that the work, prototyping, test, simulation, and validation may become classified in Phase II (see Description for details). However, the proposal for Phase II will be UNCLASSIFIED.

PHASE III DUAL USE APPLICATIONS: Support the transition of developed technology to the Fleet. Investigate the dual use of the developed solution(s) for commercial applications. Commercial technology is rapidly advancing in areas such as fiber-optic networking, 5G/6G wireless systems, high-speed satellite communications, and advanced sensing platforms. Commercial aviation, shipping, satellite broadband networks, autonomous systems, and global logistics enterprises depend heavily on reliable communications and precise navigation. There will be many dual uses in the commercial sector for capabilities developed under this topic that maintain reliable performance in crowded and interference-heavy environments for command, control, communications, navigation, and situational awareness.

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KEYWORDS: EMI; jamming; RF photonics; interference; HF; co-channel interference