

Department of the
NAVY
SBIR/STTR
PROGRAMS

NAVWAR OPEN TOPIC *WEBINAR*

DON26BX01-NP001

Open Topic for Resilient Wideband RF Photonic Architectures for Assured Communications and PNT in Contested Electromagnetic Environments

Key Information

- Topic can be found on DSIP:
<https://www.dodsbirsttr.mil/topics-app/>.
- Topic is now **open** for submissions.
- Questions about the topic will need to be posted on DSIP.
- Proposals must be submitted by 1200 EDT on 03 JUN 2026.
- Awards will be in the form of Other Transaction Agreements (OTAs).

Phase I OTAs

- Awards under this Open Topic will use Other Transaction Agreements (OTAs) to accelerate prototyping and transition.
- Small Businesses do not have to have a DCAA-approved accounting system but are still required to submit their invoices on Wide Area Workflow.
- OTAs will be issued no later than 180 days from the close date of the CSO.
- OTAs work with an Agreements Officer (AO) and any changes to the agreement must be executed by a modification by the AO.
- OTAs will still preserve SBIR Data Rights.



Program Executive Office
Command, Control, Communications,
Computers and Intelligence (PEO C4I)

PEO C4I DON26BX01 Webinar – PMW/A 170

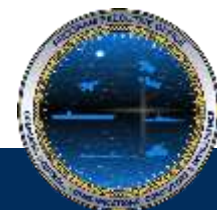
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POC: McLaina Mazzone



*Deliver threat-based C4I and space capabilities to enable
the fleet to compete, deter and win – tonight*



Agenda

- PEO C4I PMW/A 170 Overview
- PMW/A 170 S&T Mission and Role
- Navy SBIR 26-BX R1



PMWIA 170 Overview



Mission: PMWIA 170 is the premier provider of advanced, resilient, and adaptive communication and assured position, navigation, and timing capabilities, delivering operational dominance across all domains.



Vision: Accelerate delivery of innovative Communications and Positioning, Navigation, and Timing capabilities to the Fleet to deter, compete, and dominate from Seabed to Space.

Communication and Navigation Resiliency Across the Battlespace in All Domains



SATCOM

- Enable voice, video, and data transmission/receipt for naval platforms
- COMSAT and MILSAT provide Transport for bandwidth and Reach back
- Leverage existing architectures to improve Navy's Resilient Command, Control, and communications (RC3) posture
- Resilience across multiple orbits (LEO, MEO, GEO)

Air-PNT

- Addresses the Navy's future integration of Air Force developed M-Code capable GPS receivers
- Delivers Assured-PNT capabilities to naval aviation platforms to enable air navigation warfare
- Fields Anti-Jam antennas to enable naval air operations in heavy jamming environments

Mission TACSIT

- Enables transport of ISR and METOC data to execute network-centric operations in all environments
- Facilitates data-links across platforms in multiple domains to enable C2 between naval, joint, and coalition platforms
- Increases battle space awareness and RC3 during operations in EMCON or contested environments

TACCOM

- Enable C2 between naval, joint, and coalition platforms
- Provide secure voice, video, and data connectivity using LOS, BLOS, and SATCOM waveforms (2MHz and 15 GHz)
- *Align to Cryptographic Modernization Mandates*

Surface-PNT

- Enables access to GPS in challenged environments
- Delivers APNT and alternative to GPS capabilities from seabed to space via a PNT family of systems
- Improves cryptography, anti-jam performance, anti-spoofing algorithms, and robust PNT accuracy



Science & Technology (S&T) *Mission and Role*



- Utilize S&T investments to identify innovative solutions to mitigate PMW/A 170's capability and technology gaps
- Engage with other Government entities, industry, and academia to facilitate the identification and mitigation of technology and capability gaps, laying the S&T foundation for naval superiority





Navy SBIR 26-BX R1

NAVWAR Open Topic for Resilient Wideband RF Photonic Architectures for Assured Communications and PNT in Contested Electromagnetic Environments

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.

Leveraging Commercial Innovation:

- 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.



Navy SBIR 26-BX R1

Desired capabilities:

- Reduce receiver noise without relying on traditional RF amplifiers
 - Analog front-end Noise Figure <10dB Threshold, <6dB Objective
 - Analog front-end Small Signal Gain >5dB Threshold, >10dB Objective
- Maintain signal integrity under heavy interference and jamming
 - Back-End Input unwrapping range >16dBm (4Vpp) Threshold
- Capture and reconstruct wideband signals with high accuracy
 - Bandwidth 6 GHz Threshold
- Support scalable, ruggedized deployment on ships, aircraft, and distributed maritime platforms
- Solutions that enable real-time interference excision without prior knowledge of the signal or threat are strongly encouraged.

Of particular interest are integrated, fiber-remoted, and packaged front-end modules that can operate reliably in harsh maritime environments.



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Phase I: Explore technical feasibility and different approaches and identify a solution based on the investigation and technical tradeoffs.

- 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 comprising at minimum:
 - a sub 1V V_{pi} coherent modulator deriving a signal and local oscillator from a remote optical source
 - nominal 50-ohm antenna input
 - necessary optical I/O to deliver I and Q signals to the backend
 - polarization management to eliminate the need for polarization maintaining fiber
- Expected performance 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.



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NOTE:

- The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR). Refer to Call for full details.
- Work produced in Phase II may become classified. Refer to Call for full details.
- CMMC Level 2 Self-Assessment

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