

Department of the Navy SBIR/STTR Transition Program

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.
 NAVWAR HQCA-2023-A-146 N68335-22-C-0216 Advanced Radio Frequency (RF) Photonic Integrated Circuit (PIC)

Topic # N203-149
 Advanced Radio Frequency (RF) Photonic Integrated Circuit (PIC)
 Phase Sensitive Innovations, Inc.

WHO

SYSCOM: NAVWAR

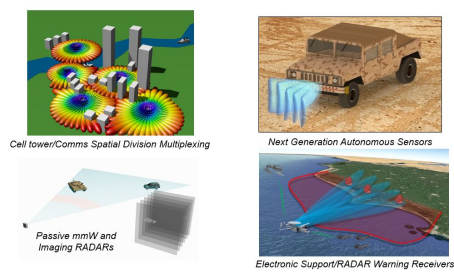
Sponsoring Program: NAVWAR

Transition Target: Phase III Luneburg Lens Project

TPOC: (619) 524-4519

Other Transition Opportunities: Communications (5G/6G, RF Photonic Links)

Notes:



PSI

WHAT

Operational Need and Improvement: General purpose RF Photonic links from Photonic Integrated Circuit technology allow for wideband operation in a small form factor.

Specifications Required: Frequency coverage 1 to 40 GHz (minimum) 5dB/K G/T (Gain over System Noise Temperature 30-35 dBW EIRP (effective isotropic Radiative Power).

Technology Developed: We are developing photonic integrated circuit technology as enabling components in support of broadband RF communications systems.

Warfighter Value: Agile, broadband spectrum coverage to support communications across multiple platforms and frequencies in SWaP constrained environments. Imaging of the environment provides real-time views of spatial locations of signals in congested environments and supports identification and tracking of critical signals.

WHEN

Contract Number: N68335-22-C-0216

Ending on: Sep 30, 2023

| Milestone | Risk Level | Measure of Success | Ending TRL | Date |
|--|------------|--|------------|------|
| Single Channel RF Photonic Transmit and Receive Module development | Medium | Single channel test which demonstrates close to or exceeding the required specifications | 6 | TBD |

HOW

Projected Business Model: Leverage trade shows and STP primes to commercialize single module (SATCOM Transceiver). Utilize upcoming Phase III program to develop multi-channel Luneburg Lens based RF Photonic link.

Company Objectives: To develop Passive millimeter wave and RF Photonic imaging technology for DoD and commercial applications.

Potential Commercial Applications: Terrestrial RF Photonic links, 5G/6G Remote heads/optical backhaul, and RADAR.

Contact: Mr. Chase Stine, Dr. Timothy Creazzo, Photonic Integrated Circuit Engineer, Director of Photonics
stine@phasesensitiveinc.com (302) 286-5191