STP
NAVY SBIR TRANSITION PROGRAM

Navy STP Showcase Technology Guide

WEST 2026

STP
NAVY SBIR TRANSITION PROGRAM

Navy STP Showcase Booth
Main Exhibition Hall #1725
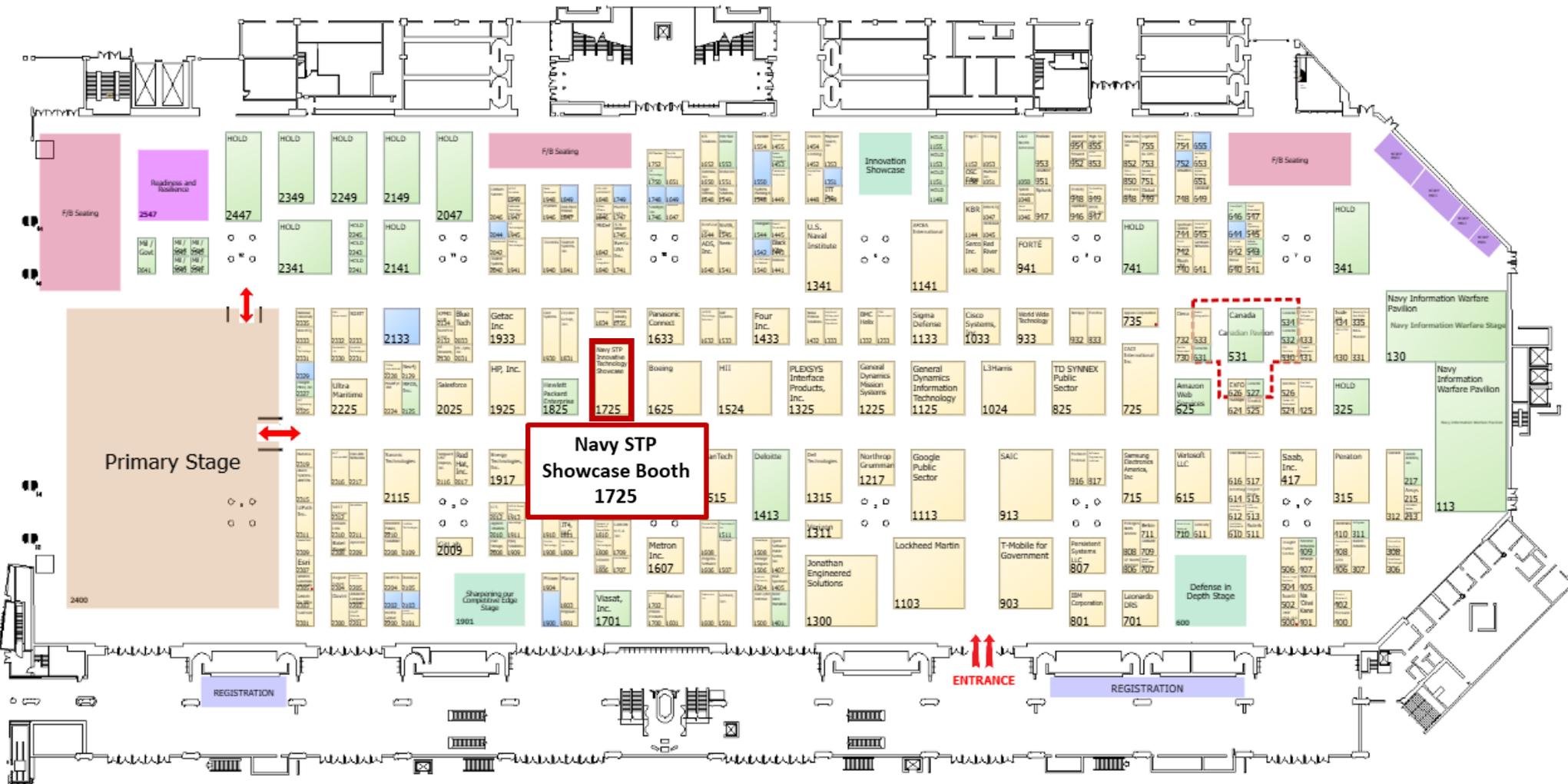
Navy SBIR/STTR Transition Program (STP) at WEST 2026

STP
NAVY SBIR TRANSITION PROGRAM

At WEST 2026, Navy STP will showcase 34 projects at the Navy STP Showcase booth (#1725) in the main conference exhibition hall. 17 projects will be displayed on 10 February giving participants a chance to meet the experts one-on-one while the next 17 projects will be displayed the next day, 11 February.

Featured SBIR/STTR Technologies at the Navy STP Showcase:

10 February

- Advanced Electronics (1 Project)
- Autonomy (1 Project)
- Command, Control, Communications, Computers, & Intelligence (C4I) (5 projects)
- Cyber (2 projects)
- Electromagnetic Warfare (EW) (1 Project)
- Engineered Resilient Systems (ERS) (1 Project)
- Ground and Sea Platforms (2 projects)
- Materials and Manufacturing Processes (2 projects)
- Sustainment (1 Project)
- Weapons Technologies (1 Project)

11 February

- Advanced Electronics (1 Project)
- Command, Control, Communications, Computers, & Intelligence (C4I) (5 projects)
- Cyber (1 Project)
- Electromagnetic Warfare (EW) (2 projects)
- Engineered Resilient Systems (ERS) (1 Project)
- Ground and Sea Platforms (2 Projects)
- Human Systems (1 Project)
- Modeling and Simulation Technology (1 Project)
- Sensors (2 projects)
- Space (1 Project)
- Weapons Technologies (1 Project)

Company	Topic	Project Title	Tech Category
Agnitron Technology Inc.	N201-071	Develop Ultra-Fast Metastable Ion Implant Activation System	Materials & Manufacturing Processes
Arete Associates	N131-055	Airborne Cueing Enhancement (ACE) Update	Ground and Sea Platforms
Beacon Interactive Systems	N192-124	Expeditionary Digital Support Platform for Unmanned Underwater Vehicles	Autonomy
Colvin Run Networks, Inc.	X224-OCSO1	IRONCLAD: Integrated Resilient Operations for Naval Cloud and AI Deployments	C4I
Dignitas Technologies, LLC	N211-088	Cyber Simulation TRaining for Impacts to Kinetic Environment (CyberSTRIKE) II	Cyber
Dirac Solutions Inc.	N241-D02	Secure UWB Communications for Aircrew Physiological Monitoring	C4I
Global Strategic Solutions LLC	N10A-T009	Dynamic Physical/Data-Driven Models for System-Level Prognostics and Health Management (converting to SBIR)	Sustainment
Materials Sciences LLC	N221-049	Radar Absorbing Material Maintainability Improvements - MSC P4803	Materials & Manufacturing Processes
MaXentric Technologies LLC	N23A-T028	SWING - SWItches using a Nitrogen polar (N-polar) Gallium nitride (GaN)	Advanced Electronics
Modus Operandi, Inc.	N234-P02	LOGEN (LOGISTICS ENHANCEMENT WITH LIVING INTELLIGENCE)	ERS
P&J Robinson Corporation	N171-083	Integrating Cyber Kevlar Tools into DevSecOps Overmatch Software Armory	C4I
PacMar Technologies LLC	N211-032	Extra Large Unmanned Undersea Vehicle (XLUUV) Dock	Ground and Sea Platforms
Radiation Monitoring Devices, Inc.	N231-078	Phase Change Material Based Phase Trimming for Integrated Photonics	Weapons Technologies
Smart Information Flow Technologies, d/b/a SIFT	N23A-T009	MADEIRA: Multi-Agent Debloating Environment to Increase Robustness in Applications	Cyber
Tercero Technologies LLC	N192-048	Computationally Efficient Deep Learning-Powered EWS Radar Data Preprocessor (CELER)	Electromagnetic Warfare (EW)
Third Coast Federal, Inc.	AF20C-TCSO1	AI Powered Market Intelligence & Tech Scouting Recommendation Engine to Drive DoD Discovery and Engagement of an Innovative Industrial Supply Chain	C4I
XAnalytix Systems	N234-P08	ACED (Altering Current-state to an Effective Desired-state)	C4I

Company	Topic	Project Title	Tech Category
Adaptive Dynamics, Inc	N193-D03	Resilient Tactical Communications Using Interference Mitigation Techniques	Electromagnetic Warfare (EW)
Aerodynamic Technologies, LLC	N20A-T022	Development of High-resolution Global Wall Shear Stress Measurement Technique for use in Hypersonic Flow Studies	Weapons Technologies
Apothym Technologies Group	N232-110	Multidirectional, Multifrequency Ship-based Meteorological Satellite Receiver Using a Virtual Gimbal	C4I
ARiA	N192-094	Interactive Tactical-Oceanography Training for Sonar Operators	Human Systems
BlueRISC Inc	N234-P07	Navigation Warfare Situational Awareness with AI/ML	Electromagnetic Warfare (EW)
Design Interactive, Inc.	N221-029	AMMO	Modeling and Simulation Technology
Galois, Inc.	N211-083	5STARS Boost: Refining 5STARS Network Verification Technology for Transition	C4I
GrammaTech, Inc	N161-070	Scalpel-Debloat	Cyber
Machina Cognita Technologies, Inc	N201-077	State-based Machine Aided Real Time Strategy (SMARTS)	C4I
Nu-Trek	N231-027	Low-cost, Low-SWaP, and High-Performance Uncooled Infrared Imager	Sensors
Orbital Micro Systems, Inc	N231-066	SPECTral Radiative Transfer Unified Model (SPECTRUM) - Phase II Prototype	Sensors
Out of the Fog Research LLC	N08-T018	CRES for HF	C4I
Pendar Technologies, LLC	N201-058	Affordable and Efficient High-Power Long Wavelength Infrared Quantum Cascade Lasers	Advanced Electronics
THOR Solutions, LLC	N211-039	SHARK BAIT - Shared Historical Anti-Submarine-Warfare Reachback Knowledge Built on Artificial Intelligence Technology	Engineered Resilient Systems
Trex Enterprises Corporation	N222-089	CNS for Long Range Unmanned Surface Vessels	Ground and Sea Platforms
TrustPoint, Inc.	N231-023	Resilient GPS-Independent Navigation for Denied Environments	Sensors
Wilson Eagle Limited Partnership	N234-P08	Integrating the Advanced Correlator-Navy (ACOR-N) Data Fusion Processor into the Command and Control Experimentation (C2X) Capability to Enhance Its Performance	C4I

Company	Topic	Project Title	SYSCOM
MaXentric Technologies LLC	N23A-T028	SWING - SWItches using a Nitrogen polar (N-polar) Gallium nitride (GaN)	ONR
Pendar Technologies, LLC	N201-058	Affordable and Efficient High-Power Long Wavelength Infrared Quantum Cascade Lasers	NAVSEA

Department of the Navy SBIR/STTR Transition Program

Topic # N23A-T028
SWING - SWItches using a Nitrogen polar (N-polar) Gallium nitride (GaN)
MaXentric Technologies LLC

WHO

SYSCOM: ONR

Sponsoring Program: ONR

Transition Target: W-band and 2–18 GHz wireless communication systems for military or commercial applications

TPOC: Kevin Leonard
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Other Transition Opportunities: Multiple opportunities exist within the Navy, Marine Corps, Army and Air Force in particular applications such W-band backhaul communications and 2–18 GHz electronic warfare. MaXentric Technologies has targeted several programs within the armed services and commercial 5G/6G industry primes to offer high performance switch products.

Notes:

https://www.navy.mil/Resources/Photo-Gallery/igphoto/2003595690/

WHAT

Operational Need and Improvement: Many wireless communications systems use RF switches either to protect the receiver or because they use time duplexing schemes. SWING technology satisfies the requirement with high power handling, low losses, and low cost. The technology will be suitable for millimeter-wave active electronically scanned arrays (AESAs).
The rapid adoption of low-cost unmanned aerial vehicles (UAVs) and widespread use of electronic warfare have led to increased investments in technologies to defend against such threats, including electronic warfare countermeasures (ECM) such as jammers and spectrum denial systems, electronic warfare protection measures (EPM) such as jamming-resistant active electronically scanned arrays (AESAs), and electronic warfare support (ES) such as surveillance radars. Many of these systems operate in the 2–18 GHz band and would benefit from the higher power handling, higher efficiency, and lower SWaP provided by SWING technology.

Specifications Required: - >1-W W-band SPDT switch
- 10-W 2–18-GHz SPDT switch

Technology Developed: SWING uses N-polar-GaN-on-sapphire HEMT technology that can combine millimeter-wave low-noise amplifiers (LNA), power amplifiers (PA) and transmit/receive (T/R) switch on a single chip for lower fabrication costs.

Warfighter Value: SWING will deliver low-cost, broadband, low-loss and high-power switch components for high-data rate communications in challenging environments. A wide range of systems can benefit from this technology due to the wide frequency bandwidth covered by the switches.
Currently phased arrays are one of the most expensive components in modern wireless infrastructure equipment. Lowering the cost of these components will enable wide-scale deployment of high performing systems providing real-time tactical date and information sharing between ships and aircraft.

WHEN

Contract Number: N68335-25-C-0024   **Ending on:** Oct 31, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Power characterisation of the switch device	Low	Device model fits measured device performance	3	4th QTR FY25
Generation 1-A switch MMIC	Medium	Prototype meets requirements	4	4th QTR FY25
Generation 1-B switches	Medium	Prototype meets requirements	4	2nd QTR FY26
Generation 2 switch design	Low	Simulated performance meets requirements	3	3rd QTR FY26

HOW

Projected Business Model: MaXentric will invite interested parties (military and commercial) to review SWING prototype performance at the end of Phase II. Based on customer/partner feedback, MaXentric will adapt the switch specifications to satisfy the target application. Main potential clients include, but are not limited to, the Department of Defense (DoD) and its prime contractors, and commercial telecommunication companies.

Company Objectives: MaXentric Technologies, LLC is a cutting-edge R&D firm that provides radio-frequency technologies and high-speed wireless communication systems and strives to provide advanced and efficient solutions for government and commercial usage.

Potential Commercial Applications: The potential commercial markets are wireless backhaul links, 5G/6G radios, and W-band SATCOM.

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NAVSEA #2025-062

Topic # N201-058
Affordable and Efficient High-Power Long Wavelength Infrared Quantum Cascade Lasers
Pendar Technologies, LLC

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS, NRL, ONR, OPNAV N2/N6 and N96

**Transition Target:** Multiple Navy and DoD Programs

TPOC: (202) 404-7675

Other Transition Opportunities: Military, law enforcement, and civilian applications for infrared lasers, especially coupled to imaging systems, include: infrared countermeasures, target illumination, situational awareness (infrared scene illumination), industrial process control, remote sensing, obstacle avoidance, and selective etching, cutting, and marking of materials.

Notes: (Top) Picture showing two different types of infrared quantum cascade laser (QCL) chips developed at Pendar and placed on a US dime for size-comparison: (1) single high power QCL emitter developed for the present SBIR Program (2) Array of QCL emitters with an integrated photonic circuit (PIC) enabling beam combining in an extremely small footprint (NAVY STTR N19A-T005 in collaboration with Prof. Hu, MIT).
(Bottom) Image of a packaged high power QCL source with its water-cooled heatsink.
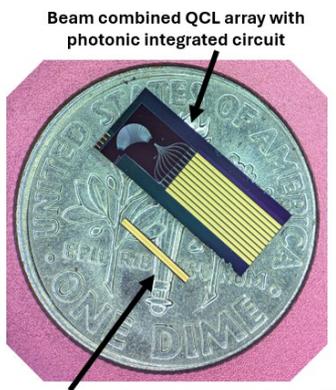
Beam combined QCL array with photonic integrated circuit
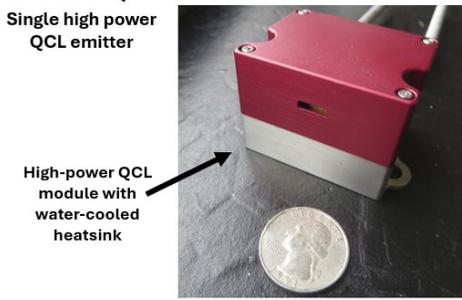
Single high power QCL emitter

High-power QCL module with water-cooled heatsink

WHAT

Operational Need and Improvement: Laser systems have a wealth of military applications that include target designators, illuminators, secure communications and countermeasures. A great deal of effort has been invested in developing semiconductor laser across wide parts of the electro-magnetic spectrum but the critically important long-wave infrared (LWIR) band has received less attention.
LWIR laser sources with higher efficiency and power than current commercial offerings are needed to counter emerging threats in electronic warfare systems. Maintaining a low size, weight, and power (SWaP) envelop while improving affordability are also paramount concerns.

Specifications Required: Competing LWIR laser technologies include gas lasers and optical parameter oscillators (OPO) that cannot easily be tuned to emit over most of the spectral range of interest or are inefficient or have a large footprint and poor atmospheric transmission. Quantum Cascade Laser (QCL) technology is the most promising approach to achieve low-cost, high power in a system with appropriate SWaP for many military applications. However, current LWIR QCLs are low power and too expensive. Pendar Technology is addressing this capability gap by developing LWIR QCLs that have higher brightness and significantly better atmospheric transmission than current commercial offerings. This enables the efficient delivery of higher optical power on target. The implementation of innovative new concepts to improve device reliability and manufacturing yield paves the way to significant cost reduction.

Technology Developed: Pendar is developing an affordable, multi-Watts, highly efficient QCL technology for operation in the LWIR spectral band. Our laser design has in particular features to force the QCLs to emit light only at wavelengths with high atmospheric transmission, enabling efficient power delivery on target over long propagation distances. Unique fabrication processes including a novel treatment of the laser output facet to improve coating reliability are being implemented to increase production yield and reduce overall manufacturing costs.

Warfighter Value: Considerable capability improvement in the LWIR spectral band for applications that require EO/IR Sensors and lasers to counter emerging threats in electronic warfare systems.

WHEN

Contract Number: N68335-22-C-0009   **Ending on:** Nov 10, 2023

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Demonstration of high-power, continuous wave, LWIR QCL without wavelength selection	N/A	Prototypes tested	5	2nd QTR FY23
Laser emission matched to transparent atmospheric windows	N/A	Prototypes tested	5	3rd QTR FY24
High power, continuous wave, LWIR QCLs with emission matched to transparent atmospheric windows	Medium	Delivery of high performance prototypes	5	3rd QTR FY26
Reliable and reproducible laser manufacturing process and packaging	Medium	Cost and production model established	4	3rd QTR FY26

HOW

Projected Business Model: Pendar's goal is to integrate and transition this technology into government and prime contractor systems. Pendar is actively pursuing opportunities to transition laser prototypes emerging from this and other SBIR/STTRs into next generation military systems.
Additionally, advances made in this program will more broadly benefit the commercialization of Pendar's infrared laser-based platforms, including spectroscopic instrumentation.

Company Objectives: To address the different markets in need for affordable, compact mid-infrared sources, Pendar has developed several infrared platforms which all share and leverage our proprietary QCL designs, beam-combining solutions, and system innovations:
1. Broadly tunable single-mode laser array as general spectroscopy tool.
2. Compact, high performance IR spectrometers and sensors.
3. Reliable high-power lasers and laser bars for infrared countermeasures, and other DoD applications.

Potential Commercial Applications: Pendar has developed several proprietary mid-infrared QCL platforms, which have unique features such as broadband spectral coverage, arrays with high optical power through power scaling, excellent beam-quality through rugged wavelength beam-combining, low laser noise, fast tuning speed, and low SWaP due to the monolithic nature of our laser source. These advantages enable many applications in IRCM, spectroscopy, medical device, pharma, laser processing, and scientific applications. The technology developed under this Program will help Pendar provide higher-power laser sources at reasonable cost across multiple military and commercial markets.

Contact: Dr. Christian Pfluegl, V.P. of Semiconductor & Infrared Technologies
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Company	Topic	Project Title	SYSCOM
Beacon Interactive Systems	N192-124	Expeditionary Digital Support Platform for Unmanned Underwater Vehicles	NAVSEA

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NAVSEA #2025-053

Topic # N192-124
Expeditionary Digital Support Platform for Unmanned Underwater Vehicles
Beacon Interactive Systems

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO USC

Transition Target: PMS 340 (UUVs)

Other Transition Opportunities: Program Offices across the DoD that field unmanned systems, whether maritime, air or land based, as well as commercial markets with the similar need for situational awareness of the readiness of deployed assets.

Notes: FLEX, a digital platform, supports distributed operations, readiness assessment, repairs, and sustainment of deployed unmanned systems. It addresses the shift from a centralized repair process to a distributed forward support of unmanned systems, ensuring consistent readiness of those assets at the point of performance. With its mobile, modular, scalable, and extensible capabilities, FLEX is interoperable across a wide variety of unmanned systems platforms.

US Navy image

WHAT

Operational Need and Improvement: Unmanned systems, such as the Navy's unmanned underwater vehicles (UUVs), are shipped out of theater and into designated locations for repairs, extending sustainment timelines and adding to logistical challenges. FLEX provides support at the edge for UUV operations and sustainment, increasing critical asset availability and alleviating the logistics burden of sustainment efforts. Using FLEX at the edge captures and aggregates operational data for fleetwide real-time visibility into Operational Availability (Ao).

Specifications Required: Built with flexibility and designed for distributed environments, the system can run as part of a hosted cloud environment or locally on an edge device. FLEX supports multiple types of unmanned systems of various size and range, purpose, domain or configuration. Open interfaces allow FLEX to seamlessly integrate with third-party systems, as well as accommodate planned and future unmanned vehicles. FLEX conforms to DoD cybersecurity requirements.

Technology Developed: FLEX streamlines unmanned vehicle operations and sustainment by combining seamless data capture, in-field protocol repository, and vehicle assessment tools with edge AI and modular interface software. As work is performed and logged in real time, the data on individual vehicle readiness, availability, and usage is collected, labeled, and integrated into Operational Availability (Ao) calculations. On-edge AI analytics drive decisions at tactical, operational, and strategic levels.

Warfighter Value: FLEX provides the much needed visibility and confidence in the readiness of unmanned systems. Operators gain the ability to perform troubleshooting anywhere at any time, reducing the need for shipping assets out of theater for repair. Decision-makers gain a single source of truth on parts failure rates and operational availability of unmanned vehicles. With increased uptime and availability in theatre, FLEX enables unmanned assets to rejoin the fight faster.

WHEN

Contract Number: N00024-24-C-S052   **Ending on:** Apr 18, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Initial Prototype Deployment	Medium	Delivery of prototype on an edge device	6	2nd QTR FY25
Prototype Testing	Low	Verified functionality in production environment	7	3rd QTR FY25
Final Design	Low	Approval by user community	7	1st QTR FY26
Delivery/Deploy	Low	Integration into US Navy UUV enterprise	8	2nd QTR FY26

HOW

Projected Business Model: FLEX is a licensable platform for both defense and industry organizations. Access can be cloud-based or local to an edge device. Beacon support includes deployment, training, and ongoing upgrades and maintenance of software.

Company Objectives: Identify additional partners and customers to scale the impact across defense and industry organizations.

Potential Commercial Applications: FLEX is a sustainment capability agnostic to unmanned systems, whether maritime, air or land based. As such, potential commercial applications beyond defense markets include first responder applications, police and fire & rescue. FLEX also directly addresses the sustainment needs of the increased use of drones in utilities, oil & gas and commercial maritime markets.

Contact: ML Mackey, CEO
ml.mackey@beaconinteractive.com   (617) 441-9229

Command, Control, Communications, Computers, & Intelligence (C4I)

Company	Topic	Project Title	SYSCOM
Apothym Technologies Group	N232-110	Multidirectional, Multifrequency Ship-based Meteorological Satellite Receiver Using a Virtual Gimbal	ONR
Colvin Run Networks, Inc.	X224-OCSO1	IRONCLAD: Integrated Resilient Operations for Naval Cloud and AI Deployments	NAVWAR
Dirac Solutions Inc.	N241-D02	Secure UWB Communications for Aircrew Physiological Monitoring	NAVAIR
Galois, Inc.	N211-083	5STARS Boost: Refining 5STARS Network Verification Technology for Transition	ONR
Machina Cognita Technologies, Inc	N201-077	State-based Machine Aided Real Time Strategy (SMARTS)	ONR
Out of the Fog Research LLC	N08-T018	CRES for HF	NAVWAR
P&J Robinson Corporation	N171-083	Integrating Cyber Kevlar Tools into DevSecOps Overmatch Software Armory	NAVWAR
Third Coast Federal, Inc.	AF20C-TCSO1	AI Powered Market Intelligence & Tech Scouting Recommendation Engine to Drive a Supply Chain	NAVSEA
Wilson Eagle Limited Partnership	N234-P08	Integrating the Advanced Correlator-Navy (ACOR-N) Data Fusion Processor into the Command and Control Experimentation (C2X) Capability	NAVWAR
XAnalytix Systems	N234-P08	ACED (Altering Current-state to an Effective Desired-state)	NAVWAR

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ONR Approval #2025-8-27-1325

Topic # N232-110
Multidirectional, Multifrequency Ship-based Meteorological Satellite Receiver Using a Virtual Gimbal
Apothym Technologies Group

WHO

SYSCOM: ONR

Sponsoring Program: PEO C4I PMW/A 170

Transition Target: AN/SMQ-11 Antenna Replacement

TPOC: Joshua Cossuth
joshua.h.cossuth.civ@us.navy.mil

Other Transition Opportunities: APNT, SATCOM, SIGINT, multi-static RADAR

Notes: The multi-band, multiple simultaneous beam antenna technology enables unique combinations of multiple existing systems into a single common aperture.
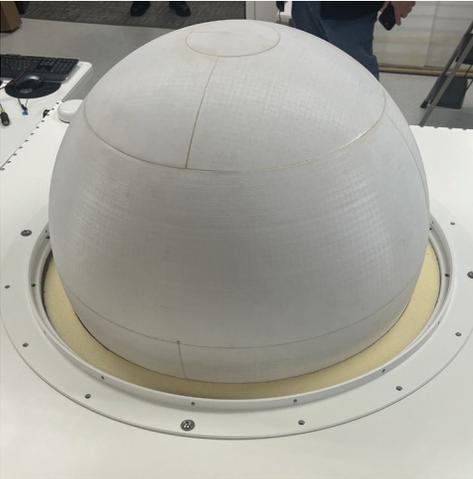

Image courtesy of Apothym Technologies Group, LLC

WHAT

Operational Need and Improvement: Environmental Satellite Receiver systems provide real-time organic Direct Read Out (DRO) capability for ships and shore stations to receive, process and disseminate environmental data from both polar orbiting and geostationary satellite families to the Meteorology and Oceanography (METOC) community in support of war-fighter mission planning and execution in all warfare areas. The lens-based, electronically steered antenna increases the number of simultaneous beams and system reliability.

Specifications Required: The objective is to develop an innovative multiband antenna whose directionality is governed by a virtual gimbal to help reduce incidences of mechanical failure and broaden the pool of available data. The antenna should have no moving parts, be reasonably maintainable with off-the-shelf parts, and be capable of operating in a seaborne environment. This includes accounting for reasonable size, weight, and power requirements and operating on a moving vessel subject to wind and waves. The antenna should receive at a reasonable subset of microwave downlink bands to receive meteorological satellite data broadcasts. A data rate of up to 40 Mbps is required to facilitate representative Joint Polar Satellite System (JPSS) direct broadcast and Geostationary Operational Environmental Satellites (GOES) Rebroadcast capabilities. The antenna should receive Level 0 satellite data in its native format which can then be processed onboard by existing software into a human readable format. Reception of [Advanced] High-resolution Picture Transmission data ([A]HRPT) from the National Oceanic and Atmospheric Administration (NOAA) and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) is encouraged. Design and specifications should also consider direct downlink of novel and future capabilities, such as from commercial weather data vendors and National Aeronautics and Space Administration (NASA) satellites.

Technology Developed: Multi-band (L/S/X), multi-beam, lens-based, electronically steered antenna system.

Warfighter Value: Increased system availability and simultaneous acquisition of environmental data from multiple satellites.

WHEN

Contract Number: N68335-25-C-0054   **Ending on:** Dec 15, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Ph I - model analysis demonstrates lens based antenna benefits	N/A	Ph I Final report issued	2	3rd QTR FY24
Ph II - 3D Model analysis advances Gradient Index (GRIN) lens	Medium	Ph II 2026Q1 report issued	3	2nd QTR FY26
Ph II - Selection of lens shape and fabrication of small prototype lens	Medium	Small prototype lens & partial feed fabrication and integration completed	3	4th QTR FY26
Ph II - Small prototype lens & partial feed subsystems lab / bench testing completed	Medium	Small prototype lens and partial feed integrated in lab with bench test results	4	1st QTR FY27
If option exercised: Ph II Opt - Full size lens & improved partial feed subsystems testing against satellites in optimal environment completed	Medium	Full size lens & improved partial feed subsystem component performance test results	5	3rd QTR FY28

HOW

Projected Business Model: ATG Solutions aims to develop and sell products utilizing partners for manufacturing under either a licensed OEM or white label model.

Company Objectives: Through this SBIR development, ATG Solutions aims to mature antenna feed and lens shaping techniques to accommodate multiple simultaneous frequencies from a single multi-beam electronically steered antenna, enabling consolidation of multiple existing antennas into a single terminal.

Potential Commercial Applications: This lens-based antenna technology has direct commercial application in both gateway and distant end SATCOM terminals.

Contact: Reed Leonard, Director, Business Development and Sales
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NAVWAR PAO approved

Topic # X224-OCSO1
IRONCLAD: Integrated Resilient Operations for Naval Cloud and AI Deployments
Colvin Run Networks, Inc.

WHO

SYSCOM: NAVWAR

Sponsoring Program: Naval Information Warfare Center (NIWC) Atlantic

Transition Target: NAVSEA/ NAVWAR

TPOC: (843) 284-3156

Other Transition Opportunities: PMW 160, Program Executive Office Command, Control, Communications, Computers, and Intelligence (PEO C4I)

Notes: IRONCLAD is built for secure, scalable application hosting and delivery across IL5/6 cloud, legacy shipboard infrastructure, and edge platforms. It includes a live CI/CD pipeline, telemetry, hardened containers, and compliance automation. Its edge-ready architecture makes it ideal for disconnected operations. Built on Google Cloud with consistent codebase between commercial and government regions, it simplifies deployment and accelerates ATO readiness. IRONCLAD is operational today and aligns with the PAS MVP delivery schedule.

IRONCLAD is production-ready for SBIR Phase III pre-competed Colvin Run awards rapidly executable via CDAO Tradewinds, GSA MAS, and Seaport-NxG.

WHAT

Operational Need and Improvement: The Navy requires a flexible and secure platform to rapidly deliver mission-critical software across a range of operational environments, including cloud, edge, and disconnected settings. Existing delivery methods are often fragmented, manual, and slow to adapt to mission needs, limiting the effectiveness of software updates and AI/ML capabilities. IRONCLAD addresses this by providing a unified, automated platform for secure application delivery and management, improving resilience, reducing time to field, and supporting continuous modernization aligned to operational tempo.

Specifications Required: The platform must support containerized applications and enable automated deployment, monitoring, and rollback across secure, bandwidth-constrained environments. It must enforce security policies at every stage of the software lifecycle, including hardened containers, SBOM validation, and role-based access control. The architecture must be modular, scalable, and resource-adaptive to support both cloud-hosted and edge-deployed workloads, with built-in support for observability, asynchronous job handling, and disconnected operations. Compatibility with IL5/IL6 environments and alignment with Continuous ATO requirements is essential to ensure rapid accreditation and operational use.

Technology Developed: IRONCLAD is a modular, operational DevSecOps platform built on Google's secure infrastructure. It includes an end-to-end CI/CD pipeline, ArgoCD-driven deployment logic, hardened container services, and telemetry that operates in DDIL conditions. It has been successfully deployed in a cloud environment and is being adapted for afloat production, with support for multi-tenant workloads and real-time updates.

Warfighter Value: IRONCLAD reduces user time lost by streamlining software updates and enabling sub-minute rollback. It improves operational resilience through asynchronous job handling and local observability, allowing mission systems to remain functional without constant connectivity. Its modular structure makes it easy to field new capabilities while maintaining a stable core, ensuring that ships and operators receive timely, secure, and mission-relevant software.

WHEN

Contract Number: N68335-25-C-0103   **Ending on:** Nov 01, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Implement DDIL Capabilities (Edge Caching, Async Queueing, Degraded Telemetry)	Low	Successful simulation of edge-mode caching and offline queueing; telemetry functions validate in test environments	5	4th QTR FY25
Build and Demo Kubernetes Abstraction Layer	Low	ArgoCD-based "invisible Kubernetes" demo completed; RBAC and GitOps guardrails documented and functional	5	4th QTR FY25
Complete Keycloak + CAC + Logsink Integration	Medium	Auth flow validation passes with IL5 compliance; logsink capture verified	3	4th QTR FY25
Maintain Live Architecture Documentation	Low	Living document created in Confluence or Gitbook; weekly update cadence established		1st QTR FY26
Story-point and Schedule IL5 Roadmap	Low	Milestone dates formalized in Jira/Gantt view; sprint sizing completed	5	1st QTR FY26
Add Operational Language Sample Testing	Low	Functional ingestion and output comparison for Chinese, Farsi, Spanish datasets (cloud vs. IL5 self-hosted)	5	1st QTR FY26

HOW

Projected Business Model: Colvin Run will deliver IRONCLAD as a modular, extensible platform through multiple federal acquisition pathways, including GSA MAS, Seaport-NxG, and SBIR Phase III. Our delivery model supports both direct deployment to government environments and integration with large prime contractors and system integrators. IRONCLAD can be adopted as a full-stack platform or delivered in modular components, such as observability pipelines, hardened CI/CD environments, or AI model hosting, depending on program office priorities. Colvin Run's approach enables rapid fielding of Minimum Viable Products (MVPs) while also supporting long-term sustainment, customization, and onboarding of third-party mission applications.

Company Objectives: Colvin Run's mission is to accelerate the delivery of secure, operational AI/ML and data capabilities to national security environments. IRONCLAD directly supports this objective by enabling container-native delivery of software to afloat, disconnected, and multi-classification environments. Designed with Navy platform modernization principles in mind, IRONCLAD integrates zero trust, compliance automation, and telemetry-based feedback loops to reduce downtime, increase resilience, and improve developer-operator collaboration. The platform is actively aligned to World-Class Alignment Metrics (WAMs) and built to scale across the PEO C4I ecosystem and beyond.

Potential Commercial Applications: The underlying IRONCLAD architecture, combining hardened DevSecOps, Kubernetes abstraction, policy enforcement, and real-time observability, is relevant across sectors managing distributed or sensitive workloads. Commercial applications include telecommunications edge management, autonomous systems infrastructure, secure software delivery for critical energy and transportation networks, and compliance-driven hybrid cloud platforms for financial or healthcare data. Its ability to operate in constrained, disconnected, or hybrid environments makes it attractive to industries requiring operational resilience and rapid iteration under strict regulatory or environmental conditions.

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NAVAIR SPR-2025-0686

Topic # N241-D02
Secure UWB Communications for Aircrew Physiological Monitoring
Dirac Solutions Inc.

WHO

SYSCOM: NAVAIR

Sponsoring Program: NAVAIR

Transition Target: PMA 202

TPOC: (443) 414-4513

Other Transition Opportunities: Army PEO Warrior, Airforce

Notes: Dirac Solutions, Inc. (DSI) has developed a secure, pulse-based wearable physiological monitoring system that integrates commercially available non-intrusive sensors with Ultra-Wideband (UWB) and Narrowband wireless communications. It transmits vital signals—including ECG, SpO?, blood pressure, heart rate, and EEG—over extended ranges, maintaining performance in RF-challenging environments such as aircraft cabins.
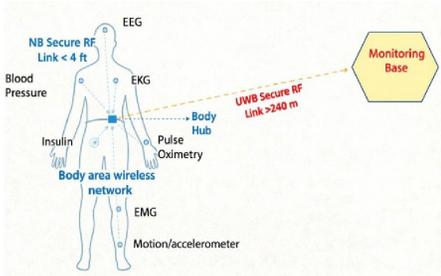
DSI's Secure UWB Communications for Aircrew Physiological Monitoring

WHAT

Operational Need and Improvement: ffective warfighter physiological monitoring demands a wearable system capable of continuous, real-time tracking of vital signs (e.g., ECG, heart rate, SpO?, blood pressure) to rapidly detect life?threatening physiological episodes in confined, high-risk environments like aircraft. It must achieve secure, high?integrity data transmission over distances up to 240 m in RF?challenged settings, far exceeding standard Bluetooth range and security. High SWaP (size, weight, and power) efficiency, robust battery life, and compatibility with consumer-grade non-intrusive sensors are also vital to ensure the system remains comfortable under military gear and mission constraints.

Specifications Required: The system must provide continuous monitoring of vital signs—including heart rate, ECG, EEG, blood pressure, and SpO?—for real-time detection of physiological episodes in warfighters. It shall operate effectively in confined, high-noise environments such as aircraft, support secure, encrypted wireless transmission over at least 240 m despite RF interference, and integrate with commercially available, non-intrusive physiological wearable sensors within a military-grade, software-defined wireless platform.

Technology Developed: Dirac Solutions, Inc. (DSI) has developed a cutting-edge wearable physiological monitoring system built on a secure, pulse-based wireless architecture. The core technology combines commercially available non-intrusive physiological sensors, Ultra-wideband (UWB) and Narrowband wireless communications technologies.
The system securely transmits vital physiological signals—such as ECG, SpO?, blood pressure, heart rate, and EEG—over extended range, even through RF-challenging environments like aircraft cabins.

Warfighter Value: DSI's wearable physiological monitoring system delivers essential value to warfighters by enabling continuous real-time tracking of vital signs—such as heart rate, ECG, SpO?, blood pressure, and core temperature—to identify fatigue, heat strain, and emerging health risks before they escalate. This capability supports leadership decisions by providing digestible readiness indicators (e.g., "green/amber/red" status), helping prevent musculoskeletal injuries and improve recovery management. Built for resilience in RF-challenged environments, the system securely transmits data over extended distances, even within aircraft or submarines. Integrated into emerging DoD initiatives—like JPEO-CBRND's LifeLens and the Army's Optimizing the Human Weapon System—this technology enhances mission safety, operational readiness, and force survivability through proactive health monitoring and predictive insights.

WHEN

Contract Number: N68335-25-C-0114   **Ending on:** Sep 15, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Body Area Network (BAN) Design and Implmentation	Low	Test and evaluations	6	1st QTR FY26
Sensor-BAN interface	Low	Test and evaluation	6	3rd QTR FY26
UWB-BAN Interface	Low	Test and evaluation	6	4th QTR FY26
Sensor-BAN-UWB Interface	Low	Test and evaluation	6	3rd QTR FY27
System refinement and Testing	Low	Test with an aircraft	6	4th QTR FY27

HOW

Projected Business Model: DSI's business model is to transition innovative research to high TRL through SBIR phase I, II, and III projects and target various applications based on the similar technologies. DSI's current strategy includes working with prime defense contractors for mainframe integration and welcomes the opportunity to test and sell directly to other government agencies if there are sufficient interests.

Company Objectives: DSI aims to design next-gen wireless systems that prioritize reliability, security, low cost, and low power. Its initial focus is on DoD applications, including aircraft, submarine, tunnel, and skyscraper communications, supporting voice, sensor data, and image/video. DSI also targets DOE and nuclear environments, deploying wireless sensor and video systems capable of penetrating thick concrete walls—such as those in nuclear reactors and submarines. Additionally, the technology supports first responder networks in harsh conditions, including firefighters operating in nuclear emergency scenarios.

Potential Commercial Applications: Integrating wearable physiological sensors with reliable and secure wireless transmission—has strong commercial potential across healthcare, industrial safety, public safety, consumer audio, and autonomous systems. In healthcare, it supports continuous remote monitoring, enabling early detection of critical events like arrhythmias and neurological stress. In industrial and construction environments, it enhances worker safety by delivering clear communications and health insights in high-noise settings. Public safety teams (e.g., firefighters, EMTs) benefit similarly during emergencies.

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ONR Approval #2025-9-4-1370

Topic # N211-083
5STARS Boost: Refining 5STARS Network Verification Technology for Transition
Galois, Inc.

WHO

SYSCOM: ONR

Sponsoring Program: ONR Code 31

Transition Target: PEO C4I, PMW 160, PMW 760, PMW 770, US Navy SDNs for C4I and tactical afloat networks.

TPOC: Scott Batson
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Other Transition Opportunities: Computer network defense for networks with high security and reliability requirements, including complex networks spanning land, sea, air, and space.

https://www.defense.gov/Multimedia/Photos/igphoto/2
003262181/

Notes: Founded in 1999, Galois develops technology to guarantee the trustworthiness of systems where failure is unacceptable. We apply cutting edge computer science and mathematics to advance the state of the art in software and hardware trustworthiness. Galois has received two Phase III awards in the past and has successfully transitioned DoD-sponsored technologies into commercial products such as Muse, TangramFlex, thatDot, Toz, and more. 5STARS builds on more than ten years of academic research from Cornell University, Princeton University, the University of Pennsylvania, and others. The 5STARS prototype integrates with software-defined networking (SDN) and 5G deployments and has exceeded early scalability milestones to verify security, integrity, and isolation requirements in mid-sized networks (10s-100s of switches).

WHAT

Operational Need and Improvement: Increasingly advanced computer networks are enhancing communication capabilities for DoD missions, such as those that require high mobility and/or seamless connectivity between Navy vessels and UAV/USV/UUV/UGVs, each with rapidly changing positions. 5STARS is a new automated reasoning technology that improves network reliability, survivability, and resilience by providing dynamic, proactive, real-time network monitoring to detect and remediate network incidents introduced by bugs, operator misconfiguration, or adversarial action. 5STARS augments existing network monitoring solutions by detecting problems with network configurations rather than sampling network packets, meaning issues can be detected before network traffic compromises a security posture.

Specifications Required: 5STARS is a containerized, software-only solution that can be deployed on-prem or in the cloud. It is vendor-agnostic and relies on read-only access to the network management plane, which is typically accessible to network operators.

Technology Developed: 5STARS is based on NetKAT, an algebraic foundation for network verification that has been actively developed since 2014. It constructs a digital twin of the network forwarding plane and uses a new kind of symbolic solver to verify the absence of bugs/vulnerabilities. 5STARS offers higher assurance and verifies more powerful properties than competing technologies. For example, competing tools may verify that one high-security host cannot send traffic to a specific low-security host; 5STARS verifies that no high-sec host can send or receive traffic to any low-sec destination.

Warfighter Value: With 5STARS, the Navy warfighter can more quickly detect and respond to network incidents, identifying issues when they first appear rather than when they are first exploited. 5STARS also ensures the confidentiality and integrity of SDN/5G slices, making it possible for a battlefield partner (of varying degrees of trustworthiness) to securely tunnel through Navy networks (and vice versa) and to detect and route around some kinds of rogue nodes.

WHEN

Contract Number: N64267-25-C-7016   **Ending on:** Mar 15, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Integration in a relevant network environment	Low	5STARS deployed as a network monitor in an operational network (enterprise, data center, SDN, or 5G), continuously verifying network security and availability requirements as defined by security best practices and domain-specific requirements supplied by network operators.	6	1st QTR FY26
Integration in a relevant DevSecOps/CI/CD environment	Low	5STARS integrated into a DevSecOps workflow to verify network security and availability requirements in pre-deployment planning and testing	6	3rd QTR FY26
New capability: Vulnerability triage	Low	5STARS integrated with an end-host vulnerability scanner to triage and deprioritize software vulnerabilities mitigated by network security measures	6	3rd QTR FY27
Integration in a notional transition platform	Medium	5STARS deployed as a prototype network monitor on a transition customer's network platform (staging or production), continuously verifying security and availability properties of interest.	7	4th QTR FY27

HOW

Projected Business Model: Galois's commercialization and DoD transition plan for 5STARS pursues two paths as part of our broader commercialization strategy:
- Incubation and launch of a spin-off company to sell and support proactive, real-time network monitoring software to SDN/5G operators.
- Direct licensing of capabilities to industry partners. For the DoD, 5STARS will deliver demonstrable capabilities for Navy applications that we believe are directly transferable to DoD network and 5G/NextG deployments.
We anticipate direct transition paths to targeted Programs of Record through existing systems integrator relationships. We are in active discussions with various industry partners who have expressed interest in using or licensing the productized results of our research. DoD transition will be in parallel with our broader commercialization strategy. Galois has a track record of transitioning government-sponsored research and development into practical tools and products for both commercial and government entities. We are incubating or have launched eight companies: Tozny, Formaltech, TangramFlex, MuseDev, Niobium, ReplayLogic, ThatDot, and Free & Fair.

**Company Objectives:** Our goal is to integrate this technology into government and prime contractor network deployments with high security and reliability requirements.

Potential Commercial Applications: NetOps and DevSecOps in traditional networks as well as software-defined networks and 5G/NextG deployments.

Contact: Dr. Cole Schlesinger, Principal Scientist
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Department of the Navy SBIR/STTR Transition Program

Topic # N201-077
State-based Machine Aided Real Time Strategy (SMARTS)
Machina Cognita Technologies, Inc

WHO

SYSCOM: ONR

Sponsoring Program: ONR Code 34

Transition Target: Maritime Augmented Teamwork Systems

TPOC: Jeffrey Bolkhovsky
jeffrey.b.bolkhovsky.civ@health.mil

Other Transition Opportunities: Test Resource Management Center

Notes: Machina Cognita Technologies (MCT) is a Service Disabled, Veteran-Owned Small Business (SDVOSB)
Successfully transitioned Machine Learning capabilities within multiple commercial products
Corporate leadership has transitioned multiple SBIRs into Phase 3 efforts
Key Resources:
Former Integration Lead for an ACAT 1 Program on Staff
Machine Learning Research center with High End graphical processing interfaces (GPIs) and Processing Power
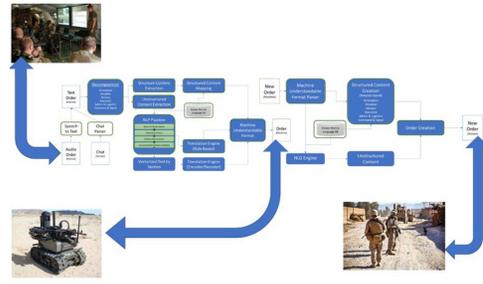
Property of Machina Cognita Technologies 2025

WHAT

Operational Need and Improvement: Military Operations require fast, decisive, and accurate decision making to accomplish missions with optimal performance. Military leaders are forced to make these decisions under constant pressure, changing circumstances, incomplete information, and very short time frames with minimal margin for error. To minimize the exposure to risk, MCT is developing the State-based Machine Aided Real Time Strategy (SMARTS) system. Through the use of local large language models, SMARTS provides warfighters with expanded geospatial awareness and control over autonomous systems.

Specifications Required: SMARTS is designed to ingest, manage, and perform geospatial reasoning with numerous and multimodal data sources. The system can accurately recall data and present it as natural language through a chatbot interface. As SMARTS runs on edge devices, the system is capable of "remembering" latest events, such as last known unit positions, before the user entered a networked denied environment.

Technology Developed: SMART's underlying machine learning and natural language systems improve situational awareness by alleviating a paradox in modern conflict. Information available throughout the decision-making chain is often saturated with sensor data, yet must not impede the ability to make decisions swiftly. SMARTS mitigates this issue by enabling two-way conversation between military doctrine-based and formatted communication to/from machine-understandable messages and control. SMARTS enables the rapid integration of robotic and autonomous systems within existing military missions by understanding military doctrine and providing this translation layer to fielded systems. This capability is powered by a Natural Language Processing pipeline and Semantic Reasoning capability. MCT is responsible for the full development of the SMARTS engine, including deep learning algorithm design, operational support testing, and the integration into a military program of record.

Warfighter Value: SMARTS improves situational awareness by allowing users to quickly receive answers regarding the state of the battlefield and can exert control over autonomous systems with minimal human input lag and using only natural language.

WHEN

Contract Number: N68335-24-C-0097   **Ending on:** Jan 31, 2025

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Individualized Performance Metrics	Low	Automated generation of After Action Reports, adjudication, and analysis of unit performance	6	1st QTR FY26
Sustained learning in network denied environment	Medium	Demonstrate accurate recall of information and course of action suggestion as unit stays disconnected from network	7	2nd QTR FY26
Demonstration to Transition Partner Leadership	Medium	Transition Partner Agreement on Relevancy and Operability of System	8	2nd QTR FY26
Transition to Private Sector Partners	Medium	Entering contract and services agreements negotiations	8	3rd QTR FY26

HOW

Projected Business Model: The SMARTS system will be made available for sale to commercial companies as a software licensing offering. In addition, MCT will offer our services to specialize the software for a given application within both commercial offerings and military solutions. Finally, MCT will offer support services for any fielded applications of the SMARTS system.

Company Objectives: Machina Cognita Technologies is focused on researching and developing machine learning technologies for use in geospatial analytics. Our overall objective is to design, build, and field a wide array of plug-and-play analytic microservice solutions that deliver ML-powered geospatial insights and accelerate business processes while reducing underlying costs.

Potential Commercial Applications: Commercial applications for SMARTS underlying analytics platform include operations planning and risk assessment. The data mode agnostic framework enables rapid development and scalability of tailored product offerings across unique market segments.

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NAVWAR PA Review complete

Topic # N08-T018
CRES for HF
Out of the Fog Research LLC

WHO

SYSCOM: NAVWAR

Sponsoring Program: NAVWAR -SBIR

Transition Target: PMW170

TPOC: (619) 524-2510

Other Transition Opportunities: Naval ships, ground and airborne forces

Notes:

CRES System. Copyright 2025 Out of the Fog Research LLC

WHAT

Operational Need and Improvement: Current systems do not effectively mitigate interference, negatively affecting detection of the Signal of Interest (SOI).

Specifications Required: Battlespace Awareness and Information.

Technology Developed: Radio Frequency Excision System technology eliminates EMI affecting the system.

Warfighter Value: Increased Probability of Intercept (POI) with potential increase in detection range. Capability may be retuned for mitigating future electro-magnetic interference (EMI) sources.

WHEN

Contract Number: N64267-25-C-7020   **Ending on:** Feb 01, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Demonstrate CRES over an octave band in the HF	Medium	Demonstration of Cancellation	4	2nd QTR FY26
Demonstrate CRES over the full HF band	Medium	Demonstrate of Cancellation	4	2nd QTR FY27

HOW

Projected Business Model: Develop a fieldable system that could be sold directly to the DoD.

Company Objectives: We are looking for additional POR that need enhanced EMI mitigation technology for transitions.

Potential Commercial Applications: Improved network capacity in Commercial communication system affected by EMI.

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Topic # N171-083
Integrating Cyber Kevlar Tools into DevSecOps Overmatch Software Armory
P&J Robinson Corporation

WHO

SYSCOM: NAVWAR

Sponsoring Program: ONR Code 31 (C5ISRT)

Transition Target: Project Overmatch Phase III

TPOC: (619) 553-4092

Other Transition Opportunities:
Any company that utilizes software but wants to improve lean code and reduce cybersecurity risks can utilize PJR's tools.

Notes:
PJR is addressing a known cybersecurity issue: all industries and sectors rely on data and software for efficient operations. However, security of software depends on two factors - density of security issues, or "bugs", in the source code, and the amount of code accessible to hackers. External code libraries result in programmers, both human and AI, importing dependencies of unknown origin, while speed to the commercial market causes lapses in strong code development that are particularly effective when DoD chooses Commercial, Off The Shelf software.

PJR

CYBERSECURITY
COMPUTING
OPTIMIZATION
NETWORKING

JAVA DEBLOAT
Transform software by removing dead code, unused libraries and bloat

CONFINE
Container hardening to reduce attack surfaces

miniNODE
JavaScript debloating for Node.js apps to reduce size and attack surface

PJR cybersecurity tools. Logo TM PJR 2022.

WHAT

Operational Need and Improvement: The Navy expressed a desire to develop an automated software tool for the discovery, detection, and removal of unwanted or unnecessary software code and features in any commonly used programming language. Java software programs are notoriously bloated containing only partially used code and libraries. The vast majority of today's Java applications use only a fraction of their code and libraries causing the exploitable attack surface to be larger than necessary.

Specifications Required:
- Fully functioning software toolset for removing dead code and cutting features in java software applications.
- Demonstrate and evaluate the tool on java software applications of varying complexity, along with demonstration of the continued correct and functional operation of the remaining application features.
- Software toolset does not require access to source code. Consultation with original software developers must not be required.
- Software tool shall illustrate interdependencies and changes made to underlying code.

Technology Developed: PJR's automated software reengineering tool allows users to remove dead code and selectively cut unwanted features from software, without requiring access to source code or the developers. Laboratory data shows Java application size can be reduced by over 44% on average and JRE code can be reduced by over 82% on average. Trimming redundant code also removed known security vulnerabilities in the JRE.

Warfighter Value: Modern warfare requires collection and dissemination of information from electronic sources. Compromised software and data can be used by adversaries to adversely affect outcomes and even cost lives. Removing dead code, unwanted features, Cyber Vulnerabilities and Exposures (CVEs) and reducing available attack surface improves the simplicity, reliability and efficacy of software systems used by warfighters.

WHEN

Contract Number: N64267-24-C-0071   **Ending on:** Sep 12, 2025

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Alpha version development	Low	Initial integration & evaluation, robustness characterization, and performance evaluation of three tools (Java Debloat, Confine, and Mininode).	6	4th QTR FY25
Beta version development	Low	Transition subject matter expertise to customers and partners; improvements to workflow and user experience; security improvement metrics; performance improvement metrics.	7	2nd QTR FY26
Software general availability	Medium	Complete the integration and performance evaluation of the tools into the transition target environment. Complete the Phase III transition plan.	8	4th QTR FY26

HOW

Projected Business Model:
PJR plans to target Navy customers by leveraging existing and developing new customer relationships and contract vehicles. PJR also intends to leverage existing partnerships with Large Systems Integrators (LSIs) to deliver on major programs. PJR also plans to develop delivery partners to rebadge/resell software licenses, and support agreements to their commercial and Government customers. PJR plans to offer licenses for sale or software as a service along with installation and configuration services ensure customer success. Customers can purchase a license outright or hire PJR or a delivery partner to run the software.

Company Objectives:
PJR seeks to continue research and development through non-dilutive funding efforts sponsored in part through teaming with government partners. This continued R&D, along with our existing suite of cybersecurity products, will continue to support PJR in differentiating itself from our competitors.

Potential Commercial Applications:
PJR has commercial versions of their cybersecurity suite available for use.

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NAVSEA #2025-055

Topic # AF20C-TCSO1
AI Powered Market Intelligence & Tech Scouting Recommendation Engine to Drive DoD Discovery and Engagement of an Innovative Industrial Supply Chain
Third Coast Federal, Inc.

WHO

SYSCOM: NAVSEA

Sponsoring Program: NAVSEA

Transition Target: SEA05T, Naval Surface Warfare Centers, Naval Undersea Warfare Centers, Program Executive Offices, Program Management teams

TPOC: (401) 832-7032

Other Transition Opportunities:

NAVAIR, NAVWAR, MCDC, ONR

Notes:

Third Coast Federal, Inc. is a tech company and federal consultancy that helps teams from DoD, industry, and academia develop innovative dual use solutions to complex operational and sustainment challenges, with validated Artificial Intelligence (AI) to rapidly evaluate and refine large database queries.

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WHAT

Operational Need and Improvement: Despite the acknowledged importance of the small business sector, DoD spends over 63% of its contracting budget with 100 large defense contractors and deals with only a tiny fraction of the 30 million small businesses in the United States.

One of the key barriers to solving DoD's supply chain issue is the lack of effective tech scouting and market research tools. Tech scouting and market research are labor intensive processes because the current tools are incomplete and imprecise. As a result, scouts are often unable to identify the innovative companies, faculty and solutions that are ideally suited to address DoD's requirements.

Specifications Required: Congress has mandated that DoD substantially increase its small business engagement. Furthermore, Congressional legislation is calling for DoD to establish mechanisms to provide small business concerns with direct access to program and requirement offices throughout the DoD that may purchase technology from small businesses under Phase III of the SBIR program of the DoD.

Technology Developed: To address DoD's scouting and research requirements, Third Coast Federal, Inc. and the University of Notre Dame developed iScout, an AI powered tech scouting and market research platform, under an Air Force Small Business Technical Transfer (STTR) award. iScout offers users a method for instantaneously evaluating a complex problem statement describing a multidisciplinary challenge (e.g., solicitation summary) against the capabilities of an entire marketplace to identify Innovators with the greatest potential to solve the challenge. iScout also allows users to search by technical concepts in our knowledge graph, by a known business or by traditional natural language phrases. In addition to businesses, iScout also returns a list of relevant federal SBIR|STTR and contract awards, patents, articles and web pages.

Warfighter Value: SMEs in the Navy S&T Enterprise own the process of technology scouting. With improved AI-driven tools, they can reduce this burden and identify better fits for required technology acquisition, faster.

WHEN

Contract Number: N00024-25-C-T042   **Ending on:** Mar 10, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Navy S&T customer engagement with iScout platform.	Low	Positive customer engagement with platform.	7	4th QTR FY25
Collection of Navy S&T customer feedback.	Low	Customer feedback collected and reviewed.	7	1st QTR FY26
Iterative platform development based on customer feedback.	Low	Navy S&T customer feedback applied and platform function verified and validated.	7	2nd QTR FY26

HOW

Projected Business Model:

Third Coast Federal, Inc., dba iScout.ai, is positioning itself as a leader in utilizing AI for innovation management software.

Company Objectives:

Third Coast Federal, Inc. delivers AI-enabled solutions, data-driven insights, and strategic programs to fuel innovations and solve critical problems in automation, energy, healthcare, manufacturing, microelectronics, robotics, and other areas of importance to national and economic security.

Potential Commercial Applications:

Technology scouting software can help commercial and industrial firms track emerging technologies as well as the innovation ecosystem itself, including activity of startup companies, patent applications and approvals, and market trends for various sectors. This data can, in turn, support decision makers in understanding the Return On Investment, inform a Business Case analysis for acquisition, or identify known innovators with advantageous intellectual property (IP). Of note, technology scouting software models exist, but none of them have the ability to intelligently sort through thousands of hits in multiple databases while also providing true value in identifying what IP is aligned with a companie's priorities through validated data evaluation and refinement like iScout.

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Topic # N234-P08
Integrating the Advanced Correlator-Navy (ACOR-N) Data Fusion Processor into the Command and Control Experimentation (C2X) Capability to Enhance Its Performance
Wilson Eagle Limited Partnership

WHO

SYSCOM: NAVWAR

Sponsoring Program: NAVWAR, PMW 150 Command and Control

Transition Target: PMW 150 Command and Control Experimentation (C2X); PEO IWS 6.0 Cooperative Engagement Capability (CEC)

TPOC: (619) 553-2861
Nicholas.j.gizzi.civ@us.navy.mil

Other Transition Opportunities: NAVSEA Cooperative Engagement Capability, NAVAIR Minotaur Program, COMTHIRDFLT MIOC, COMPACFLT, and several highly classified programs.

Notes: To detect, track, classify, and identify (DTC&I) contacts a high interest in WESTPAC, as well as IUU fishing vessels, drug runners, pirate ships, and the illegal arms carriers. AI/ML processes to autonomously characterize behaviors of self-reporting maritime traffic using AIS data in order to use these behavioral models and data to (1) identify apparent shipping lanes and (2) detect anomalous behavior in support of determining surface vessel intent.
The Advanced Correlator – Navy (ACOR-N) data fusion processor can vector in an unmanned aerial system (UAS) to interdict a contact of interest.
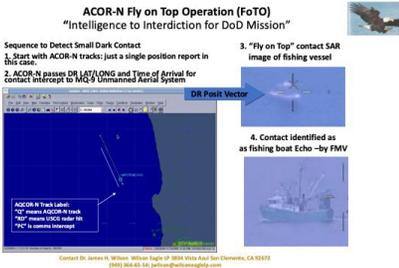

ACOR-N Fly on Top Operation (FoTO)
"Intelligence to Interdiction for DoD Mission"

Sequence to Detect Small Dark Contact
1. Start with ACOR-N tracks: just a single position report in this case.
2. ACOR-N passes DR LAT/LONG and Time of Arrival for contact intercept to MQ-9 Unmanned Aerial System

3. "Fly on Top" contact SAR image of fishing vessel

4. Contact identified as as fishing boat Echo –by FMV

Image courtesy Wilson Eagle 2025.

WHAT

Operational Need and Improvement: Detection, Tracking, Classification (DT&C) of Contacts of Interest provided by the Advanced Correlator-Navy (ACOR-N) – cueing for dark contact acquisition through optimized search. ACOR-N tracks Automatic Identification System (AIS) ships accurately to declutter non-interest to enhance contact DT&C.

Specifications Required: AI/ML processes to autonomously characterize behaviors of self-reporting maritime traffic using AIS data in order to use these behavioral models and data to (1) identify apparent shipping lanes and (2) detect anomalous behavior in support of determining surface vessel intent. ACOR-N will enhance the performance of limited numbers of interdiction assets to patrol large areas.

Technology Developed: ACOR-N's data fusion and characterization is well tested, and associated enhancement applications support mission execution.
Future capabilities being developed include fusion of data from other sources for a clearer operational picture.

Warfighter Value: Through data fusion and characterization, ACOR-N detects contacts of interest in dense and cluttered maritime environments. ACOR-N uses AI/ML processes to autonomously characterize behaviors of self-reporting maritime traffic using AIS data in order to use these behavioral models and data to (1) identify apparent shipping lanes and (2) detect anomalous behavior in support of determining surface vessel intent.
ACOR-N's fusion of sensor sources integrated to operational picture enhances interdiction probability.

WHEN

Contract Number: N68335-25-C-0167   **Ending on:** Mar 15, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Develop ACOR-N for commercial applications, such as IUU Fishing detection and tracking, Drug Runner detection and tracking, and pirate ship detection and tracking	Medium	SBIR Phase 3 contract award	7	1st QTR FY26
ACOR-N Transition to program of record	Medium	SBIR Phase 3 contract award	8	4th QTR FY26

HOW

Projected Business Model: Current overall TRL 6; associated applications vary in TRL, but all applications integrate with the fusion engine. Optimize ACOR-N and incorporate with various Civilian and DoD platforms.

Company Objectives: Develop and refine ACOR-N to add further Warfighter value. Collect AIS, Elint, and other ship track data in Areas of Interest to support mission execution. Provide a Pattern of Life (PoL) ship historical baseline.

Potential Commercial Applications: Technology developed could be used IUU Fishing detection and tracking, maritime drug running detection and interdiction, and pirate ship detection and tracking.

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NAVWAR PA Review complete

Topic # N234-P08
ACED (Altering Current-state to an Effective Desired-state)
XAnalytix Systems

WHO

SYSCOM: NAVWAR

Sponsoring Program: SYSCOM: NAVWAR

Transition Target: PMW150

TPOC: (619) 553-2861

Other Transition Opportunities:

Notes:) The gap between a military mission's current and desired state is critical for planners and strategists. It involves assessing the military's existing capabilities, resources, and readiness (the current state) and comparing it to the intended objectives and goals of the mission (desired state). The gap between the military mission's current and desired state is fundamental to military planning. It enables commanders to understand their challenges, allocate resources effectively, and make informed decisions to achieve their mission's objectives successfully. ACED (Altering Current-state to an Effective Desired-state) framework will provide capabilities to operators that allows for quick decision making based on the past, current and future gap. ACED will work in tandem with simulated environments to explore the future state space of a mission given some initial conditions. The use of Reinforced Machine Learning will automatically create new conditions to provide a breadth of simulations that provide coverage over likely future outcomes. The simulated missions will be evaluated throughout the mission time to provide metrics as to how measures are progressing in both the goal of the mission and the timing of the mission. The metrics are evaluated to determine which are good indicators of goal successfulness and mission timeliness. Goal gaps and Time gaps will then be determined by using the values of the indicators. This gap analysis will be done at the task level and will be fused up to a mission level gap using Analytic Hierarchy Process (AHP). The gap between the planned/desired state and the current/predicted state will serve as triggers for other algorithms to provide recommendations on future decisions to minimize the gap. Examples of recommendations ACED will provide include when to trigger a replan, What-If analysis and optimal Course-of-Action recommendations.
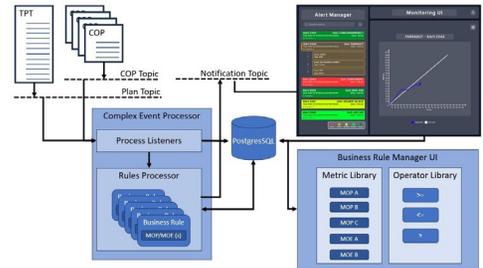
Image courtesy Xanalytix

WHAT

Operational Need and Improvement: Ability to monitor a single fused metric that provides insight into how the planned mission is progressing versus the expectations.

Specifications Required: In the current development a requirement would be to ability to model the mission for simulation results that will feed the analysis capabilities. In the future with additional funding the components of a mission would be modeled and trained on individually changing the requirement to only needing to model elements of a mission that have never been seen before.

Technology Developed: High fidelity simulations for data creation; Use of clustering and support vector machines to learn feature importance and breakpoints; Reinforcement and Inverse Reinforcement learning to simulate live during mission when unexpected events occur; Multi-INT data fusion to provide a single gap metric to an operator; User interface to display results and allow for operator interaction and drill down capability.

Warfighter Value: ACED framework will allow command and control and the warfighters to do predictive planning (what-if analysis) and reactive planning (in mission replan) by analyzing the acceptable gaps. ACED will automate the process to provide recommendations given a set of bounds for the mission (i.e. number of assets, location of assets, asset capabilities, etc.).

WHEN

Contract Number: N68335-25-C-0160   **Ending on:** Jan 25, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Technical Objective 1 Automated sparse simulation configuration discovery	Low		4	1st QTR FY26
Technical Objective 2 Automated learning of indicator features	Low		5	2nd QTR FY26
Technical Objective 3 Evaluate Mission State Gap	Medium		6	1st QTR FY27
Technical Objective 4 Enable Predictive and Reactive planning	Medium		7	1st QTR FY28

HOW

Projected Business Model: License to the US Navy

Company Objectives: XAnalytix System's goal is provide operators with automated tools that improve their situational awareness and speed to make decisions all while providing explainability to the results being presented.

Potential Commercial Applications: The main technology of this effort is a means to efficiently evaluate gaps between desired states of a mission to actual current observed states. The technology has applicability to a variety of domains including both government and commercial sectors. The outcome of ACED will provide meaningful measurements for both operational and time discrepancies that need to be addressed for the success of a mission. The importance of this project is not only to address real-time deficiencies but also allow planners to perform what-if analysis prior to execution. Besides the importance of ACED for Maritime Tactical Command and Control (MTC2), the technology could be applied to several military applications. In particular, it could help in Joint operations research conducted by JDC2 and logistics and deployment of forces. In summary, this approach could be researched for any military mission.

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Cyber

Company	Topic	Project Title	SYSCOM
Dignitas Technologies, LLC	N211-088	Cyber Simulation TRaining for Impacts to Kinetic Environment (CyberSTRIKE) II	ONR
GrammaTech, Inc	N161-070	Scalpel-Debloat	NAVWAR
Smart Information Flow Technologies, d/b/a SIFT	N23A-T009	MADEIRA: Multi-Agent Debloating Environment to Increase Robustness in Applications	NAVSEA

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DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.
ONR Approval #2025-8-27-1327

Topic # N211-088
Cyber Simulation TRaining for Impacts to Kinetic Environment (CyberSTRIKE) II
Dignitas Technologies, LLC

WHO

SYSCOM: ONR

Sponsoring Program: Office of Naval Research (ONR)

Transition Target: Initial transition target for our solution is the Navy Continuous Training Environment (NCTE) to support Navy Fleet Synthetic Training (FST) and similar distributed training events executed by Tactical Training Group Pacific (TTGP) and other Distributed Training Centers (DTC).

TPOC: Natalie Steinhauser
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Other Transition Opportunities: This technology can be transitioned to programs in the Navy and other Services to incorporate realistic cyberspace effects in modeling and simulation environments for warfighter training. We believe the Navy's new TRIDENT Training Center could have use cases that will benefit from CyberSTRIKE, and perhaps organizations such as NAVWAR and NAVAIR.

Notes: Cyber Simulation TRaining for Impacts to Kinetic Environment (CyberSTRIKE) enables injection and automated monitoring of simulated cyberspace and electromagnetic warfare (EW) effects in the training environment. This work builds upon our current Phase III SBIR called Cyberspace Battlefield Operating System Simulation (CyberBOSS), which provides a similar solution for Army training. Both efforts support integration of cyberspace effects within multi-domain training scenarios.

https://media.defense.gov/2023/Jun/02/2003235013/-1/-1/0/230601-N-SN516-1134.JPG

WHAT

Operational Need and Improvement: Malicious cyberspace and EW activities are increasingly used by our adversaries to gain informational and tactical advantage in the modern battlespace. The Navy needs to improve its ability to train command staff to identify and mitigate these threats against shipboard systems. However, NCTE simulation systems, such as the Joint Semi-Automated Forces (JSAF) used during Navy FST and other distributed training events, do not adequately represent the cyberspace warfighting domain. During training events, threat cyberspace activities are not incorporated into the simulation and do not affect shipboard systems. CyberSTRIKE improves cyberspace training by providing realistic cyberspace effects on shipboard systems, allowing Navy command staff to train to protect their assets against threat cyberspace and EW operations.

Specifications Required: Implementation of realistic simulated cyberspace and EW effects on shipboard Command, Control, Communications, Computers and Intelligence (C4I) systems due to actions within the simulation environment. CyberSTRIKE integrates with Navy training systems within the NCTE to coordinate cyberspace and EW effects across the simulation environment and shipboard operational systems.

Technology Developed: Brokering architecture and user interfaces for injection and automatic monitoring of cyberspace effects within existing Navy training architectures to enable integrated cyber-kinetic training. CyberSTRIKE integrates with Live, Virtual, and Constructive (LVC) training systems to communicate effects using a variety of simulation and tactical messaging protocols. CyberSTRIKE injects, alters, or stops tactical messages communicated from the simulation to shipboard systems to produce realistic cyberspace and EW effects on operational systems.

Warfighter Value: The goal of this technology is to provide training support during Fleet Synthetic Training (FST) events to impart awareness to Naval commanders of cyberspace operations on their assets and to gain an understanding of the use of the cyberspace domain in conjunction with other traditional kinetic domain operations. This technology will significantly improve multi-platform training for identification and mitigation of cyberspace domain effects which will improve overall fleet readiness in the current warfighting environment.

WHEN

Contract Number: N68335-25-C-0085   **Ending on:** Dec 11, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Initial Phase I Prototype Developed	Low	Integration and testing within Naval Simulation Center - Pacific (NSCPAC) Research, Development, Test, and Experimentation (RDTE) architecture	3	4th QTR FY22
Demonstration of cyber effects on representative Navy C4I systems	Low	Manifestation of several types of cyber effects on multiple shipboard C4I systems	4	3rd QTR FY23
Demonstration of cyber effects on representative Navy C4I systems for training use-cases	Medium	Creation of realistic cyber effects to support training exercise objectives	5	3rd QTR FY24
Demonstration of cyber effects on representative Navy C4I systems in a relevant environment	Medium	Creation of realistic cyber effects to support training exercise objectives within a relevant environment	6	3rd QTR FY25
If Option exercised, demonstration of cyber effects on representative Navy C4I systems within an operational environment	Medium	Creation of realistic cyber effects to support training exercise objectives within an operational environment, such as during a FST-J event	7	1st QTR FY27

HOW

Projected Business Model: Dignitas plans to continue conducting test and evaluation of CyberSTRIKE to demonstrate the benefit of our solution to incorporate cyber effects into Navy training. We will pursue an ONR Technical Candidate (TechCan) and Phase III funding to explore additional transition to larger, distributed Navy exercises such as FST-Joint (FST-J) and LVC Composite Training Unit Exercises (COMPTUEX). We will also explore transition to training organizations of other DoD Services, the Joint community, and international organizations that have requirements to incorporate offensive and defensive cyberspace and EW operations in their training scenarios.

Company Objectives: Dignitas aims to continue to grow our cyberspace training toolsets, capabilities, and expertise in order to facilitate our warfighters, and to gain additional competitive advantage on opportunities related to DoD training systems. Our business objectives include providing engineering services to research, develop, and modernize DoD training systems.

Potential Commercial Applications: Potential commercial markets include private sector training environments such as commercial aviation trainers, which have emerging need to include cyberspace threats in training scenarios.

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NAVWAR PA Office approved

Topic # N161-070
Scalpel-Debloat
GrammaTech, Inc

WHO

SYSCOM: NAVWAR

Sponsoring Program: NIWC Pacific

Transition Target: Navy Overmatch Software Armory

TPOC: (619) 553-4092

Other Transition Opportunities:
Dykondo is best applied in software factories, notably DevSecOps environments, where applications are developed and production tested. Any platform leveraging containerized applications as part of their deployment or for over-the-air updates will realize full benefits.

Transition opportunities of special note:
NAVSEA 03 (Cyber Engineering & Digital Transformation) leadership has engaged in the interest of integration into their many software factories.
Dykondo has also been approved for the Department of Air Force's Platform One.

Notes: Dykondo: an automated, application-aware, container debloating and cyber hardening tool; a proactive security solution that reduces image size and attack surface without manual tuning, and can apply a range of application protections. Stop cyber attacks. Reduce startup time. Deploy faster to the edge.

Image courtesy of GrammaTech, Inc.

WHAT

Operational Need and Improvement: The Navy has an operational need for secure, lightweight, and reliable containerized software that can be rapidly deployed across platforms in contested, disconnected, or resource-limited environments. Standard containers include unnecessary artifacts that increases cyber risk and slows performance. Dykondo addresses this need by automatically removing excess software, reducing the attack surface, and hardening applications without requiring manual tuning. This enables faster, more secure deployments that are resilient against cyber threats, supporting mission readiness and operational effectiveness at the edge.

Specifications Required: Tool/toolset that reduces workload in retrofitting binary executables towards enhancing the security defenses of an embedded system, which should: 1) operate statically on a binary image, not dynamically requiring modifications to the loader or interface; 2) accept a binary image as input, integrate the new functionality; and 3) output an enhanced binary image that has been retrofitted with the new code. The technical approach should include analysis of binary code formats, binary reverse engineering, binary rewriting, and insertion of new functionality/code into an existing binary safely and in a manner that impacts the overall system in a predictable fashion.

Technology Developed: Dykondo is an automated, application-aware, container debloating and cyber hardening tool that intelligently removes unnecessary files and software from container images while preserving necessary functionality, and can apply a range of application protections, with the resultant container more resistant to cyber-attacks. Developed by GrammaTech, a leader in advanced cybersecurity and software assurance, Dykondo targets DevSecOps environments, especially where secure, efficient deployment to production and edge platforms is critical. Its innovative approach minimizes image size and attack surface without requiring complex Dockerfile tuning, offering a clear advantage in security, performance, and maintainability. By reducing false positives in vulnerability scans and eliminating excess code, Dykondo significantly lowers operational risk. The ideal customer is one managing containerized workloads, while investors with a focus on cybersecurity and defense innovation will find value in Dykondo's scalable and mission-aligned capabilities.

Warfighter Value: Dykondo directly enhances the Navy warfighter's mission readiness by improving the security, performance, and reliability of software systems deployed. By automatically removing unnecessary components from containerized applications, Dykondo reduces the attack surface and minimizes the risk of cyber intrusions, which is critical in contested or resource-constrained environments such as at sea or on the tactical edge. Its ability to harden software without manual tuning allows for faster, more secure deployment cycles in DevSecOps workflows, aligning with the Navy's push for rapid innovation and secure digital modernization. With Dykondo, warfighters and mission-critical systems benefit from leaner, more resilient software, ultimately supporting more secure, efficient, and dependable operations across naval platforms.

WHEN

Contract Number: N64267-24-C-0073   **Ending on:** Sep 25, 2025

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Training Session 1	N/A	Complete		1st QTR FY25
Training Materials R24.12	N/A	Complete	7	1st QTR FY25
Training Session 2	N/A	Complete		2nd QTR FY25
Software & Training Materials R25.03	N/A	Complete	7	2nd QTR FY25
Training Session 3	N/A	Complete		3rd QTR FY25
Software & Training Materials R25.06	Low		8	3rd QTR FY25
Training Session 4	N/A			4th QTR FY25
Software & Training Materials R25.09	Low		8	4th QTR FY25

HOW

Projected Business Model: The core revenue model is through on-premises and Software-as-a-Service Dykondo solutions. This includes customized onboarding, integration support, and consulting for hardened deployment pipelines. GrammaTech would also provide security best practices and usage training for teams adopting container hardening at scale.

Company Objectives: Validate commercial market fit, enhance product viability through targeted customer feedback, and refine our go-to-market strategy; build relationships that support commercial pilots to secure follow-on funding or strategic partnerships that accelerate adoption in high-security sectors.

Potential Commercial Applications: Defense, critical infrastructure, and healthcare are obvious commercial markets for Dykondo - sectors where software containers are widely used and attack surface reduction is essential. GrammaTech has early engagement with a dozen commercial companies in these sectors and have received multiple requests for demonstrations. Formal customer discovery in the commercial space is not yet complete, but our experience with DoD users, including NAVWAR and NAVSEA, has strongly validated the problem in adjacent environments.

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NAVSEA #2025-034

Topic # N23A-T009
MADEIRA: Multi-Agent Debloating Environment to Increase Robustness in Applications
Smart Information Flow Technologies, d/b/a SIFT

WHO

SYSCOM: NAVSEA

Sponsoring Program: OPNAV Sponsor: N96 Surface Warfare, N97 Undersea Warfare; Technology Sponsor: Douglas Marker, PEO IWS TM

Transition Target: PEO IWS 5.0/1.0—Q2FY28; POR: AN/SQQ-89, AN/BQQ-10, Aegis

TPOC: (401) 832-3992

Other Transition Opportunities: Naval Information Warfare Center (NIWC), Large Unmanned Surface Vehicle (LUSV)
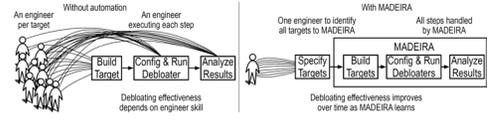
Notes:

MADEIRA automates the operation of debloating tools for diverse software targets, reducing human effort and improving debloating results.

WHAT

Operational Need and Improvement: Reduce software attack surface, thereby reducing the cost to maintain and upgrade software systems and reduce risk of unknown vulnerabilities.

Specifications Required: Platform capable of running modern Linux kernel and containers, with the ability to connect to or load the target systems to be debloated.

Technology Developed: Containerized, standalone software and documentation. The auto-debloating tool will be easily run within developers' software development pipelines.

Warfighter Value: Reduced support costs, improved software stability, reduced attack surface (improved security), increased uptime.

WHEN

Contract Number: N00024-24-C-T205   **Ending on:** Sep 30, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
MADEIRA Proof-of-Concept	Medium	Number of debloating tools inregrated; number of target categories handled; number of different build and test systems recognized	6	3rd QTR FY27

HOW

Projected Business Model: Initial product will center around the Navy's needs for automating software debloating, with the goal of creating mature software that we hand off to the pipeline with a licensing agreement. We will also heavily market the sub-component of MADEIRA which automates the building of a wide variety of different software.

Company Objectives: We estimate $1M to bring MADEIRA to market. We will raise these funds either through licensing to DoD customers or teaming with large integrators on additional programs. Ultimately, we will pursue licensing opportunities to transition MADEIRA.

Potential Commercial Applications: Software systems with critical security needs or high maintenance costs. Secure DoD and Prime system integrators, banking, utilities, and telecommunications companies are especially likely to see significant benefits.

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Electromagnetic Warfare (EW)

Company	Topic	Project Title	SYSCOM
Adaptive Dynamics, Inc	N193-D03	Resilient Tactical Communications Using Interference Mitigation Techniques	NAVWAR
BlueRISC Inc	N234-P07	Navigation Warfare Situational Awareness with AI/ML	NAVWAR
Tercero Technologies Inc.	N192-048	Computationally Efficient Deep Learning-Powered EWS Radar Data Preprocessor (CELER)	MCSC

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NAVWAR Approved

Topic # N193-D03
Resilient Tactical Communications Using Interference Mitigation Techniques
Adaptive Dynamics, Inc

WHO

SYSCOM: NAVWAR

Sponsoring Program: Department of War (DOW)

Transition Target: Software Defined Radios (SDR)

TPOC: (619) 252-8077

Other Transition Opportunities: Virtually any system with one or more antennas. Upgrade existing Software Defined Radio (SDR) via firmware update or install SDR applique hardware in-between existing antenna(s) and receive electronics. Counter-EW capability agnostic to platform application (C4ISR, GPS, PNT, Radar, etc.)

Notes:

Image courtesy Adaptive Dynamics

WHAT

Operational Need and Improvement: Electronic Warfare (EW) is a growing threat to any system with an antenna, producing a standoff range to deny operation of C4ISR systems within the area of operation. Interference Mitigation (IM) that blindly negates EW signals serves as a countermeasure to protect C4ISR systems, restoring normal operation of protected systems within close proximity of EW systems and thus dramatically reducing effective standoff range.

Specifications Required: Interference Mitigation Benefit (IMB) is the key figure of merit specifying how much additional interference power can be tolerated by a protected C4ISR system without degrading operation. IMB specifications are generally classified.

Technology Developed: Blind, Single and Multi-Antenna Interference Mitigation (IM) algorithms developed as an ultra-resource efficient VHDL implementation that can be easily ported to any Intel or AMD based Software Defined Radio (SDR) system.

Warfighter Value: Rapid, low-cost integration into any C4ISR system (with an AMD or Intel based SDR architecture) to add EW countermeasures as a firmware upgrade.

WHEN

Contract Number: N64267-24-C-0045   **Ending on:** Sep 24, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Integration Complete	Low	Specified IMB Attained	8	TBD

HOW

Projected Business Model: Licensing of Intellectual Property (IP)

Company Objectives: Integrate Counter-EW Capability as a firmware update into any system with an antenna and an field-programmable gate array (FPGA).

Potential Commercial Applications: Counter EW, Counter Jamming, and Counter Unmanned Systems (UxS) to Protect Critical Infrastructure (e.g. Cellular Networks, Satellite Systems, GPS, Air Traffic Control, Navigation and Radar Systems, Water/Power Grid, Government Buildings, Event Venues)

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DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.
NAVWAR PA review complete

Topic # N234-P07
Navigation Warfare Situational Awareness with AI/ML
BlueRISC, Inc.

WHO

SYSCOM: NAVWAR

Sponsoring Program: PMW/A 170

Transition Target: Navy GPNTS

TPOC: mclaina.mazzone.civ@us.navy.mil

Other Transition Opportunities: Other programs with PNT requirements that cannot afford/fit sophisticated anti-jam/spoof detection antennas.

Notes: This image depicts a snapshot from the GPS IntelliSense Situational Awareness User Interface. In this example, the solution has identified a GPS spoof attack – occurring on satellite 20 – as shown in red. Specific details including the attacker's intent, the effect on location and timing as well as others are visualized. In addition, the solution is able to "remove" the attack and proactively correct the PNT data – as shown in green.

Image courtesy of BlueRISC, Inc., Copyright 2025

WHAT

Operational Need and Improvement: Current GPS anti-jamming/spoof detection solutions are largely hardware-based, and often costly, systems that are integrated into antenna designs including both active and passive multi-phase antenna systems, anti-jam antennas, and systems with multiple receivers to exploit angle of arrival analysis. While often effective, these systems are often immutable and cannot easily evolve with emerging threats and/or provide additional Navigation Warfare Situational Awareness. BlueRISC's GPS IntelliSense™ addresses this critical gap through a software-based, AI/ML-driven approach that detects spoofing attacks – including previously unseen, sophisticated timing and position manipulation – without requiring hardware changes. The solution has been validated with actual GPNTS data and is designed for flexible, software-based integration.

Specifications Required: Given the security critical nature of PNT data in DoD system, it is essential to understand when the data is trustworthy, when it is under attack as well as understanding the intent of the attack such that remediation and mitigations can be effectively employed.

Technology Developed: BlueRISC's GPS IntelliSense™ is a low cost, software-only, AI/ML GPS jamming/spoof detection, attribution and characterization module supporting navigation warfare situational awareness. It significantly reduces operational risk by providing a validated and independent spoof detection capability that strengthens GPS-based situational awareness under adversarial conditions. It is trained with real-world GPNTS data, ensuring detection reliability in operational defense environment and more.

Warfighter Value: BlueRISC's GPS IntelliSense™ is a GPS spoof detection and mitigation solution for mission-critical navigation systems, provides enhanced situational awareness under sophisticated spoofing threats, electronic warfare resilience, simulation and training support. It can be integrated into systems that cannot afford or fit hardware-based PNT threat detection solutions. Initial target integration is the Navy GPNTS program.

WHEN

Contract Number: N68335-25-C-0158   **Ending on:** May 25, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
SBIR Phase I proof-of-concept demonstration	N/A	Proof-of-concept GPS IntelliSense in GPNTS	5	1st QTR FY25
Initial Prototype solution	Low	Prototype solution validated through test and evaluation with GPNTS data	6	1st QTR FY26
Prototype solution operating in Navy GPNTS	Low	Prototyped demonstrated in GPNTS system	7	3rd QTR FY26
Matured solution demonstrated in GPNTS	Medium	Product utilized in live GPNTS system(s)	8	3rd QTR FY27
Transition solution to GPNTS	Medium	Operational solution meeting Navy requirements	9	3rd QTR FY28

HOW

Projected Business Model: Since 2002, BlueRISC has worked with the government to provide innovative solutions to cutting-edge problems in the embedded system assurance space. BlueRISC will license the GPS IntelliSense™ to large system integrators and/or U.S. Navy programs. BlueRISC will provide users with full documentation, as well as example use cases, on how to use GPS IntelliSense™. BlueRISC has commercialized toolkits resulting from SBIR efforts in the past and will leverage its existing online and licensing infrastructure. These solutions have been sold worldwide in more than 20 countries.

Company Objectives: BlueRISC is helping to ensure mission resilience by delivering AI/ML-driven spoof detection capabilities to enhance GPS integrity and situational awareness. For over twenty years, BlueRISC, Inc. has delivered advanced system assurance and cybersecurity technologies to government and commercial partners. GPS IntelliSense™ is a software-based solution that provides real-time spoof detection and situational awareness, validated in the Navy GPNTS program with actual GPNTS data.

Potential Commercial Applications: This solution targets Navy GPNTS platforms and is currently being validated in partnership with the Raytheon/Collins PNT group. With that said, it is largely use-case agnostic and has can be easily adapted to ground and avionics use-cases as well. We seek to expand adoption through direct licensing to major defense integrators and U.S. Navy programs.

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MCSC-PRR-118

Topic # N192-048
Computationally Efficient Deep Learning-Powered EWS Radar Data Preprocessor (CELER)
Tercero Technologies Inc.

WHO

SYSCOM: MCSC

Sponsoring Program: PM Tactical Communications and Electromagnetic Warfare Systems (PM TCE)

Transition Target: Marine Electromagnetic Warfare Ground Family of Systems (MEGFoS)

TPOC: sbir.admin@usmc.mil

Other Transition Opportunities: Other DoD dismounted electronic warfare systems, unattended ground sensors, and autonomous vehicles with significant size, weight, and power (SWaP) constraints.

Notes: We are developing two key technologies: (1) a tool that converts machine learning models to run on field programmable gate arrays (FPGAs), which are specialized processor that can make running machine learning models at the tactical edge more efficient, making it much easier and faster to deploy ML models and (2) machine learning models to do distributed drone detection, localization, and tracking, with the machine learning models being deployed to FPGA-based software-defined radios using our FPGA tool. We are also creating a 3D augmented reality user interface for visualizing tracking results.

U.S. Marine Corps photo by Lance Cpl. Isaac Velasco.
https://www.dvidshub.net/image/7424456/1st-radio-battalion-field-exercise

WHAT

Operational Need and Improvement: MCSC provides dismounted electronic warfare (EW) systems for geolocating, direction finding, and countering threats on the ground and in the air (e.g., UAS). There is a growing need for high-performance computing systems, particularly machine learning-based systems, for analyzing large amounts of signals data in realtime in SWaP-constrained applications at the tactical edge. By analyzing data at the sensor, EW systems can provide realtime alerts when detecting signals of interest, allowing Marines to respond more quickly to potential threats.

Specifications Required: The ability to: (1) track slow-moving objects; (2) track objects among slow moving point clutter (e.g., birds and insects); and (3) identify and rejoin intermittent or disjointed tracks in a highly complex electromagnetic environment. The solution must be able to draw out multiple tracks at once from billions of data points. The system shall have a Signal of Interest (SOI) false alarm rate no greater than 5% within any 24-hour period, must be easily integrated with a dismounted backpack-sized EWS, and must be antenna agnostic. The system shall be no larger than 12" by 6" by 4" (not including an antenna) and weighing no more than 5 lbs. Messaging shall be Joint Interface Control Document (JICD) 4.2 compliant.

Technology Developed: The technology consists of a software tool that automatically converts machine learning models to secure, efficient field programmable gate array (FPGA) hardware designs. We are initially targeting dismounted electronic warfare applications that require significant processing at the tactical edge in applications with SWaP constraints. We are also developing a cooperative machine learning-based UAS tracking system that will be deployed to FPGA-based software defined radios (SDRs) using our FPGA tool. To visualize the tracking results, we are also developing a 2D graphical user interface, a 3D augmented reality user interface, and a connector for displaying tracks in ATAK. Initial target applications include dismounted electronic warfare systems, unattended ground sensors, and autonomous vehicles.

Warfighter Value: Software-defined radios (SDRs) are at the core of many EW/SIGINT hardware devices, with many of those SDRs being powered by FPGAs. Our FPGA tool will allow new capabilities to be deployed to these devices, and consequently to the warfighter, more quickly than using traditional FPGA hardware design methods. Our cooperative UAS sensing, deployed using this FPGA tool, will provide the ability to detect composite tracks in real time at the tactical edge, reducing the amount of data needed to be transmitted and post-processed at a TOC. This will result in more efficient signal analysis and ultimately improved effectiveness of EW capabilities. Furthermore, our user interface approaches, particularly our 3D augmented reality visualization of tracking results, will allow Marines to more easily and quickly view the direction of arrival of signals of interest as well as the positions of any localized emitters.

WHEN

Contract Number: M67854-25-C-6503   **Ending on:** Mar 06, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Demonstrate Phase I Feasibility	Low	Initial Study Showing Feasibility of Each System Component	3	3rd QTR FY21
Demonstrate Integrated FPGA-Based System	Low	Meets Objective Performance Specifications	4	3rd QTR FY24
Demonstrate Integrated SDR-Based Drone Tracking System	Low	Meets Objective Tracking System Performance Specifications	5	4th QTR FY26
Demonstrate Full-Scale Hardware Prototype	Low	Meets Objective Hardware Specifications	6	1st QTR FY27

HOW

Projected Business Model: Our business model centers on hardware sales and software licensing revenue. We are developing a hardware prototype to analyze real-time sensor data for our DoD customer. We plan to partner with a larger defense contractor to manufacture these devices or to license our technology to run on our partner's hardware. Our core FPGA technology will also be available as a secure SaaS application with a library of machine learning models for EW/SIGINT, allowing us and our customers to quickly deploy FPGA designs to existing and future products. We anticipate that the SaaS application will lead to significant revenue given the human capital resource savings it will provide. Our augmented reality visualization tools will serve as a foundation for novel EW/SIGINT products for us and our customers.

Company Objectives: Tercero develops edge artificial intelligence software that allows our customers to quickly convert machine learning models into power-efficient hardware designs for FPGAs. This will allow our customers to deploy new FPGA-based designs in a fraction of the time compared to current methods, allowing the DoD to get new capabilities to our armed forces much more quickly. Our 3D augmented reality user interfaces will help our customers improve the ways in which they visualize EW/SIGINT data. While our initial target market is the defense sector, there are many commercial applications that would benefit.

Potential Commercial Applications: Commercial on-road and off-road autonomous vehicles; battery-powered sensor processing systems.

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Engineered Resilient Systems (ERS)

Company	Topic	Project Title	SYSCOM
Modus Operandi, Inc.	N234-P02	LOGEN (Logistics Enhancement with Living Intelligence)	NAVAIR
THOR Solutions, LLC	N211-039	SHARK BAIT - Shared Historical Anti-Submarine-Warfare Reachback Knowledge Built on Artificial Intelligence Technology	NAVSEA

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NAVAIR SPR-2025-0683

Topic # N234-P02
LOGEN (LOGISTICS ENHANCEMENT WITH LIVING INTELLIGENCE)
Modus Operandi, Inc.

WHO

SYSCOM: NAVAIR

Sponsoring Program: NAVAIR

Transition Target: NAVSUP/NAVSEA Logistics Modernization

TPOC: (301) 757-5960

Other Transition Opportunities: USN Fleet Readiness Centers (FRC), NAVSEA ISEA, USMC Logistics Modernization

Notes: LOGEN delivers AI/ML-powered predictive analytics, blockchain-secured logistics data, and edge-ready deployment. Integrates seamlessly with current Navy systems.
AI-enabled predictive analytics
LOGEN leverages machine learning models to forecast logistics demands, equipment failures, and supply shortages before they occur.
Blockchain-backed data integrity
LOGEN uses a permissioned blockchain to create tamper-evident, distributed records. This ensures a resilient, verifiable ledger of logistics actions — even when comms are disrupted or nodes go offline.
Knowledge graphs for semantic understanding
LOGEN doesn't just store data — it understands the relationships between units, supply classes, platforms, threats, and geography.

Logistics Enhancement with Living Intelligence initial architecture

WHAT

Operational Need and Improvement: Navy logistics systems need resilience and predictive capability
Disconnected Data Ecosystem
Multiple logistics and ERP systems (e.g., GCSS-Army, AESIP) don't share data effectively
No unified view of sustainment across echelons
Lack of Predictive Insight
Current tools are reactive, not proactive
Commanders cannot forecast shortfalls, threats, or route risks with confidence
Slow Human-Machine Coordination
Manual reporting and decision-making lag operational tempo
No integration of AI/ML into real-time workflows
No Trusted Record Under Disruption
In contested or degraded networks, data integrity and provenance are compromised
There's no immutable, redundant record for logistics actions
Inaccessible Visualization
Visual tools are either too technical or too shallow
Commanders lack intuitive, layered displays of logistics status and threat overlays

Specifications Required: Blockchain ledger, ML failure prediction, semantic graph, containerized services, role-specific UX.

Technology Developed: AI/ML forecasting, blockchain integrity, ontology-based reasoning, edge containers, real-time dashboards.

Warfighter Value: Risk awareness, degraded comms continuity, reduced latency, auditability. Tamper-Evident Data: Blockchains create an immutable record of every action, decision, and data exchange. This ensures that all intelligence, COAs, and mission logs are secure, auditable, and protected from manipulation—vital in contested environments.

WHEN

Contract Number: N68335-25-C-0236   **Ending on:** Sep 27, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Requirements and UX Finalization	Low	Validated Wireframes	5	4th QTR FY25
Alpha Prototype	Medium	Functional Lab Test	6	1st QTR FY26
Edge Container Testing	Medium	Operates in disconnected mode	6	2nd QTR FY26
Fleet Demo	Medium	Site Demonstration	7	3rd QTR FY26
Transition Package	Low	Partner Transition	8	4th QTR FY26

HOW

Projected Business Model: Modus Operandi plans to commercialize LOGEN through a dual-path model: direct software licensing to government agencies and tiered SaaS offerings for commercial supply chain stakeholders. The solution will be hosted on secure cloud infrastructure with modular, API-accessible components enabling integration with legacy systems. Customization and analytics packages will provide upsell opportunities for both federal and enterprise customers.

Company Objectives: Transition LOGEN to a Program of Record by demonstrating operational impact within NAVAIR logistics and sustainment environments.
Expand across DoD through engagements with other SYSCOMs (e.g., AFLCMC, Army PEO EIS) where logistics modernization is prioritized.
Capture commercial logistics markets through partnerships with Tier 1 defense contractors and large commercial logistics firms seeking predictive maintenance and digital twin capabilities.

Potential Commercial Applications: Global Supply chain for aerospace/maritime, disaster relief, inventory tracking for logistics.
Aerospace & Defense Supply Chains: Integration with OEM logistics and maintenance ecosystems to optimize spares forecasting and depot operations.
Enterprise Resource Planning (ERP): Plug-in modules for platforms like SAP or Oracle to enhance predictive logistics and intelligent reporting.
Fleet & Asset Management: Commercial trucking, shipping, and rail operations seeking improved asset tracking, maintenance cycles, and part failure prediction.
Smart Manufacturing (Industry 4.0): Support for just-in-time logistics, inventory reduction, and responsive supply chain networks via real-time semantic intelligence.

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NAVSEA #2025-046

Topic # N211-039
SHARK BAIT - Shared Historical Anti-Submarine-Warfare Reachback Knowledge Built on Artificial Intelligence Technology
THOR Solutions, LLC

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS X - Integrated Warfare Systems

Transition Target: PEO IWS X, AN Integrated Combat Systems (ICS). Integration into Navy Continuous Integration/Continuous Delivery (CI/CD) pipelines and DevSecOps workflows

TPOC: (540) 653-7932

Other Transition Opportunities: Consolidated Afloat Networks and Enterprise Services (CANES), PMW 160, Naval Operational Architecture (NOA), and other DoD platforms requiring mission-critical resiliency

Image courtesy of THOR Solutions, LLC, 2025.

Notes: Shared Reachback Knowledge Built on Artificial Intelligence Technology (SHARK BAIT) is a secure, system agnostic Artificial Intelligence (AI)-driven Chaos Engineering (CE) assistant that enhances resiliency, uptime, and observability for mission-critical Navy systems. By integrating real-time telemetry and AI diagnostics, SHARK BAIT enables fault injection, intelligent mitigation, and predictive system hardening. The system is Impact Level 5 (IL5)-compliant and modular, supporting Navy deployment at scale while boosting platform readiness and workforce capability.
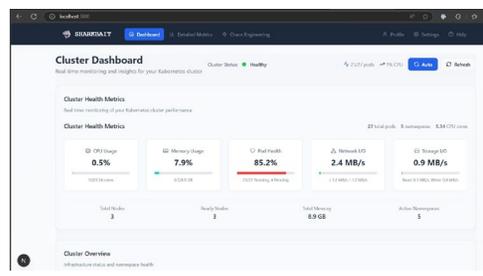
WHAT

Operational Need and Improvement: The Navy needs a new capability to evaluate and speed development of Fleet combat systems software. SHARKBAIT uses a Chaos Engineering (CE) Process to help development teams find software failures modes in prototype applications while under development, automates test events, and can identify potential methods to make software applications and services more resilient. Modern Navy systems require faster, more reliable software rollouts with built-in fault tolerance and reduced manual testing overhead. SHARK BAIT automates CE and provides real-time alerts, mitigation strategies, and summarized action plans. This project will enhance Navy ICS software, focusing on bolstering the resilience of computing infrastructures against escalating threats that undermine mission-critical capabilities.

Specifications Required: • Kubernetes-based environment
• IL5-compliant hosting capability
• Integration with Prometheus, Helm, and Chaos Mesh

Technology Developed: Originating from a successful Phase I feasibility study of an AI/Machine Learning (ML) suite designed for military software applications, Shared Reachback Knowledge Built on Artificial Intelligence Technology – for Chaos Engineering (SHARK BAIT – CE) progresses these developments into Phase II with enhanced user-centered design and innovative CE tools. CE is a methodical approach that employs controlled environments to test system robustness by introducing chaos variables and simulated disruptions to assess and improve system response and adaptability. Phase II prototypes will be developed in the context of the PEO IWS Forge Software Factory ecosystem, employing a strategic implementation that includes comprehensive stakeholder engagement, iterative testing, and strict alignment with Navy protocols.

Warfighter Value: SHARK BAIT – CE increases uptime, prevents mission disruption, and enhances operator trust in system behavior under stress. It reduces the burden on engineering teams while enabling smarter, faster responses to emergent failures. SHARK BAIT – CE is poised to deliver a resilient, adaptable solution that enhances the operational capabilities of the Navy's critical systems, ensuring they withstand and quickly recover from unforeseen disruptions.

WHEN

Contract Number: N00024-24-C-S211   **Ending on:** Sep 23, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Initial SHARK BAIT – CE system design	Low	Systems architecture is fully developed.	3	4th QTR FY24
Development and validation of new chaos scenarios	Low	Initial design and proof of concept is developed within customer's environment.	5	2nd QTR FY25
Stakeholder engagement and training completion	Low	Final revision completed, and stakeholder signed off on completion.	6	4th QTR FY25
Preliminary Design Review (PDR) – ready SHARK BAIT – CE package to include designs, prototypes, and supporting materials for end user adoption (education/training tools, initial explainable dashboards)	Low	Technical Manuals (TM) and supporting materials completed.	7	2nd QTR FY26
If Option exercised, preparation for commercialization and expanded capabilities	Low	Marketing materials and promotional content created.	9	2nd QTR FY27

HOW

Projected Business Model: Software-as-a-Service (SaaS) model supporting on-premise or secure cloud deployment. It offers AI-enabled observability, fault injection, and resiliency analytics as a turnkey solution to platform integrators and mission owners. Revenue will be derived through licensing, integration contracts, and sustainment.

Company Objectives: Use SHARK BAIT – CE as a catalyst to grow into adjacent markets including other DoD and government agencies, enabling proactive system validation and digital hardening at scale. We plan to establish partnerships with defense primes for integration into larger platforms and future modernization initiatives.

Potential Commercial Applications: Broaden use across Navy and Marine Corps systems and expand into other DoD agencies. Long-term commercial vision includes offering SHARK BAIT – CE to major Site Reliability Engineer (SRE)-dependent organizations in the civilian tech and infrastructure space.

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Ground and Sea Platforms

Company	Topic	Project Title	SYSCOM
Arete Associates	N131-055	Airborne Cueing Enhancement (ACE) Update	NAVSEA
PacMar Technologies LLC	N211-032	Extra Large Unmanned Undersea Vehicle (XLUUV) Dock	NAVSEA
Trex Enterprises Corporation	N222-089	CNS for Long Range Unmanned Surface Vessels	MCSC

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NAVSEA #2025-043

Topic # N131-055
ACE Update
Arete Associates

WHO

SYSCOM: NAVSEA

Sponsoring Program: Naval Undersea Warfare Center (NUWC)

Transition Target: US Navy

TPOC: (401) 832-8037

Other Transition Opportunities: NAVAIR, Marine Corps, US Army

Notes: ACE automatically detects, classifies, and tracks airborne threats that an operator would struggle to see. This image shows ACE tracking two targets, each only a handful of pixels, along with their track history.

Image courtesy of Areté

WHAT

Operational Need and Improvement: The United States Navy desires a means to automatically detect aircraft within video imagery in real time and with a very low false alarm rate; Areté's Airborne Cueing Enhancement (ACE) solves that problem. This latest update incorporates state-of-the-art Machine Learning and Deep Learning modules to improve ACE's target detection, false alarm mitigation, and classification suites.

Specifications Required: ACE requires video imagery and associated pointing and timing information. It is capable of daytime operation on video data at 30 frames per second and of tracking targets before they are fully resolved in the imagery

Technology Developed: ACE is an advanced software suite that leverages imagery and meta data (such as timing and pointing information) to detect, track, and classify airborne threats, automatically maintaining situational awareness of the full angle space of the imager.

Warfighter Value: ACE automatically detects, tracks, and characterizes airborne threats, allowing the operator to maintain full situational awareness, perform more high-level information synthesis, and focus on other urgent tasks.

WHEN

Contract Number: N00024-25-C-S000   **Ending on:** Jan 31, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
ACE Integrated	N/A	Validation against real data	8	3rd QTR FY17
ACE detection algorithm update	Low	Validation against real data	5	2nd QTR FY26
ACE tracking algorithm update	Low	Validation against real data	5	2nd QTR FY26
ACE classifier algorithm update	Medium	Validation against real data	5	2nd QTR FY26

HOW

Projected Business Model: Direct transition into existing U.S. Navy systems (both NAVSEA and NAVAIR), systems that are in the developmental stages, as well as into civilian platforms that can benefit from the ACE technology. The Marine Corps and US Army would be included in the target organizations for ACE outside the Navy. Continue to refine ACE technology and other technologies that Areté is currently developing for both military and civilian use.

Company Objectives: Areté is seeking transition partners from both government program offices and industry platform providers to develop ACE towards field deployment and identify specific payloads and CONOPS in which ACE can be used.

Potential Commercial Applications: ACE is designed for compatibility with virtually any Pan-Tilt-Zoom (PTZ) camera system. ACE can provide situational awareness for any application concerned with airborne targets, such as municipal airstrips, commercial airports, or heliports.

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NAVSEA #2025-054

Topic # N211-032
Unmanned Undersea Vehicle (UUV) Dock
PacMar Technologies LLC

WHO

SYSCOM: NAVSEA

Sponsoring Program: PMS-406

Transition Target: Unmanned Undersea Vehicles Squadron (UUVRON), PMS406

Other Transition Opportunities: The UUV Semi-submersible Maintenance Platform (XSeMP) is designed to be modular and can be configured with minimal redesign for other UUVs, small submersibles, and even surface craft.
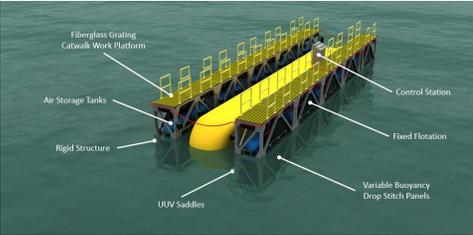
Notes: XSeMP is a modular, lightweight, and rapidly deployable logistics platform designed to support the service, maintenance, and towing of Unmanned Underwater Vehicles (UUVs) by raising the freeboard. Developed by PacMar Technologies, XSeMP integrates inflatable drop-stitch technology with a rigid structural framework to raise the freeboard of the UUV for maintenance without requiring divers or cranes. The system is scalable, enabling adaptation to various vehicle sizes, and can be broken down for transport in standard shipping containers. Factory acceptance testing (FAT) and operational demonstrations will reduce risk. PacMar Technologies seeks defense and industry engagement to expand platform capabilities and explore broader applications for forward-deployed unmanned system logistics.

XSeMP Semi-submersible Maintenance Platform

WHAT

Operational Need and Improvement: Provide in-water maintenance capability for UUVs without the need for divers or cranes with an inflatable cradle system that can lift UUVs for waterborne operations.

Specifications Required: The system must provide adequate structure and variable buoyancy to lift a UUV to a minimum freeboard, be modular and transportable such that it can be shipped and rapidly assembled. During operations, no divers or cranes should be required for basic operation during UUV docking, undocking, and freeboard changes.

Technology Developed: XSeMP is a modular, floating logistics platform for servicing an UUV and can be scaled and adapted to support larger vessels or vehicles. By leveraging our proprietary drop stitch technology, the maintenance platform provides a rapidly deployable means to dock, lift, and service an UUV and can be containerized to transport and deploy around the world.

Warfighter Value: XSeMP provides warfighters a cost-effective capability to perform required maintenance activities for UUVs around the world. Without XSeMP, these required activities could only be performed at limited ports with the correctly sized dry docks or cranes. This accelerates logistics and maintenance and improves safety by eliminating the need for divers to support these operations.

WHEN

Contract Number: N00024-24-C-S191   **Ending on:** Aug 22, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Design Completion	N/A	NSWCCD/Government SME approval of design	3	2nd QTR FY25
XSeMP Assembly	Low	Fully assembled XSEMP at PMT location	4	1st QTR FY26
XSeMP FAT	Low	Successful in-water FAT	5	1st QTR FY26
XSeMP/UUV Integration & Demonstration	Low	Successful integration/demonstration of functionality with UUV	6	1st QTR FY26

HOW

Projected Business Model: The current SBIR Phase II effort will provide a fieldable prototype system that will be demonstrated with a UUV and then provided to the fleet to support ongoing UUV testing activities. PacMar Technologies intends to enter low-rate-initial production (LRIP) to produce additional XSeMPs and will provide operational guidance and lifecycle support to the customer. PacMar Technologies will then work with OEMs and government customers to reconfigure the XSeMP to accommodate their platforms, broadening market adoption.

Company Objectives: Transition this technology to other UUV platforms and other NAVY platforms.

Potential Commercial Applications: Provide mobile dry docking facilities at point-of-need or in developing countries; extend capacities of commercial shipyards; tailored maintenance platforms for OEMs.

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MCSC-PRR-117

Topic # N222-089
CNS for Long Range Unmanned Surface Vessels
Trex Enterprises Corporation

WHO

SYSCOM: MCSC

Sponsoring Program: MCSC

Transition Target: Long Range Unmanned Surface Vessels (MCSC Program of Record)

TPOC: sbir.admin@usmc.mil

Other Transition Opportunities: USMC / DoD Maritime vessels, Maersk

Notes: Image shows a SeaFLIR 280-HPED (SF-280) from Teledyne FLIR, deployed on more than 1,000 ships. It is a high-performance maritime imaging system designed to identify and track vessels at long ranges day and night in all weather conditions, and on the roughest seas. With a software upgrade and minor hardware modification this system can also determine platform position in GPS-denied or degraded environments. Two imaging sensors incorporated in the SF-280, a SWIR sensor and low-light camera, allow imaging of celestial objects including stars and satellites during daytime, at night, and during the so-called "midnight hole", when LEO satellites are not illuminated by the sun.

Low light camera
SWIR sensor

Image courtesy Trex Enterprises

WHAT

Operational Need and Improvement: Since GPS can be degraded, denied, or spoofed, LRUSVs cannot rely solely on GPS for navigation. The size of LRUSVs will not permit the use of a purely Inertial Navigation System (INS) and therefore periodic position updates to the INS from an external system are required. The recently demonstrated Automated Celestial Navigation System (ACNS) is far too large (1 cubic meter) for LRUSVs. A navigation system is required that provides periodic high-accuracy position updates to an onboard INS both day and night, operates without any user input, and is much more compact than the ACNS.

Specifications Required: • Determine position without input from GPS.
• Day and night operation including during the "midnight hole".
• Topside module size: 0.036 m3, or a factor of 28× smaller than ACNS.
• Weight: 55lbs.
• Below-deck processing unit requires 2 computer slots.
• Power: 240W.

Technology Developed: CNS is a high-accuracy automated celestial navigation system, which determines vessel position by imaging stars and satellites and provides periodic position updates to the onboard INS. Gravity vector, or local vertical is not required for position determination. For this reason, CNS position accuracy does not depend on drifts and biases of the onboard INS or Schuller oscillations. Due to the small size and weight, it can be used on small ships and autonomous vessels, including 40-foot boats.

Warfighter Value: • Dual-use system with small form factor: Single sensor system performs two functions: i) detects, identifies, and tracks vessels at long ranges in all weather conditions, and ii) provides accurate position information without input from GPS.
o Does not require additional ship real-estate for installation of two separate systems.
o Has small size, weight, and power (SWaP) characteristics suitable for small-unmanned surface vessels.
• Position accuracy does not depend on drifts and biases of the INS and does not degrade over time.
• Provides position accuracy of 25 m and update rate of once every 5 min for 24/7 operation including the "Midnight hole." Outperforms ACNS during the "Midnight Hole."

WHEN

Contract Number: M67854-24-C-6523   **Ending on:** Jul 19, 2028

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Field Demo for Static Observer	Low	Validation	5	3rd QTR FY26
Dynamic Moving Vehicle Test	Low	Validation	5	3rd QTR FY27
1st On-Boat at-Sea Demo	Medium	Validation	6	4th QTR FY27
2nd On-Boat at-Sea Demo	Low	Validation	6	3rd QTR FY28

HOW

Projected Business Model: Jointly with system integrator Teledyne FLIR, perform direct transition into existing USMC / DoD maritime systems, systems that are in the development stage, as well as civilian platforms that can benefit from CNS technology.

Company Objectives: Develop partnerships for technology demonstration and building customer base within the DoD and DoD funded researchers. Build on these demonstration projects to establish long-term operational uses of the CNS on USMC / DoD vessels. Perform at sea demonstration using USMC / DoD exercises.

Potential Commercial Applications: Maersk and other commercial freight companies.

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Human Systems

Company	Topic	Project Title	SYSCOM
ARiA	N192-094	Interactive Tactical-Oceanography Training for Sonar Operators	NAVSEA

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NAVSEA #2025-035

Topic # N192-094
Interactive Tactical-Oceanography Training for Sonar Operators
ARiA

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS 5.0

Transition Target: Surface Ship Undersea Warfare Combat System Office, AN/SQQ-89 and AN/BQQ-10 Programs of Record (Moodle Learning-Management System component)

Other Transition Opportunities: Other program offices with sonar training programs including the Naval Aviation Training Systems and Ranges Program Office (PMA 205), the Maritime Patrol and Reconnaissance Aircraft (MPRA) Program Office (PMA 290) and the Air Anti-Submarine Warfare (ASW) Systems Program Office (PMA 264).

Notes: Over its fifteen-year history, ARiA has a strong record of transitioning cutting-edge research into solutions that meet urgent government needs though the SBIR/STTR program. Leveraging over $4m of private investment and over $25m in research investment, ARiA has transitioned multiple products through SBIR/STTR funding to DoD PoR. Most recently this has involved transitioning AI/ML software tools to the CDAO JATIC PoR resulting in a return on the SBIR/STTR investment of over 20x.
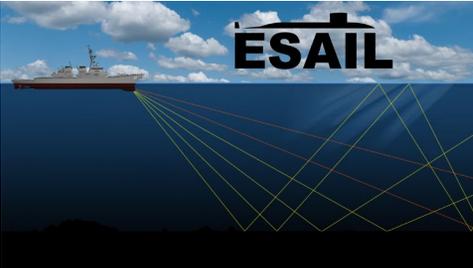
Image courtesy of ARiA 2025

WHAT

Operational Need and Improvement: The ocean environment has a large impact on sonar detection and counter detection, requiring sonar operators to understand and reason about multiple critical factors. ESAIL is a standalone, web-deployed training tool for individual use that simulates the effects of the ocean environment on sonar. The tool provides a higher fidelity training simulation than current training tools and incorporates more variables to better assist operators in learning the multi-factor relationships between the ocean environment and sonar to aid mission planning and tactical decision making.

Specifications Required: Develop a web-based sonar training tool that allows users to interact with the ocean environment and learn how different factors affect sonar performance. Specifically, helping sonar technicians develop the ability to translate information and predictions from tactical decision aids (TDAs) into actionable information that enables them to 1) identify relevant critical factors, 2) accurately plan missions, 3) anticipate how the critical factors will impact the mission over time, and 4) to identify unexpected behavior and investigate the causes.

Technology Developed: ESAIL is designed to provide a series of tailored scenarios, based on simulation of actual locations in the world, for which successful completion of the task (search, avoid detection, track, etc.) requires that the user make use of a particular subset of heuristics/mental models and TDA tools. Using interactive 2D and 3D visualization of the ocean environment and sensor performance, users gain an intuitive understanding of how critical factors influence operation and objectives.

Warfighter Value: ESAIL uses real data and real-world environments to compute, model, and visualize the oceanographic environment and the effects that each factor has on underwater sound propagation to teach tactical oceanography. Through the use of real-world simulated, tailored scenarios, warfighters practice and learn in low risk, high reward settings enabling them to develop the necessary skills to succeed in their missions. Through the use of innovative, engaging, and flexible learning tools warfighters can better translate their learning into mission relevant actions, making Fleet ASW forces more effective and lethal.

WHEN

Contract Number: N00024-25-C-S045   **Ending on:** Feb 10, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Step 1 Readiness Review	N/A	Feedback from working group	3	1st QTR FY26
AxB Step 1 Brief to Sensor Optimization Working Group and Training Working Group (Technology Demonstration to End Users)	Low	Approval from working groups	4	2nd QTR FY26
AxB Step 2 Software Evaluation (Independent Government Evaluation)	Medium	External test and Approval by working group	5	2nd QTR FY27
If Option exercised, AxB Step 2 Software Evaluation of revised product	Low	External test and Approval by working group	5	4th QTR FY27
If Option exercised, Containerized build of ESAIL v1.0	Medium	Delivery and integration with the Moodle LMS	6	2nd QTR FY28

HOW

Projected Business Model: Primary funding comes from government prime contracts—especially with the Department of Defense—with secondary funding from R&D contracts with major firms in sectors like aerospace, oceanography and defense. The software-engineering component commercializes signal-processing, sensor, and training technologies using IP from the R&D work. It focuses on developing middleware and executable libraries for integration into larger systems, funded primarily by public-sector sales and secondarily by private-sector sales. The two components reinforce each other: the software-engineering side seeds new R&D, while the R&D side provides testbeds and prototypes to speed development.

Company Objectives: ARiA has led development of sonar-operator training and sonar signal and information processing for the Navy as well as a number of additional related projects. Building upon exceptional past performance, ARiA is continuing to refine and improve simulation-based training and TDAs through focused research and development in acoustic propagation and coupled target/environment scattering for sonar simulation, and model-based signal processing. Through continued development of ESAIL ARiA will provide the Navy with the best training for sonar operators.

Potential Commercial Applications: Our primary transition and commercialization target is the Moodle LMS component of the AxB tactical systems including AN/BQQ-10 (ARCI) and AN/SQQ-89. Secondary commercialization targets focus on related sonar tactical systems including (1) the Integrated Undersea Surveillance System (IUSS) Integrated Common Processor (ICP) and (2) NAVAIR ASW training systems at the Naval Air Station Jacksonville P-8A Integrated Training Center (ITC). Future commercialization targets include training systems for U.S. based tactical sonar systems deployed by foreign navies such as the Royal Australian Navy, the Royal Canadian Navy, and the Japan Maritime Self-Defense Force (JMSDF).

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Company	Topic	Project Title	SYSCOM
Agnitron Technology Inc.	N201-071	Develop Ultra-Fast Metastable Ion Implant Activation System	ONR
Materials Sciences LLC	N221-049	Radar Absorbing Material Maintainability Improvements	NAVSEA
Design Interactive, Inc.	N221-029	AMMO: Aide for Missile Maintenance Operations	NAVSEA

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ONR Approval #2025-9-22-1476

Topic # N201-071
Develop Ultra-Fast Metastable Ion Implant Activation System
Agnitron Technology Inc.

WHO

SYSCOM: ONR

Sponsoring Program: Office of Naval Research - Naval Air Warfare Center

Transition Target: High Power and High Efficiency Converters for Weapons, Radar, and Propulsion

TPOC: LJ Petersen
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Other Transition Opportunities: Space Applications such as satellite for advance communications

https://www.navair.navy.mil/product/Harpoon

Notes: Traditional in-situ annealing has achieved the minimal standards for use of GaN in real world applications. Our new system will help GaN achieve maximum capability for GaN to be used to it's full potential in high power applications.

WHAT

Operational Need and Improvement: The future of defense relies on the advances of high voltage power electronics. Gallium Nitride (GaN) is a suitable material to make those advancements happen with a Baliga Figure of Merit that is 5 times higher than Silicon Carbide (SiC) and 850 times higher than Silicon (Si). Because GaN is thermodynamically unstable at high temperatures, conventional annealing methods cause sturctural damage to GaN devices. These are significant hurdles that need to be cleared to manufacture high-voltage/high-frequency devices using GaN.

Specifications Required: Annealing to adequately remove implant-induced damage would usually require temperatures ~2/3 of the crystal's melting point, which is ~1400-1500 °C for GaN. But GaN surface decomposes only at a temperature of ~850 °C at atmospheric pressure.

Technology Developed: A Multicycle rapid thermal annealing (MRTA) system with ultrafast sub-second heating and cooling cycle rates (>1000 K/s). The MRTA allows shorter temperature pulses and achieves a higher maximum peak temperature in GaN without decomposing the material. The short cycled multiple heating pulses provide better conditions for diffusional processes in GaN, better restore the device structure damaged by ion implantation, and improve activation of the implanted dopants while also preserving the the GaN surface integrity. The final MRTA system will be capable of delivering <2% temperature uniformity and achieving ~2500 oC steady-state heating on wafers up to 4 inches in diameter.

Warfighter Value: Higher productivity from rail guns, missiles, and AMDR

WHEN

Contract Number: N68335-22-C-0112   **Ending on:** Sep 30, 2025

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Determine Feasible MRTA Process	Low	Simulations in Phase I Established Feasibility	3	2nd QTR FY21
Optimize Heating Mechanism of 4" Wafer	Low	Design Completed	2	1st QTR FY23
Optimize Cooling Mechanism of 4" Wafer	Low	Design Completed	2	3rd QTR FY23
Multicycle Rapid Thermal Annealing System Design	Low	Design Completed	2	2nd QTR FY25
System Assembly	Medium	System Operational	4	1st QTR FY26
Qualify and Test the Multicycle Rapid Thermal Annealing System	Medium	Desired Specs Achieved	8	1st QTR FY26

HOW

Projected Business Model: Once the technology has been demonstrated we have data to show the capability of our tool, we will be marketing our technology through various sources while directly contacting potential clients that could benefit from our technology the most.

Company Objectives: Revolutionize the capability of wide bandgap semiconductive material to advance the applications they are applied to in the market

Potential Commercial Applications: Electric Vehicles, Fast Charging, Data Centers, Renewable Energy, Communications, Lidar

Contact: Nate Broscoff, Director of Finance & Accounting
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NAVSEA #2026-087

Topic # N221-049
Radar Absorbing Material Maintainability Improvements - MSC P4803
MATERIALS SCIENCES LLC

WHO

SYSCOM: NAVSEA

Sponsoring Program: Naval Sea Systems Command

Transition Target: Navy Platforms and Maintenance Contractors

TPOC: (301) 227-1574

Other Transition Opportunities: Secondary applications of the technology may include protective coatings for various structures and components on a variety of DOD and commercial platforms in a marine environment.

Notes: This material can be easily modified to meet specific requirements for a variety of applications. Materials Sciences LLC (MSC) has experience qualifying new materials through extensive mechanical and environmental testing capabilities.

https://www.dvidshub.net/news/79848

WHAT

Operational Need and Improvement: The Navy needs a durable environmental layer to support the installation and maintenance of Radar Absorbing Materials (RAM). While alternative coatings have excellent environmental protective properties, they are difficult to bond to and provide limited impact protection. Poor bond strength can lead to pealing, exposing the underlying vulnerable surfaces to environmental degradation, requiring frequent repairs. These repairs can be very expensive, requiring a high level of technical expertise to execute. The improved RAM protective layer will use an polyurethane which does not carry the same health and environmental risks of alternative protective coatings, while providing better adhesion, more robust impact resistance, and reducing maintenance costs.

Specifications Required: The function of the RAM protective layer is to prevent the underlying material from getting damaged from the external environment, while being radar transparent. The material and associated application process are desired to achieve a 10+ year lifetime while protecting against Ultraviolet (UV) and weather extremes in a marine environment.

Technology Developed: MSC has developed a replacement protective layer that can form a bond to RAM tiles and is capable of meeting Navy requirements. This is a polyurethane coating based on technology used in other low-signature and RF transparent applications that utilizes hollow spherical fillers to further lower the materials dielectric constant. MSC developed a unique Liquid Polyurethane Encapsulation (LPE) process that can inexpensively produce sheets of customized elastomers.

Warfighter Value: MSC's protective layer provides a significantly more robust extended life bonded solution that will reduce maintenance costs, improve repairability, and provide additional impact resistance, all while being a chemically safer material than alternative protective layers that are being phased out due to potential health and environmental risks.

WHEN

Contract Number: N00024-24-C-S201   **Ending on:** Sep 30, 2025

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Fabrication Method and Materials Demonstrated	Low	Samples Available for Testing	3	3rd QTR FY25
Full Scale Performance Testing	Medium	Pass Navy Radar Requirements	4	4th QTR FY25
Environmental Qualification Testing	Medium	Pass Navy Environmental Requirements	5	2nd QTR FY26
Field Installation Test	Low	Bonded onto Navy Assets	6	4th QTR FY26

HOW

Projected Business Model: MSC maintains a growing polyurethane processing capability in an AS9100 certified facility, and currently has the infrastructure in place to meet prototype and production quantities for the Navy. MSC will be the manufacturer and supplier of the protective layer to the Navy and/or the maintenance contractor.

Company Objectives: MSC's objective is to support the warfighter by becoming a supplier of polyurethane coating products for the Navy as well as other DOD and commercial customers, leveraging our unique processing capabilities. MSC seeks to be the go-to developer and producer of innovative protective and abrasion resistant coatings and broaden the use of polyurethane materials.

Potential Commercial Applications: This product has the potential to be used for commercial applications as a UV stable vapor barrier. It could also be used as a replacement for "Forever Chemical" coatings that are being phased out.

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NAVSEA #2025-077

Topic # N221-029
AMMO
Design Interactive, Inc.

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS – Program Executive Office Integrated Warfare Systems

Transition Target: Weapon Fleet Intermediate Maintenance Logistics Facilities

TPOC: (703) 872-3582

Other Transition Opportunities: Program Office, Weapon Fleet Manufacturers

Notes:

AMMO AI/ML Driven Dashboard

WHAT

Operational Need and Improvement: Develop and enhance predictive analytic capabilities by ensuring decisions and recommendations are driven by AI/ML driven data and analytics

Specifications Required: Access to weapon fleet data, government secure cloud service

Technology Developed: Algorithms with improvements and reparameterizations to mathematical optimization and Machine Learning (ML) (regression, classification, and/or natural language processing) techniques optimized for usage on datasets.
Trained ML and optimization models providing dynamic estimates for component failure times and procurement strategies, data-driven predictive maintenance recommendations and optimized maintenance schedules, and decision support for "what if" budgetary constraint or surge scenarios.
Custom dashboard software to be integrated with existing databases with custom designs and visualizations to present results, insights and recommendations to decision makers.

Warfighter Value: Increased weapon fleet readiness and automation of maintenance planning and procedures
Reduced man-hours required to analyze readiness and prioritize subsequent sustainment activities
Decreased life cycle costs

WHEN

Contract Number: N00024-24-C-S029   **Ending on:** Mar 27, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Demonstrate Proof of Concept (Phase I)	Low	Proof of Concept tested with subset data	3	1st QTR FY23
Demonstrate Initial Prototype	Low	Prototype tested with full dataset	4	4th QTR FY25
Demonstrate Updated Prototype	Low	Prototype tested and validated at IMLF with full dataset	5	2nd QTR FY26
Demonstrate Final Prototype	Medium	Prototype tested at Technology Seminal Transition Event (TSTE)	6	2nd QTR FY27

HOW

Projected Business Model: Conceptualize initial transition plan and begin propagating with appropriate vendors; Secured Phase II Letter of Support and partnership for Phase II effort with weapon fleet manufacturer; Leverage mentor/protegee relationship with Intuitive Research and Technology Corporation to transition to US Army Missile System Assessment Program (MSAP)

Company Objectives: To empower people with innovative technology

Potential Commercial Applications: Commercial Aviation Maintenance
Trucking Maintenance

Contact: JoAnn Archer, RDT&E Deputy Director
joann.archer@designinteractive.net   (407) 310-6572

Modeling and Simulation Technology

Company	Topic	Project Title	SYSCOM
Design Interactive, Inc.	N221-029	AMMO: Aide for Missile Maintenance Operations	NAVSEA

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NAVSEA #2025-077

Topic # N221-029
AMMO
Design Interactive, Inc.

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO IWS – Program Executive Office Integrated Warfare Systems

Transition Target: Weapon Fleet Intermediate Maintenance Logistics Facilities

TPOC: (703) 872-3582

Other Transition Opportunities: Program Office, Weapon Fleet Manufacturers

Notes:

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WHEN

Contract Number: N00024-24-C-S029   **Ending on:** Mar 27, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Demonstrate Proof of Concept (Phase I)	Low	Proof of Concept tested with subset data	3	1st QTR FY23
Demonstrate Initial Prototype	Low	Prototype tested with full dataset	4	4th QTR FY25
Demonstrate Updated Prototype	Low	Prototype tested and validated at IMLF with full dataset	5	2nd QTR FY26
Demonstrate Final Prototype	Medium	Prototype tested at Technology Seminal Transition Event (TSTE)	6	2nd QTR FY27

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Company Objectives: To empower people with innovative technology

Potential Commercial Applications: Commercial Aviation Maintenance
Trucking Maintenance

Contact: JoAnn Archer, RDT&E Deputy Director
joann.archer@designinteractive.net   (407) 310-6572

Sensors

Company	Topic	Project Title	SYSCOM
Nu-Trek	N231-027	Low-cost, Low-SWaP, and High-Performance Uncooled Infrared Imager	NAVAIR
Orbital Micro Systems, Inc	N231-066	SPECTral Radiative Transfer Unified Model (SPECTRUM) - Phase II Prototype	ONR

Department of the Navy SBIR/STTR Transition Program
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NAVAIR Public Release SPR-2025-0606

Topic # N231-027
Low-cost, Low-SWaP, and High-Performance Uncooled Infrared Imager
Nu-Trek

WHO

SYSCOM: NAVAIR

Sponsoring Program: Office of the Under Secretary of Defense for Research and Engineering (OUSD R&E)

Transition Target: Nu-Trek is developing "Castanea", an uncooled camera platform with 4X the sensitivity and D* of uncooled thermal sensors presently on the market. Transition targets include: (1) Upgrade to uncooled thermal cameras currently in use, providing 4X the sensitivity as well as larger formats and higher frame rates. Thermal sensitivity will be close to that of cooled LWIR cameras providing high performance at very low SWaP/C. Uncooled sensors are used in surface, air, and sea platforms. Key applications include night vision, situational awareness, target acquisition, unmanned arial systems (UAS), and autonomous platforms, etc.

TPOC: (301) 342-3728

Other Transition Opportunities: Uncooled sensors, such as Castanea, have a broad range of non-military applications, most significantly in thermography, surveillance, photovoltaic system monitoring, and firefighting.

Notes: Fig. (a) Comparison of the Castanea sensor with uncooled and cooled LWIR sensors currently in use. Note the much lower SWaP/C than cooled LWIR sensors and the much better performance than uncooled LWIR sensors; Fig. (b) Class 1-3 UAS are a key target market.

The Castanea focal plane array (FPA), which includes the detector and readout circuits, is fabricated with standard VLSI fabrication processes, avoiding complex bonding and hybridization, which significantly simplifies the fabrication process, improves the yield, and reduces the cost. The Castanea cameras will support zoom, autonomous signal processing, and other features driven by mission requirements.

Features	Castanea, Continuous Bias	Thermal Uncooled, Pulse Bias	Cooled LWIR
Pixel Pitch (µm)	8	12	12
Thermal Sensitivity			
Noise			
Frame Rate			
Format			
Camera SWaP/C			
TRL			

(a)   (b)

Image citation: Table (a), Copyright 2025, Nu-Trek (Derived R&D); Photograph (b), https://www.navy.mil/DesktopModules/ArticleCS/Print.aspx?PortalId=1&ModuleId=724&Article=2159299.

WHAT

Operational Need and Improvement: Microbolometer based uncooled thermal cameras provide IR thermal detection and are in broad use. However, microbolometer performance is limited by low sensitivity, high noise, and slow frame rates (video speed). The Navy's primary goal for this development was to increase the sensitivity by a factor of 4.

Specifications Required: Detector D*: Greater or equal to 1E10 Jones [cm(vHz)/W]
Band: MWIR and/or LWIR
Pixel Pitch: Less or equal to 15 µm
Frame Rate: Greater or equal to 100 Hz
Weight with Lens: Less or equal to 400 g
Volume with Lens: Less or equal to 200 cc
Power: Less than 5 W
The Detector D* of 1E10 Jones [cm(vHz)/W] is a factor of 4 greater sensitivity than the sensitivity of uncooled thermal sensors currently on the market.

Technology Developed: Castanea derives its high sensitivity from its continuous bias architecture, as opposed to the pulsed bias architecture currently in use. Anticipated performance, which exceeds all Navy requirements, is provided below.
Detector D*: 1.4E10 Jones [cm(vHz)/W]
Band: LWIR
Pixel Pitch: 8 µm
Format: 640x480 pixels
Frame Rate: 60 – 240 Hz
Camera Baseline: DRS Tenum640
Weight with Lens: 28 g
Volume with Lens: 30 cc
Power: 1.2 W

Warfighter Value: (1) The 4X sensitivity greatly improved object detection and identification, improving performance across all applications of uncooled sensors; (2) The thermal sensitivity will be close to that of cooled LWIR cameras, making high performance LWIR sensing accessible to low SWaP/C platforms.

WHEN

Contract Number: N68335-24-C-0285   **Ending on:** Dec 01, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Design and layout of the Castanea ROIC completed and ROIC design database submitted to the foundry.	N/A	ROIC design database was vetted and accepted by foundry for fabrication.	3	3rd QTR FY25
Design Verification Testing (DVT) of the Castanea ROIC was completed.	Medium	The Castanea ROIC wafers will be received, ROIC die packaged, and comprehensive tests performed.	4	1st QTR FY26
A 2nd Phase II enables demonstration of the Castanea FPA and a prototype Castanea camera.	Medium	FPAs will be fabricated, DVT performed on packaged FPAs, and a prototype camera will be successfully demonstrated.	5	4th QTR FY26
A Phase III enables integration into a camera and a camera level demonstration	Low	The Castanea FPA will be integrated into a camera and demonstrated in diverse scenery.	8	2nd QTR FY27
A Phase III enables transition into one or more DoD platforms.	Low	The Castanea camera is productized and in use by the military.	9	3rd QTR FY27

HOW

Projected Business Model:
- Multiple sponsors: Nu-Trek has received funding from both the Navy and the Army, providing resources to mature and enhance the technology as well as diverse transition opportunities.
- Teaming: Nu-Trek will team with one or more uncooled sensor supplier to develop the Castanea FPA, camera core, camaras, and payloads, which will be offered by Nu-Trek and our partners.
- ROIC enhancements: In parallel with Navy contract N68335-24-C-0285 to develop the Castanea ROIC, Nu-Trek is reducing SWaP/C on Army contract W51701-25-C-0138, including a large reduction in power consumption. Such enhancements will provide a "product pipeline" with increased performance.
- Customization: Offering ROICs and FPAs with alternative features, adding artificial intelligence (AI) for object detection and classification, and developing payloads provides additional revenue options.

Company Objectives:
(1) Technical objectives: Complete ROIC, FPA, and camera core development, together with partners.
(2) Business objectives: Transition the technology together with partners through licensing and through product development and transition, achieving TRL 9 on a number of products.

Potential Commercial Applications: Key non-military market segments include Thermography, Surveillance, Photovoltaic system monitoring and Firefighting. Nu-Trek is most interested in exploiting the Surveillance market segment as it has similar requirements to the Military.

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Department of the Navy SBIR/STTR Transition Program
DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.
ONR Approval #2025-9-17-1440

Topic # N231-066
SPECTral Radiative Transfer Unified Model (SPECTRUM) - Phase II Prototype
Orbital Micro Systems, Inc

WHO

SYSCOM: ONR

Sponsoring Program: Office of Naval Research

Transition Target: Battlespace Environments programs which need radiative transfer modeling to optimize sensor systems and algorithms for mission tailored remote sensing and forecasting

TPOC: Joshua Cossuth
joshua.h.cossuth.civ@us.navy.mil

Other Transition Opportunities: Commercial remote sensing sensor developers, environmental modeling/algorithm developers, internal R&D tool for passive microwave sensor development
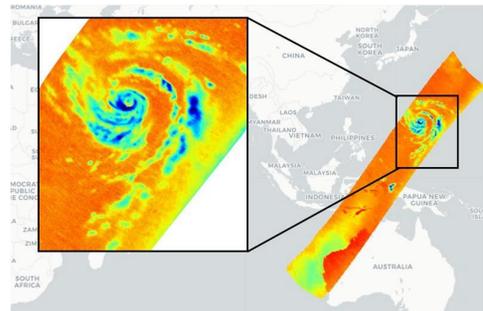
Notes: Radiative transfer modeling and environmental retrieval algorithm software

Weather Stream R&D

WHAT

Operational Need and Improvement: Specifically for sensing of the earth system environment, properties of all the constituents of the land, water, atmosphere, and space environment have unique properties in the EM spectrum. There are currently no consolidated capabilities to interrogate multiple / mixed physical environments and their characteristics toward developing and optimizing remote sensing observation.

Specifications Required: Develop and demonstrate a software system that unifies high resolution radiative transfer modeling from the UV, optical, infrared, microwave, and radio wavelengths with a database of physical earth system radiative spectra properties (including emission, absorption, transmission, reflection, and scattering) to inform a software package that supports purpose-driven remote sensing sensor selection and algorithmic development.

Technology Developed: This SBIR topic aims to provide that holistic capability to understand comparative observing characteristics of environmental signals, focusing on two specific use cases: (1) developing new hardware capability to optimally and generically observe desired environmental features (for example, determining the top three frequencies to maximally differentiate cloud water, snow over land, and glaciated ice); and (2) given legacy algorithms that leverage specific observing frequencies and bandwidths, optimally rederiving
those algorithms using the spectral characteristics of a new set of observing frequencies (e.g., porting products developed from one satellite constellation to another). While radiative transfer technology is relatively mature, much of the focus of this effort will be the identification, compilation, and characterization of the physical spectra database and the software implementation for straightforward
model and simulation for a purpose-driven target enhancement and background minimization.

Warfighter Value: With expanded proliferation of remote sensing tools, especially from satellite orbit, there is a greater variation of wavelengths observed with differing physical signals that result in nonuniform interpretation of phenomena. More broadly, satellite, aircraft, ship-based, and land-based remote sensing all need information on observed physical phenomena to properly calibrate their sensor and develop downstream applications.

WHEN

Contract Number: N68335-25-C-0161   **Ending on:** Feb 01, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Initial Prototype	Low	Run a single RTM through entire workflow	4	4th QTR FY25
Alpha Release	Medium	Alpha Release on schedule	5	2nd QTR FY26
Beta Release	Medium	Beta Release on schedule	6	2nd QTR FY27
Military Release	Medium	Based on success of all previous efforts	8	2nd QTR FY28
Commercial Release	High	Based on success of all previous efforts	9	2nd QTR FY29

HOW

Projected Business Model: Licensed scientific software package, radiative transfer modeling services, support passive microwave mission development

Company Objectives: Commercialization of advanced radiometer technology through sensors, data, and software sales with a focus on commercial weather satellite network

Potential Commercial Applications: development of remote sensing based products/services for a variety of markets including: insurance, natural resources, transportation, supply chain and logistics, financial services, energy, agriculture, and construction

Contact: MIchael Hurowitz, CEO
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Company	Topic	Project Title	SYSCOM
TrustPoint, Inc.	N231-023	Resilient GPS-Independent Navigation for Denied Environments	NAVAIR

Department of the Navy SBIR/STTR Transition Program
DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.
NAVAIR Public Release SPR-2025-0647

Topic # N231-023
Resilient GPS-Independent Navigation for Denied Environments
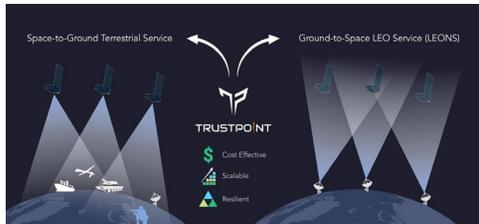TrustPoint, Inc.

WHO

SYSCOM: NAVAIR

Sponsoring Program: NAWCAD/Mission Systems Group: Navigation Systems Branch, Assured-PNT S&T

Transition Target: Platforms with EGI-M

TPOC: (301) 757-6726

Other Transition Opportunities: Other platforms requiring PNT as an enabling capability

TrustPoint APNT Services

Notes: TrustPoint is pioneering a next-generation navigation solution that delivers secure, GPS-independent PNT through a proprietary C-band signal from a commercial LEO satellite constellation. Designed for resilience in GPS-denied and contested environments, our compact APNT receiver integrates seamlessly with platforms designed for navigation systems with EGI-M. TrustPoint's patented signal architecture, spectrum priority, and low-cost LEO deployment model enable faster, more secure alternatives to legacy systems. Phase I validated technical feasibility; Phase II is demonstrating real-world signal acquisition, tracking, and APNT solution generation. With early traction across DoD and commercial sectors, TrustPoint is positioned to augment and harden national navigation capabilities. We are seeking strategic defense partners and equity investors to accelerate deployment and bring this mission-critical capability to the warfighter.

WHAT

Operational Need and Improvement:
TrustPoint provides a secure, GPS-independent PNT solution that interfaces with EGI-M to maintain positioning and timing resilience in GPS-challenged environments.

Specifications Required:
- Sub-meter position accuracy
- Integration with EGI-M INS systems
- Compatibility with mission profiles
- C-Band RF reception from TrustPoint LEO APNT constellation
- Secure time & position authentication (Zero-Trust)

Technology Developed:
- Compact prototype APNT receiver
- Support for secure C-Band TrustPoint signals
- Software-defined radio (SDR) architecture for rapid field updates
- Compatibility layer for system integration

Warfighter Value:
- Maintains mission effectiveness in GPS-contested theaters
- Provides authenticated, resilient positioning & time
- Enhances navigation capability across platforms
- Reduces operational risk in EW environments

WHEN

Contract Number: N68335-25-C-0230   **Ending on:** Mar 01, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
System Requirements Document	Low	Government acceptance	3	3rd QTR FY25
Prototype Benchtop Demonstration	Low	Performance requirements verified	4	1st QTR FY26
(Option) Environmental Qualification	Low	Pass established environmental profiles	6	3rd QTR FY26
(Option) Demonstration at DoD Exercise such as APEX 2026	Medium	Demonstrate utility in operational environment	7	4th QTR FY26
Final Report and Transition Planning	Low	Navy acceptance	7	1st QTR FY26

HOW

Projected Business Model:
Dual-use model leveraging commercial GNSS and secure government-specific services. Subscription-based PNT-as-a-Service model for defense users, with flexible deployment options (e.g., modules, IP core).

Company Objectives:
- Complete APNT receiver prototype and field integration
- Demonstrate secure C-Band PNT from LEO satellite or other relevant platform
- Prepare for Phase III with broader DOD deployment
- Expand APNT service coverage and government adoption

Potential Commercial Applications:
- Maritime navigation in signal-contested environments
- Critical infrastructure timing backup (e.g., finance, telecom)
- Autonomous vehicle navigation support
- Secure PNT for logistics and industrial automation

Contact: Nicole Hilliard, Government Programs Lead
nicole@trustpointgps.com (202) 525-6209

Company	Topic	Project Title	SYSCOM
Global Strategic Solutions LLC	N10A-T009	Dynamic Physical/Data-Driven Models for System-Level Prognostics and Health Management (converting to SBIR)	NAVAIR

Department of the Navy SBIR/STTR Transition Program
DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.
NAVAIR Public Release SPR# 2025-0559. Distribution Statement A - Approved for public release; Distribution is unlimited

Topic # N10A-T009
Dynamic Physical/Data-Driven Models for System-Level Prognostics and Health Management (converting to SBIR)
Global Strategic Solutions LLC

WHO

SYSCOM: NAVAIR

Sponsoring Program: PEO(T) CBM+

Transition Target: This technology is being developed and scaled for utilization by all NAVAIR platforms.

TPOC: michael.a.malesich.civ@us.navy.mil

Other Transition Opportunities: Other transition opportunities include interest from USAF ATE programs. This technology has the potential to integrate with any service that utilizes Automatic Test Equipment within their maintenance process.
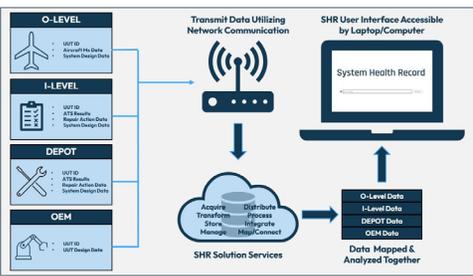
Notes: The diagram above shows the System Health Record process. Unit Under Test (UUT) health state data is collected from all levels of maintenance and consolidated in one accessible repository. The consolidated data is mapped together by part and serial numbers to assess and visualize the right data needed to set the foundation for CBM+ practices. The data is also converted into a common standard format for ease of access by connected systems and applications. In addition to the SHR, during this SBIR effort, GSS partnered with Montana State University to advance their prognostic/diagnostic tool, CHARM. CHARM is designed and developed to utilize Bayesian Networks and Continuous Time Bayesian Networks to integrate diagnostic and prognostic inferences into one toolset.

WHAT

Operational Need and Improvement: The last decade of DoD operations has underscored the importance of having data that is visible, understandable, trusted, and accessible between combat elements and across operational boundaries. Progress is being made to achieve better data specifications, commonality, archiving, and standardization across the Department of Defense (DoD). As CBM+ implementations grow and data sources are integrated using an enterprise-level approach, data standards and common tools to support data-driven system diagnostics and prognostics development will need to be in place.

Specifications Required: - Provide a closer coupling of system health monitoring data across all levels of maintenance through an electronic system for users to view and access.
- Enable greater accessibility of ATS UUT test results and repair data captured at I-level and depots.
- Provide a linkage to exchange data utilizing industry standards (IEEE 1636.1 & IEEE 1636.2).
- Provide an interface to analyze historical health state data to understand and improve test procedures during the maintenance and repair process.
- Enable engineering modeling to improve TPS diagnostics using captured test results and repair data.

Technology Developed: Global Strategic Solutions' (GSS) System Health Record operates within a cloud-based environment. The SHR provides a user-friendly data integration framework for acquiring, processing, integrating, distributing, and managing health state data across multiple systems to get a full "ground truth" picture of the unit under test's (UUT) entire health history. The intent is for the technology to integrate with existing ATS-architectures by leveraging the data connectivity and other network services within the IDE. Montana State University's CHARM technology utilizes a user-friendly interface that provides a standards-based analysis platform for predictive health and integrated reasoning environment. The process incorporates the elements of probabilistic risk analysis as an alternative method for evaluating the effectiveness of the PHM process.

Warfighter Value: -Reduces or eliminates time and costs associated with the "hit or miss" trial and error testing and repair methods and the No-Fault-Found (NFF) incidents.
-Delivers higher rates of operational system availability and significant reductions in aircraft operating and support costs by replacing parts accurately.
-Improves integration potential by utilizing the data sources that already exist.
-Utilizes IEEE standards to ensure the data is available for access and exchange by other system applications and organizations across the DoD.
-Improves TPS procedures and enables replacing parts before failure utilizing predictive health models.

WHEN

Contract Number: N68335-21-C-0591   **Ending on:** Jan 13, 2023

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Technology prototype plan developed	Low	Accurate concept and feasible	2	1st QTR FY23
Initial demonstration of MVP utilizing modified ATS data	Low	Valuable functionality, approval from sponsor and positive feedback	4	1st QTR FY24
Demonstration of MVP utilizing real world ATE test results	Low	MVP accurately displays all results and validates the known testing faults	5	2nd QTR FY24
MVP updated to display multiple part numbers/serial numbers from operational ATE test bench	Medium	SHR can transform, store, and display all results accurately and provide valuable visual analysis functions	6	3rd QTR FY26

HOW

Projected Business Model: GSS is open to pursue business opportunities directly through the government or working with prime integrators. The technology is being developed and scaled for utilization by all NAVAIR platforms. This technology has the potential to integrate with any service that utilizes Automatic Test Equipment within their maintenance process. The foundational elements of storing and analyzing historical test results can enhance maintenance procedures across all services within the DoD.

Company Objectives: GSS continues to strive for increasing the efficiency of system health record practices throughout the Military. In doing so, GSS intends on being a market leader in system health data capturing. The System Health Record application opens a wide range of customers within and outside the DoD that utilize unit test systems and smart health state data analysis.

Potential Commercial Applications: Commercial airframes face the same condition-based maintenance challenges as NAVAIR and the rest of the DoD. This technology focuses on the use of industry standards when developing common data structures to ingest, store, and map aircraft health state data and ATS data. Recognizing, approving, and incorporating those industry standards will increase the commonality across the entire market.

Contact: Charles Godwin,
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Company	Topic	Project Title	SYSCOM
Aerodynamic Technologies, LLC	N20A-T022	Development of High-resolution Global Wall Shear Stress Measurement Technique for use in Hypersonic Flow Studies	ONR
Radiation Monitoring Devices, Inc.	N231-078	Phase Change Material Based Phase Trimming for Integrated Photonics	SSP

Department of the Navy SBIR/STTR Transition Program
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ONR Approval #2025-11-17-1681

Topic # N20A-T022
Development of High-resolution Global Wall Shear Stress Measurement Technique for use in Hypersonic Flow Studies
Aerodynamic Technologies, Inc.

WHO

SYSCOM: ONR

Sponsoring Program: ONR Code 35

Transition Target: Hypersonic Vehicles and Weapons

TPOC: Eric Marineau
eric.c.marineau.civ@us.navy.mil

Other Transition Opportunities: Transition opportunities include: U.S. Navy—Conventional Prompt Strike (CPS); U.S. Army—Long-Range Hypersonic Weapon (LRHW); U.S. Air Force—AGM-183 Air-Launched Rapid Response Weapon (ARRW); DARPA—Tactical Boost Glide (TBG); DARPA—Operational Fires (OpFires); and DARPA—Hypersonic Air-breathing Weapon Concept (HAWC).

Notes: Aerodynamic Technologies has developed a novel approach, ShearCrystal™, that provides a global non-intrusive system for measuring wall shear stress on hypersonic surfaces, for use in large-scale ground test facilities. The technology consists of imaging acquisition system and user-friendly shear stress sensitive film that can be applied onto dedicated test article.

Aerodynamic Technologies was founded in 2020 with strong academic collaboration. In 2021, AT has received its first STTR Phase I contract and Phase II contract in 2022 to present time. Our product development will continue into Phase II Option through 2027.

Air Force image gallery

WHAT

Operational Need and Improvement: This initiative will develop a novel approach for obtaining instantaneous global measurements of shear stress on aerodynamic surfaces. This is critical because shear stress is one of two fundamental forces theoretical and experimental aerodynamicists aim to calculate and measure on all aerodynamic surfaces, the second being static pressure. In order to obtain two-dimensional information using traditional methods, one must use a large number of these point-measurement sensors (i.e. pressure taps) that are individually attached/machined onto the tested surface, a process that can be time consuming and expensive. Ultimately, the number of sensors employed limits the spatial resolution of shear stress data that is obtained from such tests. The approach developed in this project will greatly enhance our ability to measure drag locally, globally and instantaneously, predict its development, study its flow physics, and develop accurate CFD predictive methods for predicting wall shear stress, and use it towards flow control.

Specifications Required: • Provides 2D measurements of the skin-friction distribution (magnitude and direction) on aerodynamic surfaces
• Non-intrusive technique compatible with standard hypersonic wind tunnel test articles such as a sensing coating that can be applied on the model surfaces
• Allows measurement on smooth curved surfaces (such as conical geometries)
• Spatial resolution better than or equal to 5 mm x 5 mm
• Temporal resolution greater than or equal to 1 kHz
• Wide dynamic range and sensitivity to allow simultaneous measurements in regions of high shear (shear-stress magnitude ~ 250 Pa) and regions of separated flows (zero shear-stress or low magnitude with reversed direction)
• Intrinsic insensitivity to spurious inputs such as surface temperature and pressure or accurate correction of spurious inputs via calibration and/or input measurements

Technology Developed: We have demonstrated the ability to provide non-intrusive 2D measurement of the skin-friction distribution up to Mach 5 conditions and surface temperature up to 395K. Optimization of technology to ensure performance at the large ground facility is underway in Phase II.

Warfighter Value: The benefit of our technology is that it will provide a global and non-intrusive method for measuring wall shear stress on hypersonic surfaces. Our technology will help advance critical knowledge of hypersonic flow, thereby allowing for development for high performance hypersonic vehicles and weapons.

WHEN

Contract Number: N68335-22-C-0100   **Ending on:** Mar 22, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Definable event, verifying system component performance	N/A	Pass small hypersonic tunnel test	4	4th QTR FY25
Verifying system performance at large facility	Low	A significant event defined from Phase II Option	5	1st QTR FY26
Optimization of system component	Low	Defined in Phase II Option	6	3rd QTR FY26
Prototype testing	Medium	Pass prototype test	7	4th QTR FY26
Refine system/prototype testing	Medium	Pass final prototype test	7	2nd QTR FY27

HOW

Projected Business Model: Direct sales to Navy/government and expanding later to licensing with primes.

Company Objectives: Aerodynamic Technologies' mission is to create a non-intrusive method for measuring wall shear stress on aerodynamic surfaces. Transitioning the technology is part of AT's growth plan to provide an innovative solution to the market with Navy/government as the first target market customer. Our goal is to grow with new connections and customers and develop new potential applications in other areas, including continuing development with research funding options.

Potential Commercial Applications: There's a growing interest in commercial supersonic vehicles. Our technologies can be tailored for supersonic vehicles to improve their vehicle design development. Boom Supersonic, Northrop Grumman, Boeing, Lockheed Martin and Hermeus Corporation are major players, which customized engineering solution can be provided for measuring wall shear stress for their application specific test.

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1/15/2026

Topic # N231-078
Phase Change Material Based Phase Trimming for Integrated Photonics
Radiation Monitoring Devices, Inc.

WHO

SYSCOM: SSP

Sponsoring Program: Strategic Systems Programs (SSP)

Transition Target: Integrated Photonics-based Navigation and Guidance Systems

TPOC: SSP.SBIR@ssp.navy.mil

Other Transition Opportunities: Advanced photonic integrated circuits (PICs) for optical communications, optical interconnects, and sensing

Notes: Phase trimming is critically important for all integrated photonic components where fabrication-induced phase errors, often exhibiting significant chip-to-chip and run-to-run variance, must be precisely managed. Our Atomic Layer Deposition (ALD) of Phase Change Materials (PCMs) offers a novel, case-by-case solution to correct these errors, enabling high-yield fabrication and unlocking advanced functionality across diverse photonic applications beyond gyroscopes, including optical communications and sensing.

A Trident II D5 missile launch from the USS Nebraska (SSBN 739) highlights the need for reliable, high-precision navigation in strategic systems. (U.S. Navy photo by Ronald Gutridge/Released)

WHAT

Operational Need and Improvement: Strategic navigation systems demand compact, high-precision inertial sensing capable of assured navigation in GPS-denied environments. Our technology addresses this need by enabling advanced integrated photonics to overcome SWaP limitations and overcome fabrication-induced phase errors for superior operational accuracy.

Specifications Required: The system targets <1 dB optical insertion loss and 2 pi optical phase shift, with individual addressability within waveguide arrays of <5 μm center-to-center spacing. Operation is required at visible and near-infrared (700-900 nm) wavelengths, crucial for light-starved applications.

Technology Developed: RMD Inc. developed a novel phase trimming technology utilizing Atomic Layer Deposition (ALD) of Phase Change Materials (PCMs). This enables dynamic, non-volatile (zero-power-hold) phase correction directly on silicon (Si) and silicon-nitride (SiN) Waveguide Optical Gyroscopes (WOGs), ensuring precise and conformal material integration.

Warfighter Value: This capability directly improves performance, leading to dramatically reduced SWaP for guidance systems while enabling assured, precision navigation in GPS-denied environments. It facilitates high-precision inertial capabilities in smaller, more agile defense platforms, ensuring mission success and enhanced operational capabilities for critical applications like missiles, UAVs, and satellites, without reliance on external signals.

WHEN

Contract Number: N64267-25-C-7124   **Ending on:** Aug 24, 2026

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Phase I Completion	N/A	ALD growth of PCMs and reversible phase change demonstrated	3	2nd QTR FY24
Phase II: Test Structure Fabrication & Initial PCM Integration	Low	Optimized PCM films deposited onto test structures and switching validated	4	1st QTR FY26
Phase II: Prototype Characterization & Environmental Testing	Medium	Comprehensive laser-induced phase shifting complete; demonstrate 5 final prototypes	5	2nd QTR FY27

HOW

Projected Business Model: RMD Inc.'s primary business model will focus on technology licensing of our proprietary ALD process for PCM deposition and our phase trimming methodology, particularly to large defense prime contractors and commercial photonics foundries. We will also engage in component sales of integrated photonic devices, specifically phase-trimmed WOGs, to system integrators and defense partners. This hybrid approach leverages our specialized IP while enabling scalable production through established manufacturing channels.

Company Objectives: RMD Inc.'s primary business model will focus on technology licensing of our proprietary ALD process for PCM deposition and our phase trimming methodology, particularly to large defense prime contractors and commercial photonics foundries. We will also engage in component sales of integrated photonic devices, specifically phase-trimmed WOGs, to system integrators and defense partners. This hybrid approach leverages our specialized IP while enabling scalable production through established manufacturing channels.

Potential Commercial Applications: Beyond defense, our technology is directly applicable to next-generation LiDAR systems for autonomous vehicles and drones, enabling more accurate and stable sensing. It also offers significant value in high-precision biomedical imaging and for compact, stable components in data center photonics and advanced optical communication networks.

Contact: Harish Bhandari, Director of Advanced Thin Film Technologies
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