

Topic: N171-071

Beacon Interactive Systems

Plug-and-play Analytical Framework for Distributed Structured and Unstructured Data Sets for Condition Based Maintenance Plus (CBM+) SEAS, a second generation digital platform, extends existing shipboard Energy C2 capabilities into a Plug-n-Play architecture. Using microservices and containerization, SEAS delivers highly targeted apps that leverage disparate data sources and algorithms to improve shipboard Situational Awareness and Decision Support. The initial target transition path to the Fleet is via NAVSEA's GENISYS Program as an enhancement to the Shipboard Energy Assessment System. Of interest to the SHIPS AM Bridge Integration Program Office is the extension of SEAS operational readiness calculations beyond energy algorithms as this directly contributes to an enhanced digitally informed Bridge and Watchstander experience. Beacon, an award winning SBIR Success Story with multiple shipboard deployments of mission critical digital capabilities, is seeking partners interested in expanding these capabilities into new opportunities.

Technology Category Alignment:

Engineered Resilient Systems (ERS)

Ground and Sea Platforms

Energy & Power Technologies

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SYSCOM: NAVSEA

Contract: N68335-20-C-0157

 Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-20-C-0157

 Tech Talk: <https://youtu.be/Pz7jr0j1lgM>

Department of the Navy SBIR/STTR Transition Program

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NAVSEA #2020-0412

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Plug-and-play Analytical Framework for Distributed Structured and Unstructured Data Sets for Condition Based Maintenance Plus (CBM+) Beacon Interactive Systems

WHO

SYSCOM: NAVSEA

Sponsoring Program: PEO SHIPS | SHIPS AM | Bridge Integration

Transition Target: NAVSEA GENISYS Program

TPOC:

Other transition opportunities: The SEAS+ Digital Sustainment Platform provides insight and actionable intelligence for Industrial organizations. Land-based industrial facilities like Shipyards and Maintenance Depots have the same need to know current state and capacity of their equipment, people and operating conditions in order to make informed Repair & Maintenance decisions. Likewise, these same organizations need the comprehensive operating picture across the enterprise to enable informed and relevant make/buy decisions in terms of Operational Reliability, Sustainability & Resiliency.

Notes: Beacon is well known for actively engaging with our customers; learning from them what is needed to digitally transform their operations. User-centered design is at the core of all Beacon development efforts. By decoupling point-of-performance needs of sailors on the deckplate or the CO on the Bridge from traditional stovepiped resourcing, Beacon has repeatedly delivered Mission Critical systems that drive efficiency, increase safety and improve operations. Furthermore, by working alongside our Navy customers with an Agile Development methodology, Beacon has successfully deployed multiple SBIR incubated shipboard digital systems across the Navy. These products include eTagOut, the electronic tag-out system; eLogBook, digital shipboard logs; and SEAS, the Shipboard Energy Assessment System.



DoD OSBP Video: Beacon SBIR Success Story

WHAT

Operational Need and Improvement: In order to make well informed decisions and ensure Operational Readiness, it is critical to maintain visibility across Readiness Assets. Ship operators and maintainers greatly benefit from a system that provides real-time visibility across all existing assets. SEAS+ integrates information, both structured and unstructured data, from across multiple stovepiped systems and people into a single actionable digital platform.

Specifications Required: Conforms to Navy Technology Roadmaps for Microservices & Containerization; Aligns with Active Navy Shipboard Technical Architecture; Leverages Current Bridge System Authority to Operate (ATO) for SEAS; and Directly Supports OPNAV C2C24: Compile to Combat in 24 hours.

Technology Developed: The technology for this topic is a plug-n-play digital architecture consisting of a base technology layer that enables add-on applications to address specific customer needs. SEAS+ is a second generation digital system that extends the existing shipboard Energy C2 capabilities of SEAS into a Plug-n-Play architecture for Shipboard Readiness calculations beyond Operational Energy. Using Industry standard microservices and containerization, SEAS+ enables the delivery of highly targeted apps, both Beacon and third-party apps, that leverage disparate data sources and algorithms to provide an enhanced digitally informed Bridge and Watchstander experience.

Warfighter Value: Actionable Intelligence; Comprehensive Operational Visibility; Streamlined Safe Performance of Maintenance; AI Informed Decision-Support at the Point-of-Performance; Increased Days on Station; Lightened Logistics Load; Continuously Informed Shore-based Sustainment Efforts; Operationally Informed S&T Programs; Improved Mission Readiness & Operational Resiliency

WHEN

Contract Number: N68335-20-C-0157 Ending on: December 3, 2021

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Concept Design	N/A	Design Documentation	TRL 3	May 2020
Architecture Design	Low	Design Documentation	TRL 5	December 2020
Application as a Microservice	Low	Data Flow Successful	TRL 5	February 2021
Final Demonstration	Med	Containerized Apps Using Microservices & Micro Frontends	TRL 6	December 2021
Program Transition	Med	Technology Integration with NAVSEA GENISYS Program	TRL 7	December 2022

HOW

Projected Business Model: The business model for the advancement and transition of this Digital Sustainment Platform is a combination of license and services for both defense and industry application. The platform can be hosted in the Cloud or installed onsite locally. Implementation includes not only the base technology but add-on applications for specific customer needs. As part of the services provided with the platform, Beacon will work with customers to ensure data integrations to existing legacy systems.

Company Objectives: Identify additional partners and customers to both scale the existing offering across defense and industry organizations as well as to identify new opportunities for engagement.

Potential Commercial Applications: This Digital Sustainment Platform has wide applicability in many different commercial applications where data can support Readiness and Decision-making. The technology is an Industrial "App" store with dual-purpose defense and industry applicability. The highly flexible deployment and data integration capabilities of this platform are optimized to benefit organizations with high value assets and mission critical need to consistently and reliably operate. Beyond Navy shipboard use, defense applications include shipyards, maintenance depots and forward operating bases. Private sector applicability includes areas such as aviation, transportation and manufacturing.