

WHO

SYSCOM: ONR

Sponsoring Program: ONR Global

Transition Target: PMS 443 Bridge Integration

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Other Transition Opportunities: Continued use throughout Navy maritime assets as well as with global partners.



US Navy Image

Notes: Operational CBM+ provides the Bridge with AI-driven actionable insight analyzing real-time operating conditions, equipment state, and human actions in real time at the edge. This digital infrastructure becomes the basis for a bridge simulator to demonstrate and test evolving innovative digital capabilities. By leveraging SEAS and eLogBook, Beacon's existing bridge system Programs of Record, as well as by partnering with both ONR Global and UMass Lowell's Applied Research Center, this project efficiently scales the impact for both the US Navy and our global Allies & Partners.

WHAT

Operational Need and Improvement: New approaches are required to sustain ships for their 45-year service lives in a rapidly changing threat environment with an accelerating pace of technological change and data generation. This increase in data represents a challenge and an opportunity. In a novel approach, Operational CBM+ framework combines sensor and physical asset data with human asset condition to derive an actionable insight and inform operational readiness. Additionally, the US Navy is actively investing in ways to increase interoperability and improve collaboration with allies and partners. The shared CBM+ analytics capability gives the US Navy and our Allies a vetted solution that greatly enhances interoperability and promotes mutual trust and reliability in the area of asset readiness and sustainment.

Specifications Required: Collects and analyzes data to predict the remaining useful life of platforms, systems, and components; Leverages ship digital assets from operations and maintenance; Conforms to DoD cybersecurity requirements; Benefits from but does not require connection to sensors; Provides integrated CBM+ data for maintainers, planners and decision-makers to better prioritize and plan maintenance, extend life, and increase availability; EAR99 classified (non-ITAR); Enhances battlegroup awareness and interoperability.

Technology Developed: The Operational CBM+ platform is an advanced data fusion technology that combines sensor data, real-time analytics, and AI algorithms with a modular visual display on the ship bridge. The platform blends physical asset and human asset condition in an integrated picture of operational readiness. It ensures the human actor (CO, XO, sailor, maintainer, planner, decision maker) receives critical insights in the quickest, most suitable, and actionable manner.

Warfighter Value: Improves real-time understanding of equipment failure and its impact on mission success; informs corrective actions by adjusting inputs and outputs based upon sailor capability; and provides a pathway to greater interoperability and interchangeability between Allies and Partners.

WHEN

Contract Number: N64267-24-C-0070 Ending on: Sep 20, 2027

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Needs & Requirements Analysis	Low	A series of requirements and capabilities to be provided	6	3rd QTR FY27
Data Identification & Collection	Medium	Access to relevant real or synthetic equipment data	6	3rd QTR FY27
System Development	Low	Successfully enabled third party integration and data usage	6	3rd QTR FY27
Test, Delivery & Demonstrations	Low	Virtual demonstrations and actionable end user feedback	6	3rd QTR FY27

HOW

Projected Business Model: The digital platform matured by this investment is EAR99 classified and licensable for both defense and industry organizations. Beacon supports deployment, data conversion, training, and ongoing upgrades and maintenance of software. The platform can be hosted in the Cloud or installed onsite locally.

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: Digital condition-based maintenance (CBM+) solution is of significant interest in many markets where equipment maintenance is a crucial component of continuous operations, especially Maritime, Manufacturing, Telecommunications, Transportation, MRO, and Power Generation.