

Navy Deploys Automated Energy Assessment Tools to the Fleet



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WASHINGTON, D.C. – Engineers at the Naval Sea Systems Command have achieved an important milestone with the installation of the Global Energy Information System (GENISYS) suite onboard DDG 51 Arleigh Burke-class guided missile destroyers.

The GENISYS suite includes a Shipboard Energy Assessment System (SEAS) and digital log books (eLogBook) to link fuel consumption, mission, and environmental data to provide operators afloat and ashore an integrated platform from which they can monitor and manage energy consumption across the Fleet.

“One of our main priorities at NAVSEA is digital transformation so that we can provide the best level of support to the Fleet,” said Peter McCauley, NAVSEA technical warrant holder for machinery integration and program manager for fleet energy management. “This initiative is a great example of how we are harnessing feedback from our Fleet commanders, leveraging innovation from the Navy’s Small Business Innovation Research Program, and linking it to other applications such as condition-based maintenance to drive a greater understanding of our onboard equipment to optimize operational excellence.”

The Shipboard Energy Assessment System integrates sensors and

other sources of energy-related data from human and equipment performance trends to produce a real-time operational data model. The model then serves a command and control function as it delivers recommendations to inform operator actions pertaining to energy usage and availability.

The eLogBook provides Sailors with a smart logging capability for the bridge deck log, engineering log, daily fuel and water log to automate data collection directly into the Navy Energy Usage Reporting System. Combined with SEAS, data aggregation and reporting is significantly enhanced providing greater mission presence and awareness, operational decision-making, and more effective prioritization of energy investments.

“We now have the capability to align shipboard energy consumption against mission data at multiple levels, including individual ship, operational commander, homeport, ship class, or by the assigned Fleet,” said Capt. Megan Thomas, Naval Surface Force Atlantic’s force materiel officer.

Following rigorous field-testing earlier this year, both systems are now being installed on DDG 51 class destroyers where they will undergo testing and crew training before becoming operational later this year. Installation of the system onboard San Antonio-class amphibious transport dock ships is planned to commence in 2024.

NAVSEA is the largest of the Navy’s six system commands, responsible for the building, buying, maintaining, and inactivation of ships, submarines and systems for the U.S. Navy. The Naval Systems Engineering and Logistics Directorate (SEA 05) manages the engineering and scientific expertise, knowledge and technical authority necessary to design, build, maintain, repair, modernize, certify and dispose of the Navy’s ships, aircraft carriers, submarines and associated combat and weapons systems.