



TOPIC NUMBER: N07-010

SBIR INVESTMENT: \$1,249,998

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DEPARTMENT OF THE NAVY

# NAVY SBIR/STTR SUCCESS STORY



**DECISION SUPPORT AND OPTIMIZATION SYSTEM MODEL FOR ENERGY CONSUMPTION FOR THE UNITED STATES NAVY'S FLEET FORCES COMMAND (USFF)**

*Operational Energy Monitoring and Management to Improve Mission Readiness*

**Frontier Technology Inc.**

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## THE CHALLENGE

The Fleet is interested in having a link between fuel use and mission and environmental data; the Global Energy Information System (GENISYS) provides the solution. With GENISYS, the user can see the impact of the environment on ship performance, actual energy consumed by the equipment and systems, and the relationships between speed and time at mission-related speeds. GENISYS provides the knowledge required to determine the true benefits associated with a variety of decisions throughout the ship's lifecycle.

## THE TECHNOLOGY

The GENISYS suite collects and consolidates processes and presents energy information that, when combined with environmental and mission data, provides the information necessary for stakeholders to make informed decisions on energy security usage availability and efficiency. GENISYS leveraged the SBIR program to develop sub-systems eLogBook, the Shipboard Energy Assessment System (SEAS), and the Fleet Energy Conservation Dashboard (FECD).

## THE TRANSITION

After rigorous end user testing by a wide variety of interested stakeholders, the GENISYS components were registered as Defense Business Systems in the DoN Application and Database Management System (DADMS). eLogBook and SEAS have been developed by Beacon Interactive Systems as an extension of SBIR investments, Topic N05-160. FECD development has been informed by SBIR investment in Frontier Technology, Inc., Topic N07-010.

## THE NAVAL BENEFIT

GENISYS provides actionable information at the hands of the ship's operational personnel. Additionally, it provides information to the Fleet and Type Commanders informing their plans and policies with regards to ship operations and where we need to do our work to improve efficiency. With a simple user interface, eLogbook allows sailors to see their various maintenance logs with real-time operational data access replacing paper and reducing administrative burdens as well as increasing speed and standardization. SEAS provides an immediate snapshot to allow for logistics and mission planning and operational awareness. Sub-system eLogBook digitizes and integrates various shipboard operational data logs improving data quality, accuracy and accessibility. Sub-system, SEAS, analyzes real-time data to provide actionable user recommendations. Equipment status is provided in an easy to understand format allowing sailors to make decisions based on real-time conditions. Sub-system, FECD, enables ashore stakeholders PKI-enabled web access to a variety of metrics and planning applications focusing on energy security, consumption and efficiency. Stakeholders can view the metrics they need via tailored modules. A powerful data engine provides historical trends and monthly reports to TYCOM, Fleet and OPNAV staffs to support in-depth energy analysis.

## THE FUTURE

eLogBook and SEAS have received Authorizations to Operate (ATOs) and have been deployed for field testing aboard the USS Mason and the USS Truxtun. FECD is preparing to go forward facing in the AWS IL-4 GovCloud.

"THE GENISYS FAMILY OF SYSTEMS PROVIDES CRITICAL NEAR REAL-TIME ENERGY RELATED INFORMATION TO OPERATIONAL FORCES AND NAVY ENGINEERS, WHICH PROVIDES OPPORTUNITY FOR GREATER OPERATIONAL EFFICIENCIES, INCREASED TIME ON STATION, EXTENDED WAR FIGHTER REACH, IMPROVED FUEL FORECASTING AND LOGISTICS, AND OPTIMIZATION OF FUTURE PLATFORM DESIGNS AND UPGRADES."

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