

SUCCESS STORY

TOPIC NUMBER: N05-039

SBIR INVESTMENT: \$999,792

PHASE III FUNDING: \$17,595,871



TECHNOLOGY FOR SHIPBUILDING AFFORDABILITY

Frontier Technology, Inc. (FTI) developed a life cycle management solution (LCMS) tool suite using machine learning to reduce the cost and cycle time to construct, modernize and repair Navy ships.

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THE CHALLENGE

PEO Ships leveraged the National Shipbuilding Research Program (NSRP) to effect change across the non-nuclear surface shipbuilding, modernization and repair enterprise by coordinating with U.S. shipbuilders to adapt and implement commercial best practices. The initial challenge for the U.S. Navy shipbuilding community was to develop and put into action innovative technologies that reduce the cost and cycle time to construct, modernize and repair Navy ships. Affordability is one of the considerations used to determine the best investment to make in technologies to optimize the return on investment (ROI).

THE TECHNOLOGY

Frontier Technology, Inc. (FTI) developed life cycle management solutions (LCMS) by developing machine learning for acquisition and operational decision support. FTI's LCMS tool suite consists of products and services that integrate cost, performance, schedule and risk into one seamless decision space. The LCMS tool suite is applicable to modifications, enhancements, or new systems associated with any Navy ship system and integrated detailed cost models that are accepted standards within the U.S. Navy and DoD.

THE TRANSITION

The technology developed under topic N05-039 has transitioned into several phase III contracts for FTI. A cost-plus-fixed-fee contract through NAVAIR under the same topic is being used for planning and analysis of weapon systems throughout the products' life cycles. This technology is being applied to another phase III contract for airborne systems life cycle planning and analysis through Naval Surface Warfare Center Corona Division.

Additionally, the DoD has awarded FTI an SBIR phase III contract under a combination of SBIR topics, including N05-039. This contract is for a comprehensive suite of computer automated tools and support services to enhance critical decision support processes, such as weapon system acquisition, testing and sustainment throughout the product life cycle.

THE NAVAL BENEFIT

FTI's LCMS tool suite reduces costs, optimizes operations, and accelerates decision processes by enabling the program manager, technologist or system planner to conduct a quick life-cycle cost evaluation while assessing the importance of mission capabilities to surface ships. LCMS supports strategic planning and assessment, including ROI, life cycle cost (LCC), and analysis of alternatives (AoAs).

THE FUTURE

The Navy is using FTI's enterprise product lifecycle management decision environment (ePLM IDE) modeling and simulation tools to determine lifecycle costs and readiness impacts of design and support modification. ePLM IDE is used to maximize weapon system readiness at the lowest lifecycle cost. Moreover, FTI's decision analysis tools support a broad scope of work across the DoD, including the Air Force, Missile Defense Agency (MDA) and U.S. Space Force.