DEPARTMENT OF THE NAVY
SBIR/STTR TRANSITION PROGRAM
SUCCESS STORY

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TOPIC NUMBER: N02-152 | **SBIR INVESTMENT: $1,267,788** | **PHASE III FUNDING: $26,674,151.52**

ENVIRONMENTAL MISSION PLANNER – THE TOTAL SOLUTION

Adaptive Methods, Inc. developed a universal compatibility innovative total system solution for the tactical Antisubmarine Warfare (ASW) environmental mission planner.

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THE CHALLENGE

Antisubmarine warfare (ASW) tactical missions require accurate knowledge of the environment to plan and conduct operations. This is especially true in littoral areas where shallow water depth, the high volume of shipping, and commercial radio frequency interference complicates mission planning and the conduct of Naval operations. The challenge was to design and develop an innovative total system solution for the ASW environmental mission planner that provides universal compatibility with minimal impact on existing and future aircraft and tactical support center-based systems.

THE TECHNOLOGY

Adaptive Methods, Inc. developed The Environmental Planner-The Total Solution software in support of the multi-static active coherent (MAC) system. The MAC system is an active sonar system made up of a source sonobuoy, receiver sonobuoy, and an acoustic processing and aircraft mission computer suite. The Environmental Planner-The Total Solution suite uses available environmental data and threat data. It can provide a deployment strategy for both environmental sensors and tactical sensors by shortening the time necessary to move to a new algorithm or performance enhancement. The technology can search areas where detection performance is inconsistent and seek against threats at unknown depths. The tool offers in-flight use of measured in situ data for patterns re-evaluation, pattern recalculation, and improved operator performance in detection and classification of data. Also, the environmental planner can provide post flight mission reconstruction and data archiving and dissemination. Adaptive Methods developed the environmental planner for the Navy's airborne ASW platforms, including the P-8A, MQ-4C, MH-60R, and MQ-8C.

THE TRANSITION

As a result of the research and development completed under SBIR Phase I and II contracts associated with SBIR Topic N02-152, the Naval Air Warfare Center Aircraft Division (NAWCAD) awarded Adaptive Methods, Inc., a series of three (3) SBIR Phase III contracts to further extend the technology developed. An indefinite delivery indefinite quantity or IDIQ contract with two (2) Task Orders (contracts), a C-Type contract and a basic ordering agreement or BOA, with three (3) Delivery Orders (contracts), were sequentially awarded to Adaptive Methods that focused on the continued development of an innovative universal compatibility total system solution for the tactical ASW mission planner. The effort included systems engineering, modeling and analyses, measurement of target and environmental data, architecture, fabrication, installation, test, maintenance, aircrew training, and procurement. Included was tasking to upgrade the active system performance estimate cost tool, which is part of the environmental mission planning tool suite, was included.

THE NAVAL BENEFIT

The Environmental Mission Planner-The Total Solution provides the ASW fleet with data output that is applicable across all fleet airborne ASW platforms. The environmental mission planner incorporates clutter reduction, especially in littoral areas, and improved communication links. This results in increased target detection opportunities, improved data classification techniques, and reduced operator workload. Additionally, the technology's universal compatibility has minimal impact on existing aircraft and tactical support center-based systems.

THE FUTURE

In 2017, Adaptive Methods was acquired by L3Harris. L3Harris continues to mature ASW technologies developed by Adaptive Methods for the U.S. Navy. These technologies include acoustic processing software, sensor enhancements, visualization framework/decision support equipment, and sensor performance modeling and planning.

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