



SUCCESS STORY

TOPIC NUMBER: N03-074

SBIR INVESTMENT: \$645,537

PHASE III FUNDING: \$52,850,619.33



DEVELOPMENT OF A SUPPORTABILITY PERFORMANCE ASSESSMENT SYSTEM FOR TRAINING SYSTEMS

Advanced Acoustic Concepts successfully met the Chief of Naval Operations' goals to create a performance-based Navy training curriculum, resulting in an increase in collaborative training and training evaluation capabilities.

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THE CHALLENGE

The Navy wanted to improve training systems for Sailors and have the ability to easily implement feedback on the overall curriculum. Using a human performance system model as an approach, the Navy set out to transform its training to become performance-based and allow developers to analyze alternate training approaches to influence both the curriculum and training systems updates. They sought the development of tools that would collect, monitor, and analyze human interaction information from a training or tactical system involving individual or coordinated teams, enabling training developers and instructors to better monitor and assess overall curriculum effectiveness.

THE TECHNOLOGY

Advanced Acoustic Concepts (AAC) leveraged SBIR funding to develop its Supportability Performance Assessment System (SPAS). The project focused on developing tools and processes to noninvasively record and catalog user and system data, providing data playback, which is leveraged for training, assessment and performance support. SPAS captures and catalogues data to support measurement and analysis in addition to proposed metrics for assessment of the target system and operators. SPAS data and tools are also used for mission playback and reconstruction, operator training, performance assessment and support.

THE TRANSITION

AAC was awarded several Phase III contracts related to this SBIR effort, including a \$79 million Phase III contract (N00024-19-C-6311) from the Naval Sea Systems Command, of which \$37,543,461 has been obligated. This project supports the Littoral Combat Ship (LCS) mission module program and includes the build, deliver and install of three mission package computing equipment (MPCE) kits; one mission package portable control station; and one common mission package trainer for use with the LCS mission modules. AAC will also assist the Navy in the development of a new MPCE baseline. This contract procures the hardware and software that comprise the mission package computers, software, and trainers for the Navy's LCS program, including the computing environment

MPCE, hosted software (mission package operating environment), and mission package services.

THE NAVAL BENEFIT

Implementation of the SPAS within a tactical system architecture provides a quantum increase in collaborative training and training evaluation capabilities. The extensible and scalable architecture of SPAS aligns with the AN/SQQ-89(V) Undersea Warfare (USW) combat system as well as combat systems in the future. SPAS metrics expose expected and actual levels of performance, identifying areas that can be addressed with additional training, performance support, process or application improvement. The SPAS technology is an evolution of a combination of existing AAC technologies, including its learning management system (LMS), data driven learning system, and knowledge management system suite. SPAS can record expert users' performance, which can be edited, annotated, and then published. SPAS is not restricted to AAC-produced systems, and therefore has wider applicability where an alternative LMS is already in place.

THE FUTURE

AAC was also awarded a firm-fixed price Phase III contract with NAVAIR (N61340-20-C-0028) worth \$9.5 million. The project provides updates to the common acoustic simulation environment fidelity implementation software and associated hardware for airborne anti-submarine warfare (ASW) training systems. These updates will correct known deficiencies, provide capability upgrades, and resolve obsolescence issues for installation and integration into ASW training systems for the Navy's P-8A Poseidon weapons and tactics trainers, part task trainers and tactical operational flight trainers. These improvements will narrow the gap between physics-based ocean environmental simulation and real world at-sea operations, enabling a marked improvement in trainer fidelity and training effectiveness. There are currently no similar systems on the market and the SPAS has wide applicability within knowledge industries such as credit, banking, financial services, utilities, and insurance. It could also be applied in any work environment involving training effectiveness evaluation, mentoring, and team interaction.