

SUCCESS STORY

TOPIC NUMBER: N00-123

SBIR INVESTMENT: \$669,986

PHASE III FUNDING: \$14,487,700.14



SHIP MISSION READINESS MEASUREMENT SYSTEM

American Systems, Corp. developed a combat systems integrated product to assess and provide feedback on individual and team performances in simulated and operational training environments.

American Systems Corp.

703-968-6300
Chantilly, Virginia 20151

<https://www.americansystems.com/>

THE CHALLENGE

The Navy has taken several initiatives to develop and deploy automated combat training systems aboard ships. These modeling and simulation training systems mimic the ship's combat system elements or the tactical environment in a training mode of the combat system. Current systems collect ground truth data, which is data collected at scale from real world scenarios to train algorithms, and performance data during training events. This data is compiled into after-action debrief products. Specific data collected is typically a function of the training system used to create the synthetic environment. One drawback of these systems is that they collect and process data items that are uncorrelated with overall mission effectiveness. The Navy was searching for a measurement system that could operate independently of the source of synthetic training and could collect and process mission effectiveness data consistently across training events and systems.

THE TECHNOLOGY

The original technology developed under this topic was a Battle Force Tactical Training (BFTT) compatible software design and prototype system that demonstrated an innovative Ship Mission Readiness Measurement System (SMRMS) concept for low-impact, automated shipboard readiness assessment. Using this technology, American Systems Corporation developed a combat systems integrated product to assess performances in simulated and operational training environments, including predicting the ability to perform assigned tasks, functions and missions. This product helps service members perform weapon assessments and predict the system's ability to complete tasks, functions and missions. The system recommends training and resource allocation to improve performance for individuals and teams.

THE TRANSITION

The Phase I, Phase II and initial Phase III awards for the technology developed under this topic were awarded to DDL Omni Engineering.

NAVSEA provided DDL Omni with funds for an initial Phase III development of the technology as the Automated Readiness Measurement System (ARMS) in anti-submarine warfare training architecture. In 2018, American Systems Corporation acquired DDL Omni. In 2022, the Naval Air Warfare Center Aircraft Division (NAWCAD) awarded American Systems an SBIR Phase III contract under this topic to develop a Combat Systems Integrated product to assess operational performance against Navy standards in simulated and operational training environments. NAWCAD also awarded American Systems a modification to this contract to provide all required development testing, integration, delivery, and installation, as well as aircrew training and readiness for the P-8A Increment 3 Block 2 mission software integrated into existing P-8A training systems. This modification includes the Weapons Tactics Trainer, the new Combat Systems Part Task Trainer, and the new Combat System Electronic Classroom for the government of Australia.

THE NAVAL BENEFIT

The products developed under this topic accept input from simulated training or operational systems to automatically provide timely, objective and automated assessment of task performance against Navy standards. By providing accurate detailed assessment data for individuals, teams, organizations or skill sets, training is focused, and readiness-related decision processes are more accurate at all leadership levels.

THE FUTURE

American Systems is providing training system support across the DoD. The company was awarded a contract to provide training systems support to the Marine Air-Ground Task Force (MAGTF), which trains USMC operating forces on command, control, computers, communications, intelligence, surveillance and reconnaissance (C4ISR) missions. American Systems is also supporting simulator-based training for the Air National Guard. In 2023, the Air Force awarded American Systems a contract to produce training systems for aircrews and maintenance teams.