DEPARTMENT OF THE NAVY
SBIR/STTR TRANSITION PROGRAM

SUCCESS STORY

TOPIC NUMBER: OSD10-HS5 | **SBIR INVESTMENT:** $747,283 | **PHASE III FUNDING:** $8,191,695.21

TRAINING SUPPORT SERVICES FOR THE U.S. NAVY

Aptima, Inc. developed virtual reality training systems for the Navy using using the Adaptive Agents for Real-time Data-driven Visualization & Analysis for Relevant Knowledge (AARDVARK) framework.

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THE CHALLENGE

Ready Relevant Learning (RRL) is one of the three pillars of Sailor 2025, a set of over 50 initiatives to offer better talent-matching, career flexibility and modernized and portable training. Traditional training systems are expensive to procure, maintain, and required a lot of space at facilities. Therefore, only a few Sailors could train at a time. Traditional systems needed to be replaced with a system that provides training methods and technology tailored to the unique requirements of each Naval career path. According to Sailor 2025, modern training technology should “provide the right training at the right time in the right way.” Aptima, Inc. developed a virtual training framework and components to support RRL.

THE TECHNOLOGY

Aptima originally developed Adaptive Agents for Real-time Data-driven Visualization & Analysis for Relevant Knowledge (AARDVARK), a visualization framework to support warfighters in planning, execution, assessment, and decision support. This framework facilitates quicker and more precise assessments by improving comprehension of complex relationships, including second and third order effects. The technology promotes better decision making, collaboration, and coordination in complex environments. Additionally, the framework tailors virtual training and simulation to the learner's experience, skills, and ability, and adapts to the learner's performance. Aptima applied learning and feedback frameworks to training systems for the Navy Center for Surface Combat Systems (CSCS).

THE TRANSITION

In Phase II, Aptima utilized its visualization framework to support specific training programs for RRL. Aptima received a Phase III contract from the General Services Administration (GSA) on behalf of CSCS.

The cost-plus fixed fee order dependent contract included several components, such as Navy U.S. Fleet Forces Command (USFF) Shipmate Fleet Requirements, a digital Sidekick for Sonar Watchstander Augmentation, Synthetic Combat Operator Trainer (SCOT) Shipmate Integration, and Aegis Ashore Training Support Services.

THE NAVAL BENEFIT

CSCS has been renamed the Surface Combat Systems Training Command (SCSTC) as part of a larger CSCS realignment that reflects changing factors, such as the rapid pace of upgrades to combat systems and implementation of virtual training technology. SCSTC trains the surface Navy on system and platform specific combat systems through virtual training technologies. The organization has over 6,500 staff and students across 12 locations worldwide. The virtual training technologies are efficient and effective, as they immerse trainees in realistic training environments by virtualizing the physical aspects of equipment and operating systems. The learning systems use the trainees' knowledge, skills, and abilities to deliver an optimal training experience that is personalized to each individual, anytime and anywhere.

THE FUTURE

Aptima has been partnering with DoD offices to transfer technology since 1997. The company creates decision-making and training technologies for the Navy and other DoD components. Together, Aptima and Arizona State University are collaborating with DARPA on Adaptive Distributed Allocation of Probabilistic Tasks (ADAPT). This technology will aid commanders in decision-making by quickly processing data in fast-changing battlespaces and enhancing cooperation between human and artificial intelligence agents. In addition to defense, Aptima's cognitive augmentation technologies (CAT) are employed in intelligence and healthcare.