

# SUCCESS STORY

**TOPIC NUMBER:**  
**N95-053**

**SBIR INVESTMENT:**  
**\$687,300**

**PHASE III FUNDING:**  
**\$3,743,750**



## RAPID PROTOTYPE PORTABLE COMBAT AND LAUNCH SYSTEM

*Systems Engineering Associates Corporation LLC (SEACORP) developed a Portable Weapon Launch System (PWLS) with the ability to quickly prototype applications related to anti-submarine warfare, surveillance and other missions.*

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## THE CHALLENGE

Attack submarine (SSN) platforms and combat control systems must support a variety of missions and ongoing weapon development and evaluation activities. The uniqueness of these multi-mission submarine warfare systems requires that all platforms support all weapons and vehicles, including unmanned underwater vehicles (UUVs), at all times. The Navy requires a small and portable submarine launch system that can launch weapons and vehicles through submarine torpedo tubes. The launch system needs to implement a commercial-off-the-shelf (COTS)-based open system architecture, allowing personnel to customize the launch panel for specific applications in anti-submarine warfare (ASW), surveillance, strike and other missions.

## THE TECHNOLOGY

SEACORP developed and produced a submarine Portable Weapon Launch System (PWLS) using COTS components. The PWLS enables the prototyping of applications for missions such as ASW, strike, and surveillance. The PWLS is designed to integrate with the AN/BYG-1 Combat Control System, supporting a range of payloads. The PWLS also integrates new and modified submarine torpedoes, UUVs, and missiles, including next generation land attack and anti-ship missiles.

## THE TRANSITION

SEACORP was awarded a five-year indefinite-delivery/indefinite-quantity (IDIQ) contract from the Naval Undersea Warfare Center (NUWC) Division Newport. This contract supports continued work under SBIR topic N95-053, "Rapid Prototype Portable Combat and Launch System." Efforts under this contract focus primarily on modifying the submarine combat system for developing payload prototypes.

The work includes architecture development, software integration and testing, and a software capstone demonstration to further develop Payload Control System Technology and Combat Systems Acquisition Prototype Initiative Data Interface software for payload integration. SEACORP will also continue to develop and produce the PWLS using COTS components for submarine-launched weapons and other payloads.

## THE NAVAL BENEFIT

SEACORP's PWLS streamlines the integration process by using a set of common core components. These components and processes enable a relatively seamless integration of diverse payloads with unique interface requirements, enhancing both combat systems and payload integration. SEACORP's PWLS significantly reduces the cost and schedule of payload integration, ensuring that emerging capabilities are delivered to the submarine fleet quicker and at a lower cost compared to legacy systems. Additionally, the PWLS can be easily adapted to support other U.S. Navy submarines as well as those of foreign navies with different payload capacities.

## THE FUTURE

The technologies developed under this SBIR topic will be provided to combat system original equipment manufacturers (OEMs) for use in developing next-generation submarine combat systems. SEACORP has received multiple high-value contract awards from the Naval Sea Systems Command (NAVSEA) and other Navy agencies. These awards often utilize SBIR set-asides to continue research initiated under earlier SBIR phases to enhance submarine interfaces, payloads, human-machine technologies, and testing frameworks such as the Extensible Markup Language Test Data Analysis Tool (XTDAS).