Department of the Navy SBIR/STTR Transition Program

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NAVAIR 2023-0045

Topic # N08-023
Precision High Altitude Sonobuoy Emplacement (PHASE)
SEALANDAIRE TECHNOLOGIES, INC.

WHO

SYSCOM: NAVAIR

Sponsoring Program: Naval Air Warfare Center - Aircraft Division (NAWCAD)

Transition Target: PMA-264 Air ASW Systems Program Office

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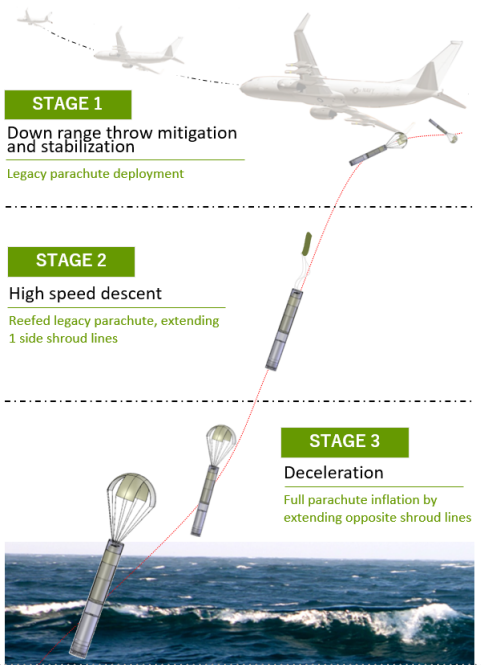
Other Transition Opportunities: Airborne Logistics, Search and Rescue, Humanitarian Assistance, Forestry Firefighter Support, Commercial Drone Deliveries

Notes:



WHAT

Operational Need and Improvement: There is benefit to the Navy by being able to deploy sonobuoys from higher altitudes. The Precision High Altitude Sonobuoy Emplacement (PHASE) system, when integrated into current sonobuoy platforms, significantly improves sonobuoy time-to-splash (TTS) and correspondingly improves placement accuracy when deploying from high altitude, compared to that of existing production sonobuoys.

Specifications Required: Must maintain A-size form factor. Minimal effects to center of gravity. Parachute must continue to meet length and ballistic requirements of Production Sonobuoy Specification (PSS). Minimal cost delta to current production sonobuoy. Currently designed to seamlessly integrate with AN/SSQ-62 and AN/SSQ-53 sonobuoy platforms.

Technology Developed: The key technology presented is a parachute staging system which facilitates safe separation from the aircraft, offers stable high-velocity descent, and achieves appropriate deceleration prior to water impact. A low-cost, stand-alone circuit board is integrated into the system to manage parachute staging. The air descent assembly is designed to match the existing form factor with no impact on current A-size sonobuoy packaging space.

Warfighter Value: Decreases TTS from high altitude. Increases placement accuracy from high altitude. Improves aircraft operational costs and/or loiter time / range via reduced fuel consumption.

WHEN

Contract Number: N68335-22-C-0040 **Ending on:** Mar 13, 2024

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Navy flight testing	Medium	Prove PHASE reliability from aircraft and collect ballistics data to feed TOMS	7	1st QTR FY24
Cost assessment	Low	Prime delivers report detailing expected "should cost" and NRE of PHASE	7	2nd QTR FY24
HERO assessment	High	Qualify PHASE system as "HERO Safe" through testing at Dahlgren	8	2nd QTR FY24
Production Sonobuoy Specification (PSS) Updates	Low	Update PSS to accommodate PHASE-equipped sonobuoys	9	2nd QTR FY24

HOW

Projected Business Model: Sonobuoy applications will be vetted, tested, and approved by NAVAIR and then implemented into a specification for future sonobuoy variant production by manufacturers. Secondary applications must be vetted through the appropriate authorities for adaptation to scalable applications, with requirement establishment, design iteration, testing, approval, and implementation.

Company Objectives: SeaLandAire's objective with PHASE is to transition to the Fleet in the form of a production specification, with all applicable safety, reliability, and cost assessments completed.

Potential Commercial Applications: This system could be applied to any parachute-based, air-deployable system in which time-to-splash and/or placement accuracy is critical. The application could be added to a current system with little to no impact on cost or form factor.

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