

Topic: N141-014

Area I, Inc.

Low Magnetic Signature Expendable Unmanned Aerial Vehicle (UAV) for Anti-Submarine Warfare (ASW)

Our technology is a Tier 1 UAS capable of detecting, locating, and tracking submerged submarines. The UAS is stored within a Sonobuoy Launch Canister (SLC) on a host platform where it ejects, recovers, and flies to areas of interest. Area-I is dedicated to develop technologies that augment aircraft performance through advanced aerodynamic, mechanical, and propulsion system design. Initial targeted platform is the P-8A Poseidon with the ability to integrate on any SLC equipped aircraft. The UAS leverages technologies already proven through flight-testing on the Air-Force ALTIUS Program, and is adaptable to carry other sensors. The Phase II effort concludes with the demonstration of several air-launched prototypes equipped with Magnetic Anomaly Detection (MAD) sensors. The ultimate goal is to transition the technology into a program of record.

Technology Category Alignment:

Fixed Wing Vehicles (includes UAS)

Fixed Wing Vehicles (includes UAS)

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SYSCOM: NAVAIR

Contract: N68335-15-C-0152



Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-15-C-0152

Department of the Navy SBIR/STTR Transition Program

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NAVAIR 2016-747

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WHO

SYSCOM: NAVAIR

Sponsoring Program: PMA 264

Transition Target: HAASW, P-8A Poseidon

TPOC:

(301)342-2552

Other transition opportunities:

Any asset equipped to operate a Sonobuoy Launch Canister (SLC).

Notes: The UAS is adaptable and can integrate other sensors to accommodate customer needs.



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WHAT

Operational Need and Improvement: With the introduction of the P-8A Poseidon into the fleet, the ASW CONOPS is shifting from low altitude search and track as performed with the P-3C to a High Altitude ASW (HAASW) mission where the P-8A remains at altitude for the ASW mission from initial detection through the attack phase. To achieve this goal, there is a need to localize and maintain the track of submerged submarines. The solution is a UAV equipped with a Magnetic Anomaly Detection (MAD) sensor that is designed to be magnetically quiet while still being capable of a sono-launch from high altitude. The platform should recover from this air-launch and transition to level flight to perform the mission.

Specifications Required: Tier 1 UAV (sub 20 lbs) capable of 70 kts air speed for 70 minutes and fully integrate with LAU-126A Sonobuoy Launch Canister (SLC). MAD in-air noise level below 50 pT/rHz in 0.015 to 10 Hz band.

Technology Developed: Area-I has developed a tube stored and launched platform for the Air Force. Using technologies from this platform, we have scaled down the concepts of the platform to fit within the SLC while also minimizing the platform's magnetic signature.

Warfighter Value: Incorporation of Area-I's technology will facilitate the shift from legacy low-altitude ASW to High Altitude ASW (HAASW) operations utilizing the P-8A Poseidon and allow the P-8A to remain at altitude for the ASW mission from initial detection through the attack phase. Area-I's technology would provide the capability to localize and maintain track of a submerged submarine while the mission aircraft prepares to drop a weapon and provide updated targeting information to the weapon as it descends to the splash point.

WHEN

Contract Number: N68335-15-C-0152 **Ending on:** May 31, 2017

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Prototype ground launch platform	Low	Demonstration of MAD sensing capability in flight	6	October 2016
Prototype demonstration in open water	Med	Open water MAD sensing of submarine	6	February 2017
Prototype air launch and recovery to stable flight	High	Successful launch from host and recovery to stable flight	6	May 2017

HOW

Projected Business Model: Area-I may intend to license the technology or manufacture the platform. Area-I with its sub-primes could produce low-rate initial production. A cost vs benefit analysis would determine whether producing or licensing would be best for high-rate volume.

Company Objectives: Area-I is dedicated to the development of technologies that augment aircraft performance through advanced aerodynamic treatments, superior airframe and propulsion system design, and advanced guidance and navigation systems. Area-I is leveraging our unique practices and technologies to become the industry leader in tube-stored and air-launched unmanned vehicles. Meetings with primes, and sub-primes are desirable.

Potential Commercial Applications: Geological surveying, underground pipeline tracking in remote or hazardous areas not readily accessible by ground vehicles.

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