

Department of the Navy SBIR/STTR Transition Program

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.

NAVAIR 2017-734

Topic # N101-014

High Gain Array of Velocity Sensors

SeaLandAire Technologies, Inc.

WHO

SYSCOM: NAVAIR

Sponsoring Program: PMA-264

Transition Target: P-8A Poseidon
& MH-60S SeaHawk ASW mission

TPOC:

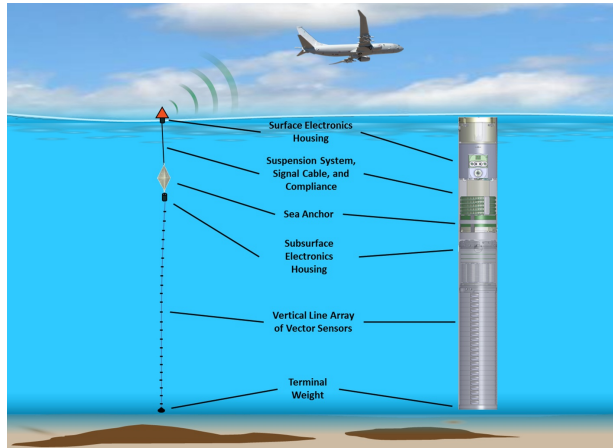
(301)342-6669

Other transition opportunities:

Though the full system developed under this effort is targeted at the transition platforms specified, the miniaturized sensor technology being developed as part of this program has direct applications in several current and planned future sonobuoy developments. It is anticipated that the majority of these efforts will transition through PMA-264, but some potential exists to transition to other sonar-equipped programs.

Other opportunities include: Ocean deployed acoustic measurement & receive sensors requiring low noise & high gain calibrated directional information.

Notes: The DDVLA is designed to be an initial data collection platform but is expected to transition to the fleet as an improved multistatic receive sensor.



Copyright (C) 2017 SeaLandAire Technologies, Inc.

WHAT

Operational Need and Improvement: The Digital DIFAR Vertical Line Array (DDVLA) system is an addition to the growing array of sonobuoys being developed to meet the Navy's needs in low frequency sonar Anti-Submarine Warfare (ASW) missions. The primary advantage realized by DDVLA is an improvement on current detection capabilities in a frequency range compatible with these missions.

Specifications Required: The critical system requirements identified are the particular low frequency band of interest with an approximate 10% bandwidth, a low self-noise level, and the high acoustic gain of the system. The buoy components must be packaged to fit within an A-size standard sonobuoy housing, at a lower cost than more complex array architecture.

Technology Developed: The major technology development for this program is a vertical line array of miniaturized digital DIFAR vector sensors that provide improved detection capabilities in low frequency ranges. An additional advantage of DDVLA's line array approach is that it can be stowed in a smaller space than with other design approaches, allowing it to deploy from an A-size sonobuoy package.

Warfighter Value: The DDVLA sonobuoy technology will benefit the warfighter by providing a significant increase in current detection capabilities in a package smaller than other potential solutions available or in development. This allows it to remain versatile as an interchangeable standardized A-sized sonobuoy for use in a broader multi-mission ASW loadout. DDVLA will also function as a baseline technology platform for data collection supporting further development in similar applications.

WHEN

Contract Number: N68335-17-C-0166 **Ending on:** July 11, 2018

Milestone	Risk Level	Measure of Success	Ending TRL	Date
SCI	Med	Buoy system meets or exceeds threshold performance	6	June 2018
SCI Airdrop Test - Phase 2.5	Med	Buoy system meets or exceeds threshold performance	7	December 2019

HOW

Projected Business Model: SeaLandAire Technologies has the resources in-house for low-rate initial production of sonobuoy systems and is planning to develop the early units of a transitioned DDVLA buoy. We have also been in close partnership with a prime contractor, who has shown interest in this program. The prime contractor has the capabilities to begin full-scale production to meet the Navy's annual needs, and would continue production through a licensing agreement.

Company Objectives: SeaLandAire Technologies specializes in rapid development and fielding of advanced solutions to complex problems, and this program serves to expand the company's technology base, which includes development of sonobuoy systems. The DDVLA technology developed here will advance sonobuoy design approaches other applications, and will showcase SeaLandAire's capabilities in rapid response to operational challenges.

Potential Commercial Applications: Some aspects of the acoustic system are applicable to ocean environmental research, such as tracking of biologicals and coastal monitoring. There are additional potential applications in oil field exploration and seismic research.

Contact: Anthony B. Hays, Project Engineer
ahays@sealandaire.com (517) 784-8340 x.119