Topic: N182-097

TRITON SYSTEMS, INC.

Low-Cost Approach for Improved Performance of the Upper Section of the Directional Frequency Analysis and Recording Sonobuoy
The technology consists of a low-cost approach for improving the performance of the Directional Frequency Analysis and Recording (DIFAR) sonobuoy upper section. Triton Systems Inc. is a global product venturing and investment company creating product-driven enterprises through a proven and proprietary stage-gate “Venture-through-Invention”-process. Initial targeted programs include PMA-264 Air ASW Systems. Sustained competitive advantage is provided as this technology will improve the performance and form factor of the existing DIFAR sonobuoy and potentially lead to a lower manufacturing cost per unit. Phase II prototyping has verified the functionality and innovation of the technology. The ultimate goal is to integrate and transition this technology into government and prime contractor systems. Successful technology development would benefit underwater oil and gas equipment operation monitoring.

Technology Category Alignment:

Sensors
Command, Control, Communications, Computers, & Intelligence (C4I)
Ground and Sea Platforms

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SYSCOM: NAVAIR
Contract: N68335-20-C-0266
Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-20-C-0266

Department of the Navy SBIR/STTR Transition Program

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Low-Cost Approach for Improved Performance of the DIFAR Upper
TRITON SYSTEMS, INC.

WHO

SYSCOM: NAVAIR

Sponsoring Program: PMA-264

Transition Target: Actual transition target expected to be Future Needs Capability sonobuoys. However several current sonobuoy programs could benefit from adaptation of project improvements if integrated into their production schedules.

TPOC:
(301)342-2116

Other transition opportunities: .
Sonobuoys are also employed in commercial and academic enterprises. A good example of this is Marine Mammal monitoring projects, especially in the vicinity of underwater construction. This may represent a growing market share as the offshore wind industry scales up. Environmental Regulatory studies are mandatory for monitoring the effect acoustic noise due to pile drivers, etc. before, during, and after the installation of the wind farms.



WHAT

Operational Need and Improvement: .
1. Miniaturize the Electronic Function Select (EFS) and improve User Interface (UI)
2. Investigate applications of Triton's Security Features for Sonobuoys
3. Develop miniaturized battery using Lithium technology
4. Evaluate additional items that further reduce stack height and improve performance

Specifications Required: .
The majority of the current DIFAR AN/SSG-53G components are based on 1970's (or older) technology. Adding capability to the existing DIFAR sonobuoy is limited due to lack of space available in the sonobuoy. Improved DIFAR sonobuoys would implement existing miniaturized technology, have improved reliability, and leave more space available for improvements in the lower portion (hydrophones and transducers) of the DIFAR sonobuoy.
The proposer should consider novel approaches for improvements and form factor, including height stack and weight as well as cost and performance improvements

Technology Developed: .
1. Redesign of electronic configuration using updated components.
2. Incorporation of a safe Lithium chemistry battery
3. Application of Triton's Security technology
4. Utilization of modern Low Cost/ Highly Dependable Switch technology

Warfighter Value: .
1. Any reduction of required volume in the upper portion of the sonobuoy translates into available space for new components or hardware in future need capability (FNC) buoys, enabling whatever benefit to the Warfighter those yet unspecified technologies will provide.
2. The new User Interface (UI) design provides improved tactile feedback for the Warfighter when programming the mission, eliminating the false-contacts and double contacts experienced with the old system. This also improves the speed and accuracy of the programming operation.
3. The increased energy density of a Lithium battery allows for the longer mission durations and greater current demands anticipated in the FNC buoys.

WHEN

Contract Number: N68335-20-C-0266 **Ending on:** March 6, 2021

Milestone	Risk Level	Measure of Success	Ending TRL	Date
alpha prototype	Med	component level functionality	TRL4	March 2021
prototype fabrication	Med	system level functionality	TRL4	September 2021
(if option exercised) component level testing	Med	prototype component level functionality	TRL5	November 2021
(if option exercised) system level testing	Med	prototype system level functionality	TRL7	March 2022

HOW

Projected Business Model: .
This information is not currently available for public disclosure.

Company Objectives: .
Triton plans to transition the technology in association with the major Primes who manufacture sonobuoys. Currently we have a partnering agreement with Sparton Corporation.
The business environment is in a state of flux due to the DOJ mandate for the dissolution of ERAPSCO, a joint venture between Ultra-USSI and Sparton as sonobuoy manufacturer for the Navy. Beginning in 2024 sonobuoy contracts will be competitively bid among individual companies.

Potential Commercial Applications: .
Sonobuoys are sometimes employed in commercial and academic enterprises. A good example of this is for Marine Mammal monitoring projects, especially in the vicinity of underwater construction. This may represent a growing market share as the offshore wind industry scales up. Environmental Regulatory studies are mandatory for monitoring the effect of pile drivers, etc. before, during, and after the installation of the wind farms.

Geologic Exploration and Academia represent two other potential commercial applications.

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