Department of the Navy SBIR/STTR Transition Program

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ONR Approval #43-4388-18

Topic # N152-110
Dive Helmet Communication System
Triton Systems, Inc.

WHO

SYSCOM: ONR

Sponsoring Program:

Transition Target: SEA 00C3

TPOC:
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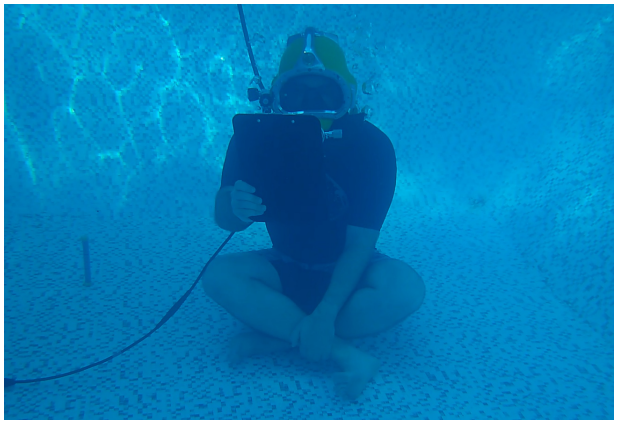
Other transition opportunities: Pilot communication systems, scuba communication systems, special ops



WHAT

Operational Need and Improvement:
Helmeted divers frequently have difficulty communicating among themselves and with the surface due to outdated equipment and background noise. Noise levels inside dive helmets can reach sustained levels over 100 dBA from either regulator operation or due to underwater tools. Currently, divers will often skip-breathe during communications in order to hear the incoming message. Triton's diver communication system dramatically improves communication intelligibility between the surface and the diver.

Specifications Required:
The replacement diver communication system must significantly improve both surface-to-diver and diver-to-surface communications. The system should also reduce noise level exposure to below 85 dBA. The system must address diver utility and not impair the divers ability to equalize pressure in the eardrums. The system must be robust against pressure at a depth of 300 ft of seawater, with stand splash and partial immersion, and survive a drop from 1 m as well as rough treatment by divers (getting stepped on, etc). The system must be positively buoyant. Finally, the system must be compatible with current analog umbilical and forward compatible with future fiber optic umbilical lines.

Technology Developed:
Triton's diver communication system is a drop-in replacement for the current communication system that does not modify the helmet, umbilical, or require additional batteries.

Warfighter Value:
Reducing the noise level exposure to below 85 dBA in the dive helmet will reduce the risk of noise induced hearing loss among Navy divers. Improving the intelligibility of the communication system will increase the efficiency and safety of diver operations.

WHEN

Contract Number: N00014-17-C-7042 **Ending on:** April 30, 2019

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Measure noise reduction in helmet with new comms system	N/A	Measure noise reduction greater than 10 dBA	4	3rd QTR FY18
Underwater intelligibilty test of diver comms systems (legacy and replacement)	N/A	Modified Rhyme Test score improved to 90% or greater	4	3rd QTR FY18
Demo prototype with Navy Divers for feedback	Low	Replacement comm system exceeds diver suitability tests	5	4th QTR FY18
Demonstrate robustness to pressure at depths of 60 fsw in hyperbaric chamber testing	Low	Improved system passes pressure tests in hyperbaric chamber	6	1st QTR FY19

HOW

Projected Business Model:

Triton's goal is to license the IP to a manufacturing partner.

Company Objectives:

Triton's goal for the diver communication system is to secure adoption through SEA 00C3.

Potential Commercial Applications:

Commercial divers

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