

Topic: N171-039

TRITON SYSTEMS, INC.

High Optical Power Hull Penetrator for Submarine Fiber Optic Systems

Triton Systems' High Optical Power Hull Penetrator is a key technology to deliver high optical power to submarine systems. Special fibers are used to mitigate issues seen in attempting to put high electromagnetic energy through fiber in a submarine. The penetrator allows more power to be delivered to a submarine system while decreasing risk to the rest of the submarine architecture by using proven hull penetrators. Triton System Inc. has a wide ranging expertise in underwater vehicle systems engineering and ultimately would like for the technology to be purchased by prime contractors for integration into submarines. As a technology incubator, Triton has helped deliver over \$4 billion in shareholder value.

Technology Category Alignment:

Ground and Sea Platforms

Contact:

Christopher Leman, Jr.

cleman@tritonsys.com

(978) 250-4200

<http://tritonsys.com/>

SYSCOM: NAVSEA

Contract: N68335-19-C-0208

Department of the Navy SBIR/STTR Transition Program

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

NAVSEA #19-640

Topic # N171-039

High Optical Power Hull Penetrator for Submarine Fiber Optic Systems
TRITON SYSTEMS, INC.

WHO

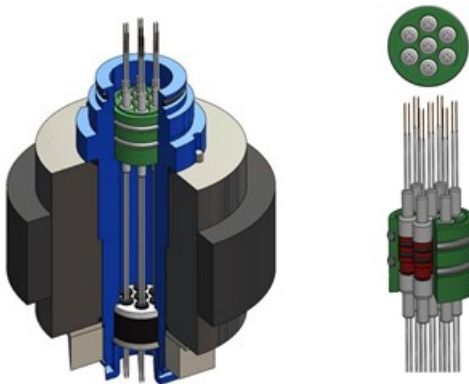
SYSCOM: NAVSEA

Sponsoring Program: SUB 073,
Undersea Technology

Transition Target: U.S. Submarines

TPOC:
(401)832-6887

Other transition opportunities:



Optical Hull Penetrator with Seven Quad Feedthroughs
Copyright 2019, Triton Systems

WHAT

Operational Need and Improvement:

The Navy seeks an innovative solution to integrating high optical power system subcomponents through the submarine pressure hull.

Specifications Required:

Deliver 30 to 100 kW of optical power through the hull.

Technology Developed:

Hull Penetrator for a high optical power fiber optic system.

Warfighter Value:

A high optical power system would greatly enhance a high optical power fiber optic system on a submarine.

WHEN

Contract Number: N68335-19-C-0208 **Ending on:** January 31, 2020

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Requirements Definition	N/A	Requirements developed	2	May 2019
Fiber Design & Modeling	Med	Models indicate requirements will be met	3	October 2019
Design & Fabricate Component Prototype	Low	Delivery of feedthroughs	4	September 2020
Fabricate Assembly Prototype	Med	Delivery of penetrator	5	October 2021
Navy Testing	Med	Threshold of 30 kW optical power reached	6	November 2021

HOW

Projected Business Model:

The Penetrator for High Optical Power would be licensed to component manufacturers.

Company Objectives:

To deliver the component in making High Optical Power for submarines a reality and to enable the technology to take root in the private commercial sector.

Potential Commercial Applications:

Telecommunications, offshore oil & gas exploration, shipping, oceanography, subsea mining, and in other areas where high power optical transmission may be desired.

Contact: Christopher Leman, Jr., Research Development Project Lead
cleman@tritonsys.com 9782504200