

WHO

SYSCOM: NAVAIR

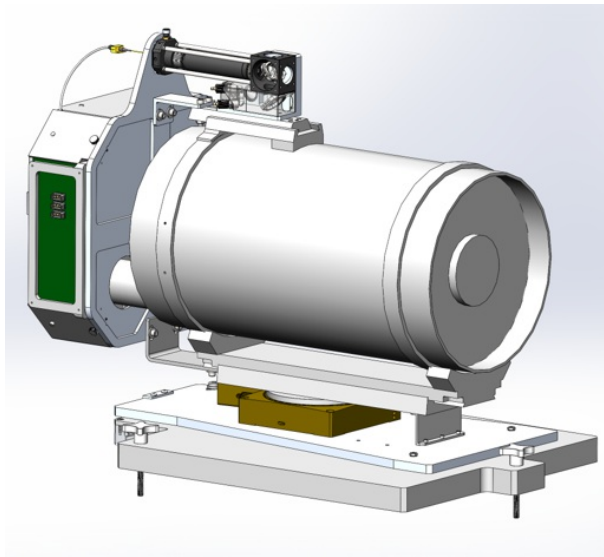
Sponsoring Program: PMA-299

Transition Target: MH-60 Helicopters

TPOC:
(301) 995-7098

Other transition opportunities: In addition to Navy Maritime Helicopters, Maritime Patrol and Reconnaissance Aircraft and U.S. Air Force integration is a possibility.

Notes: Prototype model of TRL6 HawkEye system is pictured at right.



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WHAT

Operational Need and Improvement: The need exists for improved periscope detection and better LIDAR target ID capabilities, to aid existing radar periscope / target detection. Combining data from different spectral bands increases the LIDAR probability of target detection, and reduces the probability of false alarms. A laser periscope detection system is needed that can be used with or without radar queueing, and can be integrated with existing or planned future platforms, for maximizing deployment capability.

Specifications Required: The key threshold performance objectives of the laser periscope detection are: (1) Range 8 – 22 km (post-Phase II); (2) Laser beam quality $M^2 < 2$; (3) Probability of periscope detection > 0.9 ; (4) Probability of False Alarm $1E-6$; (5) Field of Regard 360° , gimbal/pod limited.

Technology Developed: SA Photonics is developing our HawkEye™ LIDAR system to address the need of long stand-off range target detection and identification in maritime conditions. HawkEye utilizes a unique, high power yet eye-safe supercontinuum fiber laser and a multispectral detection system that enables high probability of detection, discrimination from the surface return and the ability to scan a larger region of interest. The HawkEye system is a complete LIDAR detection system with built-in beam direction control, real time data display and standardized gimbal control capabilities. HawkEye will have SWaP versions adjusted to platforms/deployment modalities, such as MH-60 and P8.

Warfighter Value: The HawkEye system will greatly improve the Warfighter ability to detect and identify maritime targets of interest at long range, facilitating defense against submarines and semi-submergibles. This will not only aid ASW missions, but improve overall warfighting / targeting capabilities of the modern fleet.

WHEN

Contract Number: N68335-20-C-0347 **Ending on:** June 16, 2022

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Critical Design Review	Low	Detailed Design Complete	4	December 2020
System Integration & Test	Low	Successful system integration of all subsystems	5	February 2022
Outdoor Test and Characterization of the System Prototype	Med	Successful testing	6	June 2022
Platform Integration / Tests	Med	Successful testing	7	June 2023

HOW

Projected Business Model: SA Photonics intends to undergo production of the HawkEye engineering model, qual and flight units of the post-Phase II payload-integrated prototypes. The company has a history of successful small-scale production for commercialized SBIR products. For larger quantity manufacturing we will work with our contract-manufacturing partner currently used for our commercial FSO system manufacturing.

Company Objectives: SA Photonics' HawkEye system is positioned to be a key enabler of Navy long-range target ID capabilities while providing a cost-saving and performance-improving ASW system to DOD. As a result, we are excited to present the product to a range of program offices at the FST, as well as a number of prime contractors, specifically those who work with MH60 and P8 platform integration.

Potential Commercial Applications: The primary application for HawkEye is with periscope detection on Navy ASW airborne platforms. However there are many secondary markets we plan to pursue, including UAVs, ISR aircraft, Search & Rescue and commercial lidar.