NAVY Transition Assistance Program

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N08-147 - Advanced Optical Systems, Inc.

Advanced LADAR Imagery Augmentation Systems (ALIAS)

NEED & CUSTOMER REQUIREMENT

Need: Sensor to provide the ability to see through brownout conditions generated during helicopter landing.

Value to the Warfighter: By providing helicopter pilots with sufficient visibility in degraded visual environments(DVE), the system enables challenging multi-helicopter missions and saves both lives and helicopters that are lost in DVE.

Operational Gap: More helicopters are lost as a result of brownout than by hostile fire.

Customer Specifications: Sensor must provide output that is useable by the pilot with a latency less than 40ms

Technology Description: The AOS ALIAS project will result in a 3D sensor that can see through visually degraded environments in real time, preventing accidents that occur when pilots lose situational awareness. It will also deliver the ability to detect and avoid small hazards in brownout-obscured landing zone (LZ) through improved spatial resolution. An additional capability of the system is the ability to detect unexpectedly high slopes in the LZ to prevent helicopter roll-over.

SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVAIR

Transition Target: H-53

Original Sponsoring Program:
PMA-209

TPOC Phone Number:
301-757-6703

TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Proof of Concept on Real World Data	3	Low	2x Resolution, 6 dB SNR	Q2 2009
Fully Integrated System	4	Low	<40 mS latency, 30 fps	Q2 2010
Final Laboratory Tests	4	Low	2x Resolution, 6 dB SNR	Q4 2010
Demonstration at Yuma	5	Moderate	Field Object Detection	Q3 2011
Platform Integration	7	Moderate	According to test plan	Q2 2013

Open contract: N68335-08-C-0496 ending Feb 21, 2012

TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications: H-53 Sea Stallion, H-47 Chinook, H-60 Blackhawk and almost any transport helicopter operating in dusty or snowy conditions.

Business Model: Benefits demonstrated to program offices through partnerships with established test vehicles. Transition, however, will occur through upward integration into prime helicopter suppliers. Results of demonstration, and "pull" pressure from program office will induce primes to design in our technology.

Objective: We are interested in opportunities to test our operational prototype in representative environments such as Yuma Proving Ground or other real world dust environments. Also AOS, Inc. would like to partner with a prime or government agency to develop interfaces to fielded avionics architectures.

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