

NAVY Transition Assistance Program

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N07-043 - Chesapeake Technology International Corporation

Tactile Situational Awareness System (TSAS)

NEED & CUSTOMER REQUIREMENT

Need: Provide a helicopter (or fixed wing) pilot with a tactile (touch feeling) situational awareness (SA) system during periods of high mission tasking (landing or hovering) and low visibility (night, poor weather, brown-out due to debris blow-up).

Value to the Warfighter: TSAS will provide the pilot with a tactile SA system that will indicate to the pilot when he/she is entering into a potentially dangerous hover or up-and-away situation.

Operational Gap: Currently does not exist

Customer Specifications: Demonstrate the integration of a common modern processor with current aircraft embedded rate sensors or accelerometers. Overcome damping after loading by the skin and flight equipment resulting in a reduction in stimulation amplitude. A smaller tactor is required that is lighter, and capable of producing a stronger vibratory stimulus with amplitude control across a wide frequency range (10-350Hz) and enable a lower profile integration to pilot clothing.

Technology Description: TSAS is a real-time embedded firmware application which continuously monitors aircraft location, velocities, accelerations, and performs complex algorithm calculations that generate situational cues that become tactor activations on the vest.

SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVAIR

Transition Target: PMA-276
AH-1W/UH-1N Helicopters, PMA-275 V-22

Original Sponsoring Program:
AH-1W/UH-1N Helicopters

TPOC Phone Number:
(301) 757-5521



TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
integrate processor with current aircraft sensors, and embedded rate sensors or accelerometers	6	Low	Achieved flight test objectives	7/20/2009
Test fly TDP and TDS on a commercial rotary wing platform	6	Low	Achieved flight test objectives	7/20/2009
Develop and integrate TSAS into Manned Flight Simulator	7	Low	NAVAIR approved test plan/operational pilots' testing in brownout conditions in simulator	3/2010
Operational testing in Manned Flight Simulator	7	Moderate	Subject to Availability of Funds, operational pilots will provide physiological results of tactile success using TSAS in simulators	3/2010

Open contract: N68335-09-C-0025 ending 10/30/2009

TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:

Commercial and general aviation helicopters and fixed wing aircraft, Digital Terrain Elevation Data, Ground Imaging Sensors, Environmental Sensors, Threat Warning Systems and Operational Scenario Tactile Displays

Business Model:

CTI will manufacture, assemble and sell the TSAS.

Objective:

CTI seeks Prime airframers who would include the TSAS as a must have safety system for their manufactured aircraft.

Company: Chesapeake Technology International

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