

NAVY Transition Assistance Program

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NEED & CUSTOMER REQUIREMENT

Need: This product addresses the need for alternative communication methods for use in scenarios where visual and/or verbal communication is not possible or desirable. It also addresses the need for unobtrusive and intuitive means for communicating with team members and controlling unmanned assets.

Value to the Warfighter: Embedded recognition and communication of hand signals to all team members enables entire teams to receive orders and information simultaneously regardless of line of sight limitations. Transmitted postural, movement and haptic communications allow unit commanders to obtain real time information facilitating coordinated efforts. Enemy force location, casualty location and mission progress can accurately be derived from this information.

Operational Gap: Current radio communications are transmitted and received on a single channel. Thus, highest priority information is transmitted at the expense all other high priority information. Blue Force tracking systems currently present information via visual display, and only location information is provided.

Customer Specifications: Important performance criteria include accurate and reliable recognition of location, activity, and hand-and-arm gestures; reliable communication of pertinent information; and an intuitive means for displaying relevant information within an operational environment. Additionally, end users find weight, complexity of the equipment, and power requirements to be critical.

Technology Description: The HACS consists of a Team Status and Signaling System (TS3) and a haptic feedback vest. The TS3 uses torso-located dead reckoning sensor module and an instrumented glove allowing for the for real-time capture of individual location and activity information. Static and dynamic communication of hand gestures are translated into a haptic language and communicated via stimulation of the factors in the haptic feedback vest. Simultaneous communication and and situational status is possible within unit and between the unit and command.

TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Develop and Validate Core TS3 Components	3	Low	Successful Lab-based testing of system components	Dec 31, 2008
Option 1: Extended Development of TS3 and STRAP	4	Low	Successful Lab-based testing of system components	March 31, 2009
Integration of TS3 and STRAP into a HACS Prototype and Lab-Based Testing/Validation	4	Low	Lab-based testing and validation of the integrated system and feedback from potential end users	Sept 30, 2009
Option 2: Integration of HACS components with Field Gear and Development of Additional Prototypes to Enable Squad-Level Testing	5	Moderate	Lab-based testing of integrated system components and feedback from potential end users	March 30, 2010
Field Effectiveness Testing of Integrated System with Potential End Users	6	Moderate	Successful Field-based testing and feedback from potential end users	July 30, 2010

Open contract: N00014-08-C-0502 ending July 30, 2010

N06-149 - AnthroTronix, Inc.

Haptic Automated Communication System (HACS)

SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: ONR - SBIR

Transition Target: Program Manager Marine Expeditionary Rifle Squad (PM-MERS)

Original Sponsoring Program: Office of Naval Research

TPOC Phone Number: 703-696-0364



TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:

Federal, State and local law enforcement teams, as well as first responders such as fire fighters and emergency rescue personal would benefit from this team communication and situational awareness technology. Additional applications for components of the HACS system include robotic control applications and the gaming industry.

Business Model:

AnthroTronix Inc (ATinc) expects to sell HACS to the U.S. Government through either direct contract with the Department of Defense (i.e., Marine Corps, Army customers), the Department of Homeland Security, and/or through selected licensed resellers. Additionally, ATinc plans to sell a commercial product based on this technology to local fire and rescue personnel, police, and other agents, through selected licensed resellers and/or marketing partners.

Objective:

The objective of Phase III efforts is to conduct iterative development, integration with existing field equipment, and operational testing to bring the HACS technology components and system to a transition-ready TRL and to transition the technology to the Marine Corps.

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