Department of the Navy SBIR/STTR Transition Program

Topic # N142-124
INTERACTIVE NEXT-GENERATION TESTBED ENVIRONMENT FOR RETENTION AND ASSESSMENT OF COMPUTER-BASED TRAINING (INTERACT)
AnthroTronix, Inc.

WHO

SYSCOM: ONR

Sponsoring Program:

Transition Target: Littoral Combat Ship (LCS) Engineering Plant Technician (EPT) Immersive Virtual Ship Environment (IVSE) Courseware

TPOC:
Dr. Ray Perez
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Other transition opportunities: Submarine Learning Center's Valve Maintenance Courseware

http://www.navy.mil/management/photodb/photos/130625 N-JN664-018.jpg

WHAT

Operational Need and Improvement: • Significantly decrease Train-to-Qualify and Train-to-Certify times for naval engineering maintenance skills by improving the fidelity and interactivity of simulation-based training environments of the LCS EPT IVSE.
• Optimize the training experience for acquisition and sustainment of naval engineering maintenance skills
• Provide greater focus on specific training areas through greater task-relevant fidelity

Specifications Required: • Develop INTERACT, multi-modal interface system consisting of gesture recognition glove with haptic and thermal feedback, and scent collar providing olfactory feedback
• Demonstrate the technical feasibility of integrating INTERACT with the LCS EPT IVSE Courseware
• Develop scientifically grounded instructional strategies that incorporate INTERACT

Technology Developed: • INTERACT: Wearable advanced multi-modal interface system consisting of:
  o NuGlove gesture recognition system with haptic and thermal feedback
  o Scent collar providing olfactory feedback
  o API (Application Programming Interface) to facilitate integration with 3rd party software
• Create objective metrics to accurately assess training effectiveness and skill acquisition, transfer, and retention across psychomotor, perceptual, and cognitive skills relevant to the targeted operational environment

Warfighter Value: • Reduce the Time-to-Qualify and Time-to-Certify for LCS Engineering Plant Technicians by providing more immersive training through increasing task-relevant fidelity.
• Provide more engaging training through multi-sensory interactions within the virtual training environment.

WHEN

Contract Number: N68335-16-C-0064 **Ending on:** February 28, 2018

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Proof-of-Concept integration with Lockheed Martin LCS Mission Bay Simulation Environment	N/A	Successful demonstration to TPOC	TRL-4	February 2016
Development of prototype instrumented glove and scent collar	Low	Successful demonstration to TPOC	TRL-5	August 2016
Proof-of-Concept integration with the LCS Engineering Plant Technician Integrated Virtual Ship Environment Coursware, developed by Cubic	Low	Successful demonstration to TPOC and SWOS	TRL-5	September 2016
Report summarizing user evaluation assessments with subject matter experts (SMEs)	Low	Submit report to TPOC	TRL-5	March 2017

HOW

Projected Business Model: AnthroTronix, in conjunction with its ONR sponsor and key stakeholders at SWOS and SLC, will identify additional programs of record where INTERACT will reduce Time-to-Qualify and Time-to-Certify. In addition, through its existing contacts and by attending relevant industry conferences, AnthroTronix will work with Defense prime contractors to select potential transition opportunities.

Company Objectives: AnthroTronix focuses on working with the Department of Defense to develop innovative technologies in the areas of simulation and training, advanced human-machine interfaces, neuroscience, and applied physiological monitoring.

Potential Commercial Applications: AnthroTronix is actively pursuing customers in the commercial aviation and Industrial maintenance training markets.

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