Topic: N142-124

AnthroTronix, Inc.

INTERACTIVE NEXT-GENERATION TESTBED ENVIRONMENT FOR RETENTION AND ASSESSMENT OF COMPUTER-BASED TRAINING (INTERACT)

AnthroTronix is a leader in the development of neuroscience, simulation and training, applied physiological monitoring and human-machine interaction technologies. AnthroTronix's INTERACT technology improves the fidelity and interactivity of simulation-based training environments using an instrumented glove to provide gesture recognition and haptic and thermal feedback. A wearable delivery device provides olfactory (scent) feedback. Proof of Concept Integration with Cubic's Immersive Mission Bay Trainer for the LCS Engineering Plant Technician (EPT) is expected to demonstrate INTERACT's ability to significantly decrease Train-to Qualify and Train-to-Certify times. It's anticipated that integration of INTERACT with Valve Maintenance courseware at the Submarine Learning Center would result in similar improvements. AnthroTronix's goal is to transition INTERACT to programs of record to optimize training for acquisition and sustainment of naval engineering maintenance skills.

Technology Category Alignment:

Personalized Assessment, Education, and Training

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SYSCOM: ONR
Contract: N68335-16-C-0064

Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-16-C-0064

Department of the Navy SBIR/STTR Transition Program

STATEMENT A. Approved for public release; distribution is unlimited.
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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/130625N-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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