

Topic: N142-124

Creative Technologies Inc.

Next-Generation of Maintenance Skills Training System

The Next Generation of Maintenance Trainer (NGMT) from CTI, a Los Angeles-based woman-owned small business, is an immersive, virtual trainer with an intelligent tutoring system (ITS) utilizing machine learning/inferential mathematics for improved accuracy, speed, and precision skill acquisition/decay prediction. Our character-based approach ensures student engagement promises to increase retention. The self-paced, desktop trainer for Center for Surface Combat Systems (CSCS) Detachment West (aka “the gun school”) is intended to mitigate a classroom bottleneck challenge. CTI’s proprietary ITS is a critical component, enabling a highly customized, dynamic student experience to maximize training value. We are seeking transition to the CSCS program of record so we may license the application in quantity and, ultimately, extend the product to include other USN customers with varying maintenance training needs.

Technology Category Alignment:

None

None

None

Contact:

Lisa Jenkins

lisa.jenkins@cretecinc.com

(323) 316-4580

<http://www.cretecinc.com>

SYSCOM: ONR

Contract: N68335-16-C-0116

This company is not exhibiting at or presenting during the FST. They are not available for 1-on-1 meetings. Please refer to their contact information above.

Department of the Navy SBIR/STTR Transition Program

STATEMENT A. Approved for public release; distribution is unlimited.

ONR Approval # 43-2203-16

Topic # N142-124

Next-Generation of Maintenance Skills Training System

Creative Technologies, Inc.

WHO

SYSCOM: ONR

Sponsoring Program: PMS-339 - Schoolhouse Training Systems

Transition Target: Center for Surface Combat Systems Detachment West (aka

TPOC:

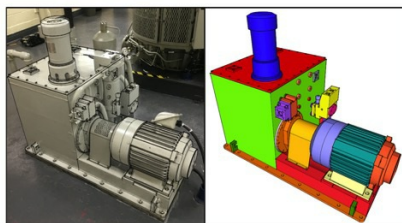
Dr. Ray Perez

ray.perez@navy.mil

Other transition opportunities: We are seeking transition to the CSCS program of record so we may license the application in quantity and, ultimately, extend the product's customer base to include other military customers with varying maintenance training needs including PEO STRI, NAWCTSD Fort Benning, and other maintenance training facilities including field and shipboard operations.



Virtual environment trainer character, Gunners' Mate aka "Guns"



Virtual geometry for the mixed reality psychomotor task demo

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WHAT

Operational Need and Improvement: Center for Surface Combat Systems (CSCS) Detachment West (aka "the gun school") has a classroom bottleneck challenge. With less time in the training program, there is the risk of sending Gunners' Mates to the fleet with inadequate preparation. The NGMT will mitigate the bottleneck by providing training currently requiring time with the gun mount: a limited resource.

Specifications Required: Provide Navy maintenance trainers with initial and refresher training protocols, assessment tools, and a model of skill acquisition and decay that can be used to predict and prevent deterioration of maintenance skills and knowledge.

Technology Developed: Our technical approach, focused on a personalized, highly-engaging user experience, will mitigate classroom bottlenecks caused by limited facilities and course length restrictions. It relies on commodity-priced COTS hardware and a non-proprietary architecture. It is both upgradeable and extensible.

Warfighter Value: This technology will accomplish two goals vital to defense operations: training people better, faster, and stronger; and doing with considerable cost savings. In addition, the technology developed will be extensible for other USN maintenance training opportunities.

WHEN

Contract Number: N68335-16-C-0116 **Ending on:** September 30, 2016

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Prototype virtual environment	Low	Customer acceptance of environment	TRL-6	September 2016
Psychomotor haptic demo	Low	Working and effective psychomotor	TRL-5	July 2016
Final validation of Immersive Training Simulator (ITS) algorithms	Low	Research team's confirmation of algorithm efficacy	TRL-4/5	August 2016
Development of the virtual environment objective	Low	Customer review and acceptance	TRL-7	September 2016

HOW

Projected Business Model: Creative Technologies Inc. (CTI), a small woman-owned business founded in 2006, specializes in developing ground-breaking and award-winning defense-related products. CTI intends to mature these products, making them available as desktop, tablet or device applications accessible as local or cloud based solutions. CTI intends to license these as full systems or provide them as an on-demand training service over the cloud.

Company Objectives: CTI's objective is to conceive, design and deliver a novel, immersive, cognitive simulation solution for the Navy's Schoolhouse Training Systems. CTI's simulation capabilities include application development and systems integration, along with staffing and support. CTI provides solutions at the location-based institutional, desktop, transportable and mobile levels. The company's creative visualization capabilities in marketing and communications take complex systems, their features and operations, and make them intuitive and accessible to a wide range of audiences.

Potential Commercial Applications: PHASE III: Transition a validated training system to military customers for production and acquisition. Provide military trainers and their interagency partners with a validated model of skill acquisition and decay that generalizes to additional domains (e.g., medical).

PRIVATE SECTOR COMMERCIAL POTENTIAL/DUAL-USE APPLICATIONS: This research and development effort has U.S. Government-wide and possibly multinational and international application (United Nations, NATO), as well as applicability to private sector training and education markets.

Contact: Lisa Jenkins, Producer

lisa.jenkins@cretecinc.com

3233164580