Photo by Mike Casey

MAJ Michael Stinchfield, left, and MAJ Greg Pavlichko demonstrate the virtual capabilities of the Stryker Virtual Collective Trainer concept at the Combined Arms Center - Training Innovation Facility on Fort Leavenworth, Kan.

Training Innovation Center Shows Path to Future Army Training

MAJ MICHAEL STINCHFIELD

The Army faces the challenge of providing training capabilities that prepare Soldiers to win in an increasingly complex world. To make that challenge even more difficult, the training capabilities must be produced quickly and at low cost. The Combined Arms Center – Training (CAC-T) at Fort Leavenworth, Kan., is collaborating with other Army organizations to meet those challenges.

At the Combined Arms Center – Training Innovation Facility (CAC-TIF), a team of Soldiers and Civilians are using today's off-the-shelf technologies to demonstrate how to create new Army training capabilities, largely using existing programs of record.

Last year, the CAC-TIF was formed to examine current capabilities and recommend future requirements for simulations. Located at Fort Leavenworth's National Simulation Center, CAC-TIF is demonstrating how emerging technologies such as virtual reality and common commercial devices such as touchscreens can be leveraged for immersive training.

Virtual Reality

Virtual reality is a fully immersive, artificial environment presented through a display system embedded in goggles. It is a challenging method to present training, but the CAC-TIF is showing its real potential for affordable military application with several different demonstrations.

The CAC-T team is looking at the civilian world to see how virtual reality can improve Soldier training and education. NFL teams are using virtual reality technology to train quarterbacks how to recognize various defensive schemes. To teach astronomy, one commercial game places the student in a small spaceship to tour the solar system and some of the Milky Way's largest stars. Using technology this way, fundamentally enhances education by giving the student a sense of being there.

For military education, virtual reality offers great opportunity to make learning more interesting and compelling. Soldiers learning about the Battle of Gettysburg could sit upon MG George Meade's horse as he directs the defense and just as easily transfer their point of view to GEN Robert E. Lee ordering an attack.

Virtual reality also will provide opportunities for Army leaders who could use photographic data from digital maps to virtually conduct reconnaissance of potential operational areas.

The CAC-TIF team works to understand these emerging technologies and how they can be used to fill training gaps, reduce costs, and improve home-station training. Team members are not working alone. They collaborate with the operating force and the Program Executive Office for Simulation, Training, and Instrumentation to recommend requirements for training gaps.

Stryker Concept

The CAC-TIF's work on the Stryker Virtual Collective Trainer concept exemplifies how the facility is looking at applying affordable commercial hardware to develop requirements for a training capability gap. Stryker Brigade Combat Team (SBCT) leaders have expressed the urgent need for a Stryker training simulator.

To demonstrate the concept, CAC-TIF team members used commercially available virtual reality headsets to create a 360-degree immersive environment outside the vehicle. Improvements are on the way to enhance virtual reality as companies introduce new retail headsets with even better capabilities. The concept vehicle uses touch screens instead of an expensive console with a number of buttons. The CAC-TIF, however, did incorporate some items that needed to be exact. The joystick has the same form, fit, and function of one in the Stryker vehicle.

The Stryker virtual trainer concept is just for demonstration, not for actual training. The CAC-TIF team wants to know what the force thinks of the concept, what works, and what needs improvements. They displayed it at the Interservice/Industry Training, Simulation, and Education Conference in December 2015 and the Stryker Leadership Summit in February 2016. They are also taking a platoon capability demonstration to some SBCTs in 2016 to get feedback from Soldiers in order to refine requirements.

In addition to the Stryker, the CAC-TIF aims to demonstrate inexpensive interfaces for collective aviation and mounted maneuver training.

Synthetic Training Environment

Future CAC-TIF work will focus on more than just virtual reality and vehicle simulator interfaces. Their primary objective is to refine requirements for future simulation capabilities, specifically the Synthetic Training Environment (STE).

The STE will provide a single simulation service, no matter what the training objective. Whether you need to fly a helicopter, rehearse a Stryker platoon attack or conduct a staff exercise, the virtual world created by the STE is the one which you will interface. The CAC-TIF's projects ultimately refine requirements for the STE and demonstrate how you will interface with that simulation environment in future training.

You can submit suggestions for future CAC-TIF projects to MAJ Mike Stinchfield at (913) 684-8122 or e-mail: usarmy.leavenworth.cac.mbx.cac-t-pao@mail.mil.

MAJ Michael Stinchfield currently serves as the chief of the CAC-TIF.

CALL Releases Interoperability Reference Guide

The challenges and complexity of the future will require the Army to provide a broader range of capabilities to achieve strategic outcomes across a complex and diverse range of global missions. The Army Vision cites "integrate operations" as one of the unique roles performed by the Army, providing combatant commanders with foundational capabilities, to include headquarters capable of integrating joint, interagency, and multinational operations. In the future, the need for interoperability will extend to lower echelons of Army forces in order to effectively integrate smaller national contributions into multinational operations.

http://usacac.army.mil/sites/default/files/publications/16-18.pdf