

# Immersive & Cognitive Training Aids

Under the Immersive and Cognitive Training Aids effort, ICT leverages film and video game entertainment technologies to develop cutting edge, research driven methodologies to revolutionize learning across a range of training domains. This unique approach has led to the creation of an array of successful educational applications. Mixed reality installations include the Joint Fires and Effects Trainer System (JFETS) and the Cognitive Air Defense Training System (CAD-TS), both emplaced at Fort Sill, OK. Computer based simulations include the Full Spectrum Command (FSC), Full Spectrum Leader (FSL), Full Spectrum Warrior (FSW), the Distribution Management Cognitive Training Initiative (DMCTI), and the web-delivered Self-Directed Learning Internet Module – Every Soldier a Sensor Simulation (SLIM-ES3). In 2006, SLIM-ES3 received the eighth annual Department of Defense (DoD) Modeling and Simulation Award for training excellence. In 2008, DMCTI received the DoD Modeling and Simulation Award for Army-wide team training.

## PROJECTS

### Joint Fires and Effects Trainer System (JFETS)

The JFETS is a suite of state-of-the-art immersive virtual reality environments designed to help Warfighters make critical decisions under stress and provide collective team training and situational awareness. Tasks not only focus on the technical application of skills, but also on the thought processes involved in employing those skills. By leveraging the ICT's mixed reality technology, JFETS recreates environments that place Warfighters in real world, current operational settings. Stressors include heat, wind, explosions, human distress noise, and snipers. JFETS also provides added artificial intelligence behaviors to insurgent forces and realistic, reactive behaviors to civilians. Installed at Fort Sill, JFETS has trained over 16,000 Warfighters since 2004, and is currently being used by members of the US Army and Marine Corps for training prior to deployment to Afghanistan and Iraq.

### Cognitive Air Defense – Training System (CAD-TS)

The CAD-TS Engagement Control Station Simulation prepares Soldiers to use the US Army Patriot missile defense engagement operations center for the Patriot firing unit. It is designed to help bridge the gap between recognizing the 2D scope of information from the radar interface and understanding that information based on realistic visualizations of the 3D airspace. The CAD-TS ECS2 trains and assesses Soldiers' abilities to recognize and respond to perceived threats with complete situational awareness. The system is comprised of five projection screens and a lecture stage, as well as Blue and Red cells for force-on-force functionalities. The CAD-TS ECS2 is able to accommodate up to 64 Soldiers per training session through combined immersive simulation and digital media-enhanced classroom instruction.

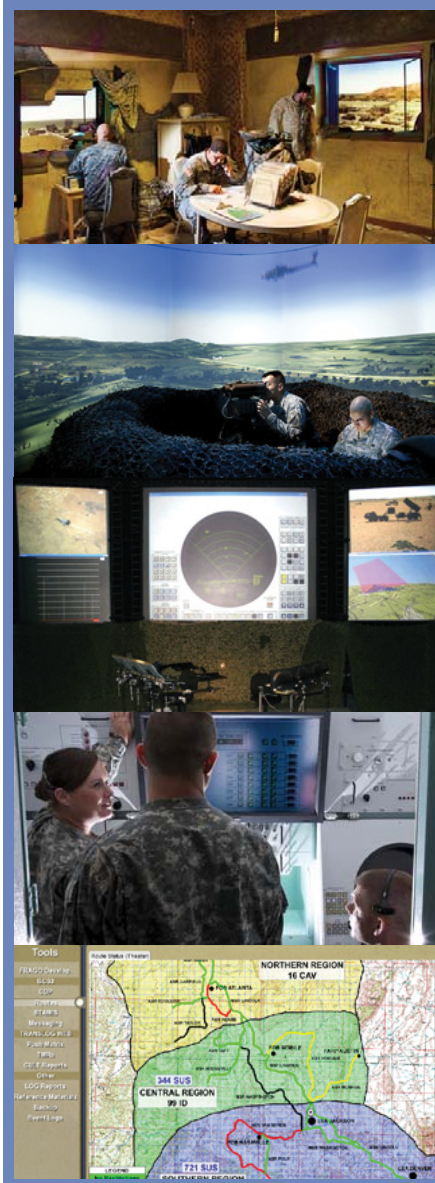
### Distribution Management Cognitive Training Initiative (DMCTI)

Winner of a 2008 Army Modeling and Simulation Award for Army-wide team training, the DMCTI prototype application trains US Army logistical planners and supports the understanding of the Army distribution management process. The DMCTI promotes the development of strategies for best exploiting the capabilities of logistics management systems, including the Army's recognized logistics command and control tool, Battle Command Sustainment Support System (BCS3). Lessons are available in three levels of difficulty: beginner, intermediate, and advanced. A post exercise review (PXR) provides students with an evaluation as well as a representation of how their performance compares to experts in the field. The overall design of the DMCTI prototype is flexible enough to support distribution management training to multiple levels of US Army command and staff positions.

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## GOALS

- Train cognitive skills necessary for problem solving in the Contemporary Operational Environment (COE).
- Implement research-driven applications to provide innovative learning tools for military instructors and Warfighters.
- Supplement costly live training exercises.