



CANADIAN WES

WEAPONS EFFECTS SIMULATION SYSTEM

Taking Combat Training to the Next Level



The Weapon Effects Simulation (WES) system is an advanced, land-based combat training system that provides unprecedented realism, fidelity and accuracy for the Canadian Army's force-on-force exercises.

The Cubic-developed instrumented system enables soldiers to train as they fight, up to the Battle Group level, and provides soldiers and commanders with immediate feedback to objectively measure performance and combat readiness. The system is employed at Army training sites in Wainwright, Alberta; and Gaagetown, New Brunswick.

WES precisely tracks, monitors and records the actions of individual soldiers, combat vehicles and weapons effects for After Action Reviews (AARs). A key feature of WES is its timely, accurate simulation of both "direct fire" from individual weapons and vehicles, as well as "indirect" events such as artillery, mortars, mines, and the effects of Nuclear, Biological and Chemical events. The system truly replicates the actual characteristics and performance of the soldiers' weapons in realistic combat environments.

WES features a fully integrated Direct-Fire Weapons Effects Simulation (DFWES) system consisting of Cubic's laser-based soldier instrumentation; a state-of-the-art precision gunnery system; and a software-based system for exercise planning, mission control and after-action reviews. The fully instrumented DFWES system is installed at Canadian Manoeuvre Training Center (CMTC) in Wainwright.

The CMTC Wainwright includes an Exercise Control (EXCON) facility for data collection, analysis and debriefing. The EXCON automatically collects engagement data and supports the preparation of AARs to help units identify their strengths and weaknesses. The AARs can be conducted inside fixed theaters, portable tents or from Field-Observer Controller (FOC) vehicles.

A key component of the system is Cubic's PC - Range Instrumentation System (PC-RIS)



software package, which functions as an exercise control system and performs all the necessary computations necessary to show player actions and movements.

PC-RIS tracks up to 4,000 players and vehicle movements in near real time and records the information for playback. It also allows simulation of the indirect weapons effects. PC-RIS is installed inside the EXCON as well as on Field Observer Controllers (FOC) laptop computers.

The instrumentation system is fully integrated with the DFVES products, including the laser-based infantry systems and Cubic's new Precision Combat Training System (PCTS) for vehicles. Both systems feature eye-safe laser engagement capabilities, realistic audio/visual effects and casualty outcomes identified as a "hit," "near miss" or "kill."

The infantry weapon system allows troops to fire laser "bullets" from the same weapons and vehicles that they would use in actual combat. At the WES sites, Cubic outfits more than 2,000 players with DFVES components.

The vehicle-mounted PCTS is a next-generation, two-way simulation system that can be used for both precision gunnery and force-on-force training in rugged environments. The system develops armored crews' gunnery techniques using eye-safe laser ammunition and

manouvring targets.

PCTS incorporates unique laser optical and radio-frequency communications to ensure superior tracking accuracy and realistic "fire-and-forget" performance. The PCTS equipment is installed on a family of shooter and target vehicle platforms at CMTC Wainwright, including the Leopard C2, LAV3 and LAV Coyote vehicles.

Canadian WES is one of several new Cubic combat training systems around the world. Other recent implementations include Land 134 in Australia and the U.S. Army's Alaska Training Range Evolution Plan.

Specifications

Locations: Wainwright, Alberta and Gagetown, New Brunswick

Number of Players: 2,100 soldiers and 700 vehicles, upgradeable to 4,000 players at CMTC

Direct Fire WES: Simulates all in-service small arms, vehicle cannons and anti-armour weapons, except ADATS

Area WES: Simulates all possible area weapons such as mortars, artillery, mines, and Nuclear, Biological and Chemical events

Delivery: 2004-2007

Training at CMTC Wainwright commenced 2006

Training at CTC Gagetown commenced 2007