

Warfare Simulation Laboratory

AIR COMBAT ENVIRONMENT TEST & EVALUATION FACILITY

Overview

The Warfare Simulation Laboratory (WSL) uses the most advanced technology available to support the virtual warfare community at ACETEF. It contains five UNIX-based minicrewstations capable of low-to-medium level simulations of flight, sensor modeling and instrumentation. The laboratory also contains several PC-based stations that are used for a variety of simulation project needs. One of the primary features of the WSL is its connectivity to the High-Performance Computing (HPC) Center. The HPC provides the WSL with 9 Infinite Reality Engine (RE3) graphic pipes, 42 GFLOPS of peak computing power, 37 GB of main memory and 713 GB of total hard disk storage. Scenarios developed with the Simulated Warfare Environment Generator (SWEG) create a virtual battlefield in the WSL, where manned and scripted entities interact in any desired world environment.

The WSL began as a rapid prototyping facility for virtual cockpit displays of various platforms, including F/A-18, F-14D, EA-6B, AV-8B, UH-1, H-60B and other aircraft. The laboratory expanded its capability to include high-resolution visual imagery, radar and IR sensor displays and multiplayer distributed interactive simulation networking.

The laboratory has hosted different phases of the Joint Theater Missile Defense (JTMD) project, where over 2,000 entities interact between three geographic sites through a secure T-1 line. Pilots in the WSL fly missions in a 1,200-by-600-mile data base of Iran-Iraq in an effort to locate and destroy mobile missile launchers. The success of JTMD is proof that the WSL can harness the power of HPC and use SWEG scenarios in an effective and productive ACETEF simulation. The WSL is home to a large, imagery-fed, realistic terrain data base of Southwest Asia (Persian Gulf) and is currently producing IR and radar sensor data of the same area in order to exercise multisensor integration modes of candidate displays.



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