

CAE JTC TRS

Joint Terminal Control Training and Rehearsal System

A persistent decline in the availability of live assets for U.S. and partner nations to use in training their Joint Fire Support communities necessitated a new solution. The CAE JTC TRS is a collection of immersive training tools designed to provide military personnel with realistic training in Close Air Support (CAS) and Indirect Fire Support (IFS) operations. Using the CAE JTC TRS system, Joint Terminal Attack Controllers (JTACs), Forward Observers (FOs), and military personnel responsible for directing and coordinating the use of CAS and IFS assets in combat can gain valuable experience with these assets in a simulated environment that closely mirrors the challenges and complexities of realworld operations. This can help improve their proficiency and readiness for actual combat situations and can also help to reduce the risks associated with live-fire training exercises. The CAE JTC TRS family of systems provides a full spectrum of virtual Close Air Support and Indirect Fire Assets for all Joint Fires training needs.

Performance Capability Student Station

Equipped with an immersive visualization system – HMD, Flat Panel Monitor, or Dome – the extensive array of simulated and emulated military equipment and devices includes Laser Range Finder (LRF), Laser Target Designator, Binocular, Global Positioning System (GPS), ROVER, and a reconfigurable radio suite. Additional specific equipment can also be provided, for example:

- M22 Binocular
- M4
- Mortar
- LTLM
- DAGR
- Mark VII E
- PLRF-15C
- SOFLAM
- IZLID
- Ranger47

Performance Capability Instructor Operator Station (IOS)

The JTC TRS family of systems comes with a full spectrum of virtual close air support and indirect fire assets, providing the Instructor/Operator the capability to run simultaneous Call for Fire (CFF), Naval Gunfire, fixed wing Close Air Support (CAS), rotary wing CAS, Unmanned Aerial Vehicle (UAV) CAS, and AC130 Gunship support missions, as well as a division level fire plan. All options are available via a simple point and click interface to generate, start, pause, and stop scenarios for Joint Fires training.



Customer-focused solutions to deliver tailored training at the point of need

- Low maintenance, highly dependable COTS hardware
- Proven solution, tested across various users and training hours
- Fully scalable, from portable and desktop systems through 5 meter domes
- Seamless integration of simulated and emulated military equipment
- Interoperability with Distributed Integration System (DIS) and networks through a DIS architecture, enabling distributed training

Performance Capability Role Play Station

The JTC TRS family of systems also offers the Role Player station. It enables control of any entity in the scenario, including the full array of aircraft platforms, fixed or rotary wing, and attack aircraft for CAS or Remotely Piloted Aircraft (RPA) for Intelligence, Surveillance and Reconnaissance (ISR).

Key Features and Benefits

- A Graphical User Interface (GUI) ensures ease of use for the maintainers and instructors
- Real time Health Monitor tracks the status of the computational equipment
- Daily Operational Readiness Testing (DORT)
- Emulated Military Equipment status is also tracked
- The connection and status of all peripherals are monitored by the TCES software

CAE Trainer Configuration and Equipment Simulation (TCES)

The JTC TRS system is supported by TCES, CAE's non-proprietary software application developed specifically to support the Joint Terminal Control Training and Rehearsal System. CAE's TCES software suite serves as a simulation host interfacing with the Image Generator (IG), Semi Automated Forces (SAF) and Emulated Military Equipment (EME), as well as the Operator Station and Projection Display system. TCES is a real-time sequencer and plugin interface. It handles DIS, CIGI and dozens of other simulation component APIs to bring plug and play capability to any system.

Training System Support Center

CAE set up a Training System Support Center (TSSC) As part of the JTC TRS contract. The TSSC has overall responsibility for Contractor Logistics Support (CLS) and features a help desk for tracking and resolving problems. The TSSC is also responsible for Information Assurance (IA) and configuration management to ensure the Authority to Operate (ATO) is maintained. The TSSC tracks and distributes system upgrades to all fielded sites and provides training on system operation and system maintenance.

JFS ESC Accreditation

The CAE JTC TRS System has been accredited by the Joint Fire Support Executive Steering Committee (JFS ESC) to replace live controls, Type 1, 2, and 3, both day, night, with laser designation as required for JTAC qualification and currency training In Accordance With (IAW) the JTAC Memorandum of Record (MOA).

The JTC TRS is the most capable and proven system for initial qualification and to maintain currency for JTACs, JFOs, FOs, FACs, and FOOs. Currently over 35 CAE JTC TRS systems are fielded, more than any other joint fires training system in the world. The CAE system is in use at the JTAC Qualification Course where all US JTACs receive initial qualification.

JTC Portable MR Solution

In support of the JTC TRS program, CAE USA is currently developing a portable, rapidly deployable, mixed-reality based Joint Terminal Attack Controller training device built upon feedback obtained from the JTAC user community. Leveraging our experience as the JTC TRS prime developer and maintainer, we've designed a prototype training system to utilize COTS hardware, COTS software, as well as OEM software products from the legacy JTC TRS software baseline to achieve training capabilities similar to larger, more expensive dome and desktop-based devices.

By employing the same underlying software architecture as the currently fielded JTC TRS Desktop and Dome trainers, the CAE Portable JTC TRS system enables proven terminal attack control, Close Air Support (CAS), and call for fire training capabilities in a man-portable, rapidly-deployable platform. When coupled with geospatial software able to quickly import and create visual database content from available GIS terrain data, our portable system provides a training device that is transportable and readily configurable for use at the point of need.

CAE's JTC Portable MR training device is designed to be modular, adaptable, and easily scalable to the training requirements of the end user. Training can be provided simply by two ruggedized laptops, or a rugged transportable student station computer can be employed for enhanced visual fidelity and performance. Similarly, the CAE JTC Portable MR device can utilize purely 'virtual' emulated military equipment controlled by off-the-shelf game controller hardware as well as custom 'physical' emulated hardware that mimics the form, fit, and function of actual tactical equipment for the user in the simulated mixed reality battlespace.

This document consists of general capabilities information that does not contain controlled technical data as defined within the International Traffic in Arms (ITAR) Part 120.33 or Export Administration Regulations (EAR) Part 772.

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