

CAE TraxAcademy



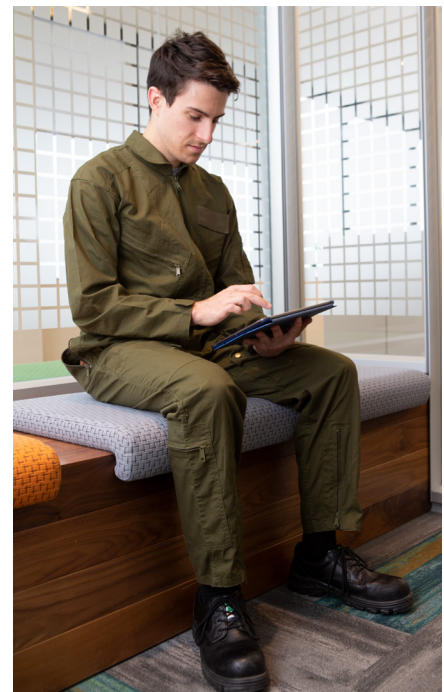
Overview

Military organizations are focused on improving the efficiency and effectiveness of pilot training. To help students gain skills faster and train for events which cannot be easily replicated in the air, new methods and innovative technologies are being explored to streamline and create a more adaptive, student-centered and personalized learning environment, transforming training. CAE's work in digital technologies – Artificial Intelligence, Machine Learning, advanced data analytics, Adaptive Learning and Virtual Reality (VR) courseware is consolidated into the CAE Trax Academy. A student-centric self-paced, instructor-supported training system for integrated, immersive training to optimize pilot training for fixed-wing or rotary wing aircraft. The CAE Trax Academy supports all phases of the pilot journey.

Learn – The initial phase of the CAE Trax Academy training continuum

State-of-the-art training media including a high-fidelity cross platform courseware and VR-enhanced modules for a visually immersive experience, enables students to [Learn](#) the training procedure. The CAE Trax Academy Learning Management System incorporates Adaptive Learning to capture student performance data and monitor competency acquisition.

Automated AI-based recommendations for personal learning are provided. The LMS interface enables students, instructors and the organization to access training content such as schedules, courseware, and remote instruction easily and on demand.



Learn — Practice — Perform



Practice – Consolidating learning

Next, students **Practice** in the CAE Sprint Virtual Reality (VR) training device. A VR headset with high-resolution out-the-window visuals and 20/20 visual acuity to read the instrument panel is driven by the CAE Prodigy image generator for a high-fidelity, realistic virtual environment. Flight controls – stick, throttle and rudder pedals for fixed wing platforms or cyclic, collective and pedals for rotary wing aircraft, combined with physical cues, create a high-fidelity, affordable yet sophisticated VR flight training device with a small footprint. The CAE Sprint VR trainer can be equipped to deliver course-ware and automated follow-through lessons. Progress is supported by a virtual coach providing immediate, actionable intervention and CAE Rise performance assessment to measure achievement.

Perform – Proficiency and crew training

The final stage of the student's journey is to show they have synthesized what they have learned and practiced. CAE Sprint VR trainers can also be coupled for collaborative training as pilot and co-pilot/monitoring pilot. The next step is to move to a high-fidelity flight simulator or live aircraft. CAE Rise supports instructor evaluations and aggregates individual results, allowing trends to be monitored and gaps identified-leading to opportunities for continuous improvement.



CAE Sprint VR Training Device — Integral to the CAE Trax Academy

- High-fidelity, small footprint, immersive virtual environment
- Controls can be automated to provide follow-through experience
- Physical controls: force feedback stick/cyclic, throttle/collective, pedals
- CAE Sprint VR Training Devices can be linked together for multi-crew training.
- VR headset for out-the-window visuals and instrument panel legibility

CAE Rise It enables objective assessment, data-informed learning and performance coaching, including the data analytics and predictive analysis necessary for continuous improvement.

Program Examples

Adaptive Learning for the U.S. Air Force

CAE USA was awarded a contract from the Defense Innovation Unit (DIU) to support the U.S. Air Force Air Education and Training Command (AETC) and its Undergraduate Pilot Training (UPT 2.5) initiative. CAE USA is responsible for the installation and integration of a cloud-based Learning Management System (LMS), which is a key element of the CAE Trax Academy pilot training continuum. The LMS will enable the Air Force and its students to access training content such as schedules, courseware, and remote instruction more easily on demand. In addition, by implementing an LMS that is optimized through artificial intelligence (AI) and machine learning, the Air Force expects to create a pilot training process that is continually adapting and improving.

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