CAE**Sprint**

Virtual Reality (VR) Trainer

Overview

The CAE Sprint Virtual Reality (VR) trainer is an integral element of the CAE TRAX Academy, a comprehensive and integrated training continuum for pilot training. The CAE Sprint (Self-Paced, Real-time Insights for Next-Generation Training) VR trainer is more than just another simulation-based training device -- it is an integrated, self-paced tool delivering lesson content and guided training to help student pilots acquire and practice requisite skills.

The CAE Sprint VR trainer includes physical controls, a virtual coach and CAE Rise (Real-Time Insights and Standarized Evaluations) performance assessment. Visual immersion is enabled via a VR headset with high-resolution out-the-window visuals generated by the CAE Medallion image generator, which delivers 20/20 visual acuity to read the instrument panel. Realism is further enhanced by using flight controls – joystick, throttle, and rudder pedals -- combined with physical cues boosted by haptics and seat vibration.

The CAE Sprint VR trainer combines CAE's expertise in digital courseware, closed-loop feedback tools and Learning Management Systems (LMS) with a flexible, affordable visually immersive VR training device to deliver a realistic and interactive virtual environment.

The immersive and realistic VR experience in the CAE Sprint VR trainer is enhanced by:

- A platform-tailored CAE Sprint VR training device leveraging full-fidelity simulation software to increase training fidelity
- Embedded CAE TRAX Academy training content provides higher value than VR simulation alone
- Excellent visual quality delivered by the integration of the Head Mounted Display (HMD) and CAE Medallion image generator to provide an out-the-window (OTW) visual environment with 20/20 visual acuity and the ability to easily read cockpit instruments
- Interface with existing Learning Management Systems (LMS)
- Hand tracking and sensory input via haptic feedback; bracelets provide bare-handed accessibility
- Sound enablement
- Seat vibration effects

The CAE Sprint VR trainer helps support better student throughput:

- Students train at their own pace, not limited by communal progress at the group/class level or blocked by scheduling restrictions
- The CAE Sprint VR trainer can be reconfigured to provide training on multiple platforms
- Visual database, collimated Heads Up Display (HUD), full weather simulation consistent with high-fidelity simulators
- CAE Sprint VR trainers can be linked to enable team training
- A comparably low cost of ownership facilitates an increased number of training devices available for use
- More training devices leads to an increased number of students training

The CAE Sprint VR trainer enables better quality training with the integration of:

- CAE Learning Management System (LMS) including computer-based training (CBT) combined with high-fidelity, virtual reality (VR) enhanced visual content for scenario immersion
- The CAE Virtual Coach delivering immediate, actionable instruction and feedback
- CAE Rise (Real-time Insights and Standardized Evaluations) performance assessment, tracking and benchmarking for continuous improvement
- CAE's simulation-based courseware provides a common core simulation base ensuring continuity throughout the training continuum – from digitally-enabled courseware and self-paced VR trainer to higher-fidelity flight training devices and full-mission simulators.

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CAE Sprint VR Training Device Configuration Profiles

Configuration profile*	Non-specific (generic) cockpit controls	Platform-tailored cockpit controls
Training tasks	Procedures training, demonstrating maneuvers, flight training, live sorties familiarization, weather conditions	
Simulation	CAE high-fidelity aircraft simulation with full virtual environment (i.e. weather, sound)	
Self-paced lessons	Tailored to customer curriculum	
Virtual coach	Embedded objective assessment and real-time virtual coach powered by **CAE Rise**, based on: Aircraft dynamics - Flight controls - Cockpit switches - Eye tracking	
Headset	High-end commercial grade headset, 20/20 eye acuity in targeted viewing area	
Cockpit interface	Infrared (IR) camera-based bare-handed tracking, with haptic feedback	
Structure	Typical cockpit geometry	Specific cockpit geometry
Stick	High-end gaming, spring-loaded (Custom)	Force-feedback, 50 Nm
Stick grip	High-end gaming	Specific replica
Throttle	High-end gaming	Specific replica
Pedals	High-End Gaming, Spring loaded (Custom) Adjustable pedal distance	
Seat	Gaming seat	Specific partial replica with electric height adjustment
Cueing	Seat vibration	
Network	Interoperability capabilities over High Level Architecture (HLA) and Distributed Interactive Simulation (DIS)	

* Configuration profiles are based on identified training requirements as defined by a training needs assessment. The configurations above are examples.

The CAE Sprint VR trainer offers the ability to offload training tasks from high-end flight training devices and simulators. The platform-tailored nature of the CAE Sprint VR trainer reinforces platform familiarity and muscle memory for better, more realistic immersion and training in a smaller-footprint, sophisticated yet affordable training device.

The CAE Sprint VR trainer makes self-paced immersive training highly accessible, enabling student pilots to practice and then put learning into action.

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