

Adaptive Learning Environment (ALE)

The ALE is a revolutionary digital solution that provides human-like performance assessment and adaptive coaching capabilities.



In 2021, CAE acquired L3Harris' Military Training business, which included Link Simulation & Training and Doss Aviation. These businesses are now integrated with CAE USA as part of CAE's Defense & Security business unit.

Overview

CAE's Adaptive Learning Environment (ALE) is aligned with the U.S. Department of Defense (DoD) roadmap to enhance warfighter's performance and readiness with digital technologies and a transformative adaptive training framework. The ALE provides real time scoring across performance and biometrics, accelerates learning, reduces instructor workload, proctors simulated training events, and integrates with any new or existing training system.

Transformative

The ALE improves training efficiencies through systematic and objective rule-based measures of performance and effectiveness. The ALE performance monitoring and assessment technology provides instructors and students with real-time feedback, allowing for immediate coaching through a mix of instructor and automated cueing.

Biometrics

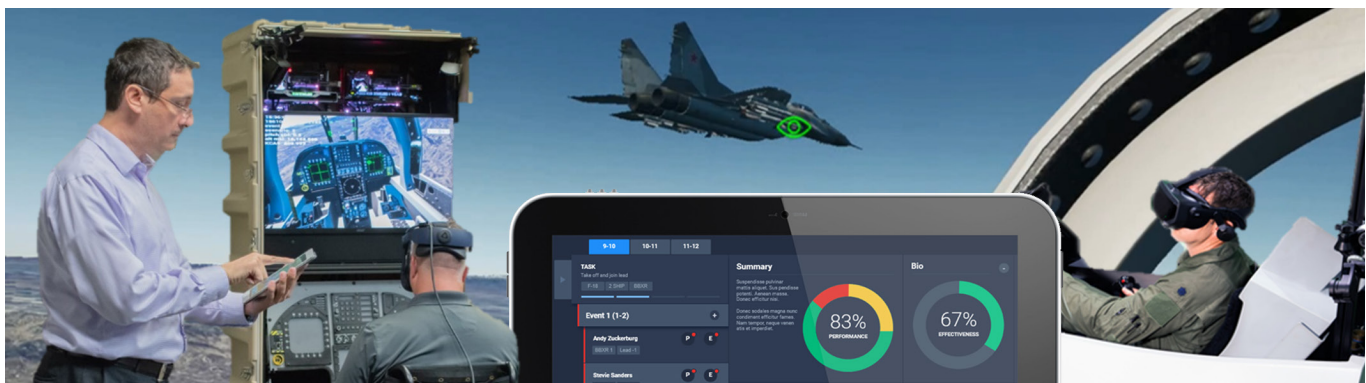
With the ALE biometric suite, instructors can gauge students' psychophysiological states and situational awareness, allowing them to differentiate beyond just objective performance outputs.

Instructor-led training

The intuitive user interface and powerful visualizations enable the ALE to serve as a force multiplier for instructors by serving as their data capture manager and analyst. Removing these requirements from instructors workload allows them to focus on teaching their students and intervening only when necessary for teachable moments.

Self-paced training

In the self-paced mode, the ALE provides objective, data-rich debriefs featuring instructor-like virtual feedback and interactive grade sheets empowering students to take training into their own hands.



Key features of the ALE

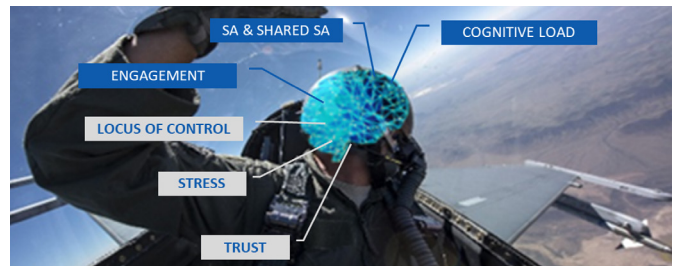
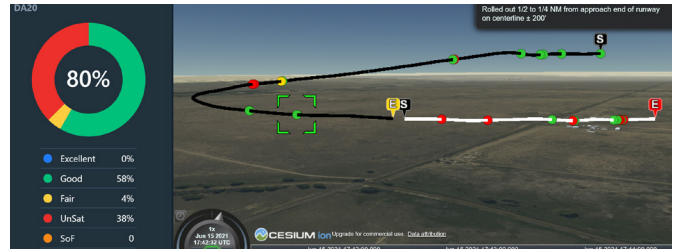
- Designed to connect to multiple training devices simultaneously
- Cloud-based and compatible with the Simulator Common Architecture Requirements Standards (SCARS) for future-proof cybersecure environment
- Increases student throughput and reduces instructor loading
- Real-time rule-based measurement increases grading and teaching standardization
- Engaging user experience for both trainees and instructors

Proctoring your training events with ALE

- Synthetic instruction for self-paced events
- Instructor-led training assists with cueing, data capture and event flags
- Syllabus standards augmentation with instructors' implicit knowledge and scoring heuristics
- Life-like instructor voice feedback via Instructor Pilot Prompts (IPP)
- Performance-based adaptive visual cueing
- Auto populated grade sheets with actionable feedback
- Graphical user interface (GUI) optimization for self-paced training

The next step in training evolution with your personal synthetic instructor

- Real-time performance assessment across augmented syllabus standards, stress, and mental workload
- Data rich photorealistic 3D flight path visualizer to support training and debriefs
- Aggregate assessment of student past performance, visualize learning curves, and access leaderboards
- With eye tracking, see exactly where the student is looking – in and out of the cockpit
- Assess gaze scan accuracy with Machine Learning classifiers
- Automated scoring of complex procedural scan patterns
- Calibrate once; the ALE remembers who you are
- Partnership with a top tier academic institution to produce real time measures of students' psychophysiological states
- The only highly accurate pilot gaze and mental workload classifiers in industry
- First automated index of pilots' situational awareness
- Unobtrusive, easy to use biometric devices



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