

Visualization

CAE offers leading edge visualization solutions to provide realistic simulation environments for training, analysis, and mission rehearsal. Based on commercial-off-the-shelf technologies, the CAE suite of visualization solutions offers the flexibility to develop high-fidelity visual environments for use in any simulation platform – from desktop trainers to full motion training devices.

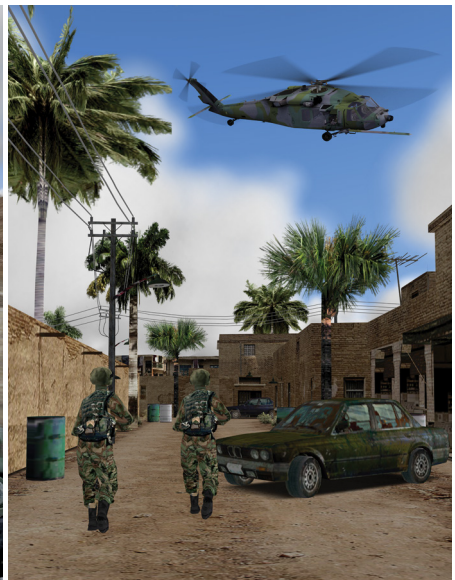
High-fidelity modeling

CAE's suite of visualization solutions provide high-fidelity terrain, entity, and effects modeling to enhance the realism experienced by the user. Such models include:

- Sun, moon and stars ephemeris model, physics-based sky model, volumetric clouds, shader-based light points, dynamic shadows, particle-based weather simulation including rain, hail, and snow
- Full suite of special effects, including tracers, missile trails, explosions, smoke, rotor downwash, conforming craters and bullet impact
- Lifeform simulation with suite of animations for military and civilian actors
- Human behavior modeling to enhance interaction with intelligent agents
- Up to sea state 6 dynamic 3D ocean model with ship wakes, swell and wind lanes
- Comprehensive mission functions (height above terrain, collision detection, line of sight, laser ranging)
- Correlated sensor suite for FLIR, NVG, EVS, EO, Day TV and LLTV computed using sensor textures with 16-bit radiance values and advanced video post-processing

Interoperable

The CAE team develops visualization environments that are fully compatible with distributed interactive simulation (DIS) and high level architecture (HLA) protocols, supporting the creation of networked environments for distributed training exercises. CAE solutions are designed with single or multiple channel capability distributed across numerous stations and convert easily to widely used industry standard database formats including SEDRIS, OpenFlight, Performer, S1000, and common database (CDB) to support any simulation platform.





Reusable

CAE visualization solutions are developed based on a common database architecture that creates highly reusable databases. The goal is to allow clients access to rapidly generated, correlated run-time databases for supported simulation systems. Key objectives of the common database architecture include:

- Plug-and-play capability, interoperability, and reuse of data;
- Reduce redundancies;
- Access to a common repository of updated, correlated data sources;
- Common training elements throughout the military forces;
- Reduce future development and lifecycle costs; and
- Allow different systems to train together through distributed simulation.

For military personnel in the battlefield, having training systems equipped with the most up-to-date databases ensures they are better prepared for their missions and increases the potential for mission success. For the military leaders making acquisition decisions, the ability to test and evaluate new equipment in realistic synthetic environments allows them to make better informed decisions to equip military personnel in the field.



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