

CAE Medallion-6000MR

Overview

CAE's Medallion-6000MR image generator builds on the proven features and performance of CAE's long-standing Medallion-6000 family of image generator solutions tailored for the military market. CAE's Medallion-6000MR continues to leverage the latest commercial-off-the-shelf (COTS) graphics processors and includes enhanced features aimed at supporting a highly realistic and immersive synthetic environment for a variety of applications with industry-leading image quality.

The CAE Medallion-6000MR image generator provides the following training benefits:

- › Exceptional image quality and scene density, with detailed environments and realistic night scenes for enhanced fidelity
- › Realistic 3D ocean, wakes and ocean-to-shore simulation with enhanced whitecap and water illumination effects for improved overall visual cueing
- › Updated scene densities for runways, taxiways, airport contaminants, aprons and terminal buildings delivering unmatched airport realism
- › Support for the Open Geospatial Consortium Common Database (OGC CDB) standard enabling more accurate terrain profile and enhanced local terrain features such as rivers and roads
- › Ability to modify OGC CDB synthetic environments at run-time to change the terrain dynamically (CAE Dynamic Synthetic Environment)
- › Ideally suited for collective and distributed mission operations training (DMO)
- › High-end sensor simulation capabilities



Key Features

CAE's Medallion-6000MR includes the rich feature set the Medallion family has pioneered for virtual air applications, including fast jet, tanker/ transport aircraft and rotary wing visual training, as well as features that make the CAE Medallion-6000MR ideal for creating realistic, immersive synthetic environments for maritime, land and public safety applications. Features include:

- › Animated 3D grass and 3D trees
- › Particle-based recirculation and downwash effects
- › Realistic run-time lighting and shadowing effects based on various light sources
- › Craters, weapons effects, and localized damage on any three-dimensional (3D) content or vegetation at runtime
- › Environment reflections on lakes and oceans
- › Dynamic environment full of moving models, special effects and characters
- › Support of OGC CDB standard for ease of content reuse (open specification)
- › Reflective model for rainy conditions and fog, including multiple 3D clouds for accurate simulation of weather and the resulting impact on training
- › Sun, moon and stars ephemeris model, physics-based sky model
- › Shader-based light points
- › Smooth dynamic shadows correlated to sun/moon positions (terrain, moving models, buildings, cloud layers, storm models, lamp posts, projected light lobes)
- › Particle-based weather simulation including rain, hail, and snow
- › Accurate simulation of weather phenomena's (storm cells, lightning, blowing effects, contaminants, snow scene, wind layers)
- › Full suite of special effects, including tracers, missile trails, explosions, smoke, rotor downwash, and recirculation, conforming craters and bullet impact
- › Lifeforms simulation with suite of animations for soldiers, marshalls, and landing signal enlisted (LSE)
- › Up to sea state 6 dynamic 3D ocean model with ship wakes, swell and wind lanes and a 2D ocean model for high level flight
- › 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
- › Highly scalable visual system entirely based on COTS workstation components
- › Based on industry standards: Windows 10 Embedded, OpenGL, OpenFlight, OGC CDB, CIGI
- › Fully backward compatible with CAE Medallion interfaces and databases
- › Compatible with ultra-high resolution projectors (including 8K projectors)
- › Low latency (< 52 ms)

Common Specifications

- › Windows 10 IoT operating system (64 bits)
- › COTS graphic card
- › Sustainable iteration rate: 60 Hz
- › Supports 120Hz operation with dual-input projectors
- › Simulation polygonal capacity: 1M+ at 60 Hz
- › Light point capacity: 250,000 per channel at 60 Hz
- › Internally generated blend zones
- › 1024 addressable moving models
- › Up to 28 level-of-detail (LOD) geo-specific satellite or CAE Motif imagery texturing
- › Advanced texture compression and LOD paging techniques
- › 256-level alpha transparency
- › Fully projected light lobes
- › HUD overlay support
- › Outstanding performance, leveraging latest graphics processor (GPU) technologies
- › Advanced shader-based 3D engine
- › 16-bit radiance computation with advanced sensor post-processor (SPP)
- › Embedded non-linear dome mapping (NLIM) for curved surface projection
- › Multiple-inputs projectors synchronization capability
- › OGC CDB content level selected on-the-fly (one run-time database)
- › Assured correlation across OGC CDB systems when operating in network
- › Centralized database repository for ease of database maintenance and deployment (automatic updates to multiple simulators and sites)
- › Low operating costs

Capabilities of CAE Medallion-6000MR

Application types	<ul style="list-style-type: none"> › Full-mission simulator › Mission rehearsal › High-end out the window (OTW) › Stealth view display › FTD/CPT - Role playing station › Low-end OTW › Sensor simulation › Maritime › Land › Public Safety › Rear-crew trainer
Number of channels	1 to 64
Full-scene anti-aliasing	CAE's proprietary AA algorithm combining temporal and multi-sampling tailored to high-end flight simulation
Anisotropic filtering (max.)	16x AF (angle invariant)
Resolution/Anisotropic filtering (typical application)	2560x1600 @ 60 Hz 8x AF
Genlock & frame Lock	Y



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For more information contact us: