![AeroScene — Simulation Visual Engine]

ADACEL'S ENHANCED IMAGE GENERATOR SOLUTION, POWERED BY EPIC GAMES' UNREAL ENGINE

As the leading provider of Air Traffic Control (ATC) simulation and training solutions, Adacel has consistently elevated the quality of its systems to provide a superior user experience. In line with its mission, the company has developed AeroScene—a new Image Generator (IG) solution built on Epic's powerful Unreal Engine, representing a substantial improvement of Out-The-Window realism and Virtual Reality environments.

AeroScene
SIMULATION VISUAL ENGINE

COMPETITIVE ADVANTAGES

SCALABILITY AND FUTURE-PROOF ARCHITECTURE

- Harnesses the power of Epic's Unreal Engine, known for its robustness in many industries, including video games, training and simulation, architecture, and automotive.
- Delivers a highly efficient 3D rendering pipeline that optimizes Central Processing Unit (CPU) and graphics cards processing power, for a more agile image generation process.
- Leverages Epic Games' continuous improvements, accessing the engine's latest advancements in image generation technology.
- Benefits from the vast Unreal Engine Marketplace and community, which provide a steady flow of accessible models, techniques, and resources for AeroScene's continuous development.

A HIGHER REALISTIC ENVIRONMENT

AeroScene implements the modern rendering technique of Physically Based Rendering (PBR), which facilitates more accurate representation of light interaction with objects to achieve impressive realistic-looking materials and special effects. This approach delivers an image quality that goes beyond most simulation capabilities available in the simulation market.

EXCEPTIONAL SIMULATION WITH VISUAL DATABASE AND MODELS

With PBR, AeroScene achieves unprecedented fidelity in models and landscapes, with a masterful use of textures, embossed effects, smooth surfaces, and complex shadow details. Users can now observe:

- Higher fidelity of airports, aircraft, vehicles, and landscapes.
- Realistic atmospheric lightning, colors, and dynamic shadows.
- Detailed foliage, including swaying grass.
- Moving water, like ripples on a lake or streams.
- The interplay of aircraft taxi lights reflecting upon ground surfaces.
- The movement of animate cables engaged by aircraft hooks.
- Articulated windsocks that inflate and deflate in the breeze.
- Enhanced special effects and emergencies.
- Natural motion of personnel, animals, and flocks of birds.

ADACEL

adacel.com

SUPERIOR WEATHER SIMULATION

AeroScene introduces significant advancements in simulating weather conditions.

- The volumetric cloud system generates highly realistic cloud formations, including cumulonimbus clouds capable of producing their own rain.
- Users can create weather scenarios with varying conditions at different parts of the airport, control visibility independently of precipitation intensity, and define cloud layers, height, altitude, and transition.
- Customizable weather simulations can dynamically change over user-defined periods: precipitation can start, stop, resume, or change intensity based on users' preferred timelines.

The intuitive Weather Editor application simplifies the creation and changes of the weather systems, allowing trainers to design scenarios with up to five weather areas, multiple cloud layers, precipitation types, and visibility obstructions.

HIGHER STUDENT ENGAGEMENT

Today's students are the most technologically advanced of all time. They grew up playing video games in highly realistic environments and now expect the same level of realism in classroom training. AeroScene's more realistic simulation environment with high-fidelity images will significantly enhance their engagement in training simulations. It will create a higher sense of immersion, which, in turn, will trigger emotional responses and enhance the overall impact of the simulation. Additionally:

- An authentic representation of real-world scenarios will allow students to connect the training to real-life contexts, making the experience more meaningful and engaging.
- By capturing more nuances of the real world, students will pay closer attention to the details and better understand the concepts being taught.
- A more realistic and versatile interactivity will broaden students' ability to explore, resulting in a more memorable and impactful learning experience.
- A rich and immersive environment will make the learning experience more enjoyable and challenging, stimulating students' curiosity and intrinsic motivation to learn and explore.

A highly realistic simulation environment with high-fidelity images will engage students by creating a sense of immersion, authenticity, attention to detail, interactivity, emotional connection, and motivation. By enhancing student engagement and facilitating greater learning retention, AeroScene plays a vital role in promoting effective learning outcomes, ultimately contributing to aviation safety.

ADACEL

adacel.com

A LEAP FORWARD

AeroScene represents a significant leap forward in ATC simulation and training, providing a wide range of enhancements that elevate realism and immersion. By leveraging the state-of-the-art Unreal Engine and employing PBR techniques, AeroScene sets a new industry standard for visual fidelity. Its superior weather simulation capabilities, combined with the intuitive Weather Editor, equip trainers and trainees with powerful tools to create dynamic and realistic training scenarios. Adacel remains committed to advancing the quality of ATC simulation solutions, ensuring professionals in this critical field have access to the most realistic, immersive, and effective training experiences available.

We are here to help. Contact us: info@adacel.com

UNITED STATES
9677 Tradeport Drive, Orlando, Florida 32827-5318
USA

CANADA
895 De La Gauchetière West, Suite 300
P.O. Box 48
Montréal, Québec H3B 4G1
Canada

AUSTRALIA
29/3 Westside Avenue
Port Melbourne, Vic, 3188
Australia

ESTONIA
Sõpruse pst 145,
13418 Tallinn, Estonia

ADACEL

adacel.com