

WHOLEEARTH™ SYNTHETIC ENVIRONMENT

Regionalized, high-resolution 3D content, including sensor, day/night and seasons.



Southwest U.S. region, suburban theme.

Enable your trainees to rehearse missions sooner while reducing your synthetic database development costs with the WholeEarth™ synthetic environment from Rockwell Collins. WholeEarth blends the industry's most comprehensive, highest-resolution 3D database content with your developed insets – giving your forces the seamless realism that makes their training count.

**Rockwell
Collins**

Building trust every day

Bring unrivaled agility and fidelity to the foreground.



Southwest U.S. region, farm theme.

Training requirements vary widely and change quickly. Simulations cover large-theater scenarios to smaller, surgical missions that often change overnight. Many of today's training missions also involve flight over very long distances. The need to "train the way you fight" puts demands on simulator systems – particularly the production of the visual synthetic environment data. Simulator systems – and their associated visual data – must be more flexible, responsive and reliable than ever before.

Rockwell Collins' latest version of WholeEarth is just that. It includes geo-specific elevation and land-use data, along with a library of geo-typical theme images and models that are dynamically assembled in real time. The result is unmatched fidelity for continuous flight around the entire virtual globe.

For many training applications, adequate synthetic environment data already exists in WholeEarth. What was once just "background data" is now suitable for many training objectives. Only vital geo-specific content needs to be added – drastically reducing data production times while shortening the time to training and lowering its costs.

WholeEarth capabilities

- › Geo-specific land-use data (for placement of geo-typical content)
- › 100-meter geo-specific elevation data
- › 0.5 meter geo-typical imagery resolution
- › 20 regions with geo-typical local content (imagery and 3D models)
- › Day and night content for 24-hour training applications
- › Material-encoded imagery and models for sensor applications
- › Specular reflections and 3D sea states on large bodies of water
- › Summer and winter scenes (snow where appropriate)
- › Highly configurable generic airfield for rapid content creation
- › Seamless integration with high-resolution insets
- › Less than 2 TB data on disk (when used on Rockwell Collins EP2™ systems)

WholeEarth – reap the extensive benefits of innovation.

Technology advancements and Rockwell Collins innovations make possible the capabilities now available in WholeEarth. Themels, a Rockwell Collins patented technology, is a geo-typical content mechanism that has been used in various ways and by many customers for almost two decades. The previous EP[®] and WholeEarth products used geo-typical Themels, but technology limitations restricted their resolution and content – making them suitable mostly for background representations.

New computer processing capabilities – along with innovations in the EP2 real-time software – allow the same basic Themel architecture to be extended and enhanced, so the new WholeEarth includes high-resolution, localized, 3D content.

The benefits of Themels have never been more evident than in the new WholeEarth. A relatively small amount of data on disk (approximately 1 TB for worldwide Themels), combined with real-time Themel image compositing, model placement and rendering, make for a compelling global representation of day, dawn, dusk and night, specular, sensor, summer and winter scenes.

No additional hardware or software is needed on Rockwell Collins EP2 image generator systems – unlike other geo-typical or geo-representative capabilities that require specialized run-time publishing software and/or a dedicated data server.

Semiannual updates will add geo-relevant themes around the world.

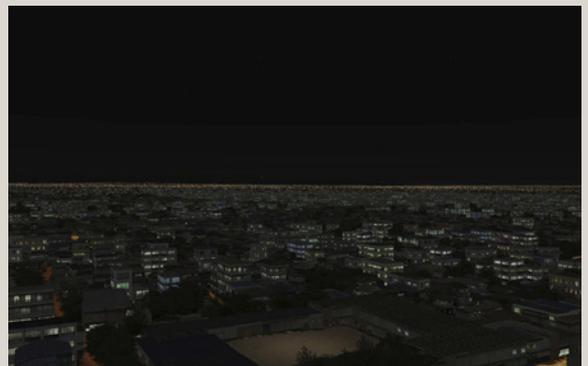
Additional planned enhancements will include worldwide, geo-specific road networks and recognizable landmarks. WholeEarth is a growing capability with ever-improving, usable content.

The greatest benefit of WholeEarth is the potential to be a “good enough” synthetic environment for many training applications – all by itself. Combine WholeEarth with the Rockwell Collins generic airfield capability (real-time created and rendered airfield models based on DAFIF data) and you can reduce much of your time-consuming database production, focusing on only those areas that absolutely must be real-world/geo-specific. Yet, WholeEarth content is believable, compelling and representative – supporting all types of flight simulation in the various modes (out-the-window and sensor).

Wavelengths



Day



Night



Sensor



Winter

Building trust every day.

Rockwell Collins delivers innovative aviation and high-integrity solutions to commercial and government customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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