

VR-Vantage® IG

3D Image Generation for Out-the-Window, Camera, and Sensor Channels

Overview

VR-Vantage IG is an image generation software solution from VT MÄK. Install it on any standard PC with an NVIDIA graphics card and immediately start generating realistic 3D scenes of your simulation environment. Whether you use it to render a first-person view for a virtual trainer, to provide a sensor channel for a UVS simulation, or to generate simulated security camera feeds for a homeland security application, VR-Vantage IG is easy to deploy and configure.

Distributed Rendering

VR-Vantage IG's built-in distributed rendering architecture supports many different display configurations — from simple desktop deployments to multi-channel displays for virtual cockpits and training systems. An intuitive GUI allows you to connect to remote display engines running on additional PCs, configure channel parameters, and set up viewing frustums.

Host-IG Interface

VR-Vantage IG supports the industry-standard CIGI (Common Image Generator Interface) protocol for controlling the IG from a separate simulation host. Through CIGI, your host application can control the eyepoint, place and control moving models, load terrains, set visual parameters, and more. VR-Vantage IG can also provide mission functions by responding to line-of-sight and height-above-terrain queries.

But VR-Vantage IG does not *require* you implement a dedicated IG control protocol like CIGI. It also natively supports the HLA and DIS protocols, so that it can generate scenes based directly on the CGF and other entity traffic that you are already publishing on your distributed simulation network. You can send special DIS or HLA messages to control the eyepoint, or use the run-time GUI to place the eyepoint at a simulated camera location on the terrain, or to attach to a specific HLA or DIS entity.

Built-in Content and Capability

VR-Vantage IG comes with a rich set of top-quality 3D entity models from companies like SimthetiQ and RealDB that support attached parts, damage representations, and articulated parts such as turrets and guns. Built-in support for Boston Dynamics' DI-Guy™, DiSTI's GL Studio®, IDV's SpeedTree®, and Sundog's SilverLining™ means that you don't need to buy additional run-time licenses to have great looking human characters, interactive cockpit displays, dynamic trees and bushes, weather effects, and volumetric clouds.



USE CASES

- FLIGHT SIMULATORS
- UVS OPERATOR STATIONS
- GROUND CREW TRAINERS
- VISUAL AND SENSOR IMAGE GENERATORS



FEATURES

- PC-BASED IG SOFTWARE
- 3D IMAGE GENERATION
- CIGI, HLA, AND DIS COMPLIANT
- SHADER-BASED ENVIRONMENT RENDERING
- SENSORFX MODULE FOR EO/IR/NVG
- MULTI-CHANNEL DISTRIBUTED RENDERING
- GL STUDIO COCKPIT DISPLAYS
- DI-GUY HUMAN CHARACTERS
- SPEEDTREE VEGETATION
- LARGE AREA TERRAIN DATABASE PAGING
- TERRAIN AGILE
- BASED ON OPENSCENEGRAPH

Terrain Agility and Correlation

VR-Vantage IG is Terrain Agile — able to work with a wide variety of terrain approaches, formats, and protocols. The tool can load traditional databases, like hand-modeled OpenFlight, page large-area terrains, like MetaFlight, and build visual databases “on-the-fly” from source data like DTED, GeoTIFF, and Shapefiles. It can even dynamically create 3D terrain by streaming in elevation, imagery, and features to build up large areas and cutting-in site models for high fidelity ground detail.

SensorFX for Physics-based Sensor Displays

The SensorFX module converts VR-Vantage IG from a visual scene generator to a sensor scene generator. Based on the SenSim and SigSim run-time products from JRM Technologies, SensorFX models the physics of light energy as it is emitted, reflected, and transmitted through the atmosphere and into a sensing device. It also models the collection and processing properties of the sensing device to render an accurate electro-optical (EO), night vision (NVG), or infrared (IR) scene. Many of the models that come with VR-Vantage IG are already “sensor-ready”, but you can use JRM’s Genesis tool to materially classify the textures in your terrain and custom models.

Flexibility and Extension

While VR-Vantage IG comes ready-to-run out of the box, it can also be extended using the VR-Vantage Toolkit — based on OpenSceneGraph. Using the toolkit, developers can extend almost any aspect of VR-Vantage IG, embed it into simulations, or create new applications.

