

## The 3D Visual Solution That Fits MÄK Stealth, Vantage IG, & VR-Vantage Toolkit

### Fits your Simulation System

There are many ways to integrate 3D graphics into your simulation system, and VR-Vantage® provides the flexibility to fit your design. VR-Vantage is comprised of two applications and a toolkit.

- **The MÄK Stealth is a 3D information station** for the virtual battlefield. Whether you need it for situational awareness, simulation debugging, or after action review, the MÄK Stealth provides the most data about your networked virtual world, and presents it in a clear and accessible way.
- **Vantage IG is the configurable desktop image generator** for those who need an out-the-window (OTW) scene or a view from a remote camera. Vantage IG is designed for easy integration into desktop trainers and war gaming simulations.
- **The VR-Vantage Toolkit** comes with all the software you need to completely rebuild the visual applications like the MÄK Stealth or the Vantage IG, but it also **allows you to customize and extend** these applications **to fit your unique requirements**. It gives you the power to embed any of the MÄK Stealth or Vantage IG capabilities directly into your simulation applications.

### Distributed Rendering

VR-Vantage's built-in distributed rendering architecture fits your display configuration — from simple desktop configurations all the way up to multi-machine rendering farms for video walls or training devices.



**Fits!**  
YOUR SIMULATION SYSTEM  
THE WAY YOU WORK  
YOUR BUDGET

- TERRAIN AGILITY
- TOOLKIT ARCHITECTURE
- DISTRIBUTED RENDERING
- GAME-LIKE NAVIGATION
- HLA & DIS COMPLIANT
- BUILT ON OpenSceneGraph
- BUILT-IN THIRD-PARTY CONTENT
  - BOSTON DYNAMICS' DI-GUY HUMAN CHARACTERS
  - DISTI'S GL Studio® VEHICLE INTERFACES
  - SUNDOG'S SilverLining® FOR VOLUMETRIC CLOUDS
  - IDV'S Speedtree® FOR DYNAMIC VEGETATION
  - 3D MODELS FROM SIMTHETIQ AND REALDB



## Fits the Way You Work

### Run-time Control

VR-Vantage is designed to fit the way you work. While the application is running, you can reconfigure your windows and display channels, compose or load your terrain, edit model mappings, and connect to a DIS or HLA distributed simulation exercise.

Whether you're flying freely over the terrain, or following an entity as it moves through the scene, 3D navigation is easy in VR-Vantage. We've combined the best elements of first-person-shooters, real-time-strategy games, and "spin the earth" virtual globe applications, to provide an interface that you'll find familiar the moment you start to use it.

### Terrain Agility

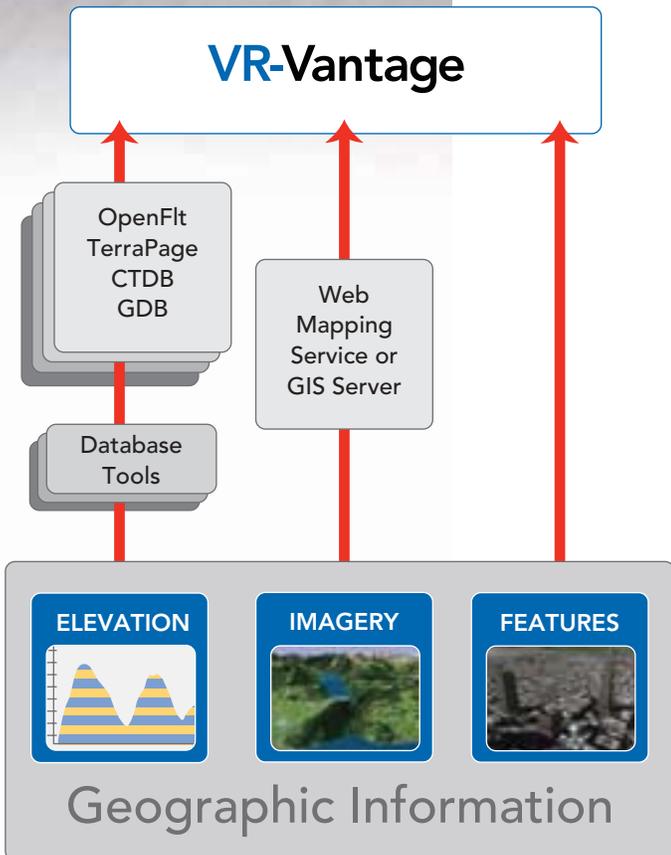
At MÄK, we understand the challenges of developing correlated distributed simulations. That's why we built VR-Vantage to be Terrain Agile.

Many 3D tools put the burden on the user to construct terrain in a format or structure that is specific to the tool. But VR-Vantage can directly load a wide variety of industry standard formats produced by a number of database tools. You can also compose terrain "on-the-fly" directly from source data — without the need to pre-build a terrain database! Raw elevation is dynamically tessellated into polygons with your imagery draped on top and point features are automatically replaced by 3D geometry based on mappings you configure from a GUI. VR-Vantage leverages osgEarth technology from Pelican Mapping to bring streaming elevation and imagery data directly from web-mapping services into your simulation. You no longer have to worry about setting up a specific "playbox" for each scenario. Now, the whole world is at your fingertips.

With VR-Vantage, you can load site models with dense urban buildup and thick vegetation as well as tiled terrain databases that page in over large areas. You can extract buildings and other models from the terrain and manipulate them. Turn specific buildings semi-transparent to see human characters interacting inside.

### Supported Terrain Formats

- GIS Source Data
- OpenFlight®
- TerraPage®
- Web Data Services
- Collada®
- 3D Studio Max®
- CTDB
- OpenSceneGraph's IVE
- VR-Forces®' native GDB
- And more...



# Fits Your Budget

VR-Vantage provides the best value among visual application toolkits.

## Built-in Content

VR-Vantage 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, integrate, and configure extra modules to have great looking human characters, interactive cockpit displays, dynamic trees and bushes, weather effects, and volumetric clouds. HLA and DIS support through MÄK's own VR-Link networking toolkit is included, so that interoperability is a given, not an add-on.

## Flexible Licensing

Flexible licensing options allow you to have a lab full of ready-to-use applications at reasonable prices, or the ability to deploy applications without burdening your users with run-time license mechanisms. Developers' licenses for partner add-on products are only necessary when you extend or customize these tools.

## VR-VANTAGE INCLUDES

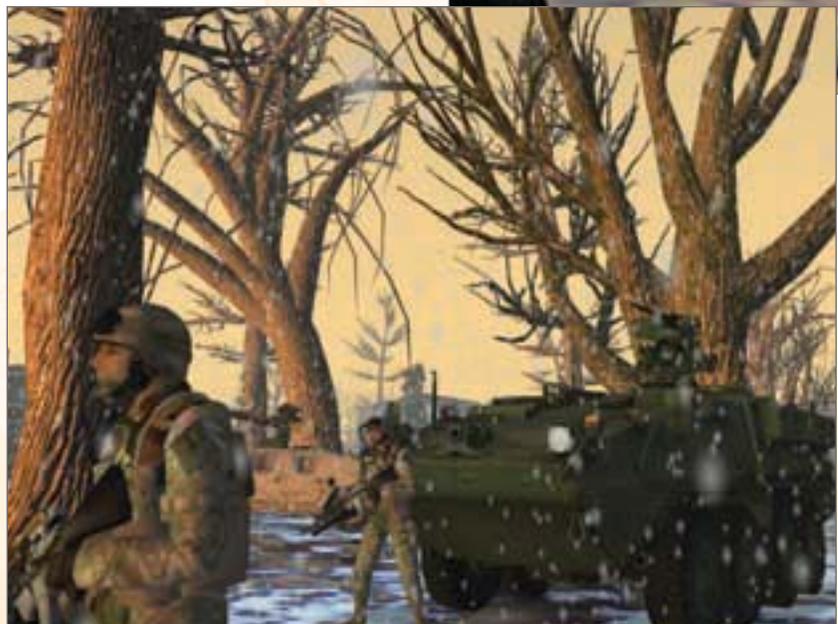
- 3D Entity Models
- 3D Feature Models
- DI-Guy Characters
- SpeedTree Vegetation
- SilverLining Atmosphere
- GL Studio Vehicle Interfaces

## MÄK Stealth

The MÄK Stealth is a 3D visualization tool that focuses on information. It provides the most data about your networked virtual world, and presents it in a clear and easily accessible way. Whether you need it for situational awareness, simulation debugging, or after action review, the MÄK Stealth is easy to use and ready to run out-of-the-box. Using an intuitive GUI, you can load your terrain and connect to a distributed simulation exercise. Navigate through the virtual world by dragging the terrain, clicking on a destination, or maneuvering the eyepoint using familiar first-person-shooter controls. You can orbit around buildings or props, attach to and follow entities, jump in the cockpit for an out-the-window view, or mount your virtual camera on a vehicle.

The MÄK Stealth visually presents the widest variety of information about your DIS or HLA virtual environment. In addition to the typical entity display, the Stealth can draw trailing effects, trajectory histories, entity information overlays, attacker-target lines, and more. It can also draw 3D representations of tactical graphics from VR-Forces, such as waypoints and routes.\*

*\*Tactical graphics support coming Summer 2009*



## Vantage IG



Vantage IG is a configurable desktop image generator that provides out-the-window scenes and camera views for your simulation system. You can deploy Vantage IG as a dedicated Image Generator (IG) application — controlled by your simulation over a network using a host-IG interface protocol. Or choose a host-integrated-IG approach, by making direct API calls to the visualization system.

Vantage IG can be configured to generate a single display channel for a desktop trainer, an unmanned vehicle sensor, or a cockpit multi-function display. Take advantage of the built-in distributed rendering to create multi-channel displays for airplane and helicopter cockpits, ground vehicles, or ship bridge trainers. In any configuration, Vantage IG is a fully featured VR-Vantage application with built-in DIS/HLA support, loads of 3D content, and our signature Terrain Agility.

### LINK — SIMULATE — VISUALIZE: BETTER THAN EVER

MÄK has always provided products to help you Link, Simulate, and Visualize the virtual world. With VR-Vantage, we bring our philosophy of combining flexible applications with powerful toolkits to the core of our visualization solution. VR-Vantage continues in the spirit of The MÄK Advantage: By drawing on our technology, expertise, partnerships, and character, we bring you compelling distributed simulation solutions.

## VR-Vantage Toolkit

Whether you're doing something as simple as adding a reticule overlay, or something as complex as building a first-person training game, the VR-Vantage Toolkit offers unlimited possibilities for innovation in 3D visualization. Using the VR-Vantage Toolkit, you can build plug-ins to customize and extend MÄK Stealth or Vantage IG, build new 3D visualization applications, or embed VR-Vantage capabilities directly into your simulation applications. And because the VR-Vantage Toolkit is based on OpenSceneGraph, you can leverage value-added plug-ins built by the OSG community and MÄK partners. Need to build an Instructor Operator Station? A debrief or after-action-review tool? A 3D data analysis tool or custom IG for a human in-the-loop simulator? The VR-Vantage Toolkit provides an excellent starting point.

The VR-Vantage Toolkit makes it easy to add support for new networking protocols or terrain formats, to modify or extend the GUI, or to add custom drawable objects to the scene graph. If you are familiar with OpenGL or OpenSceneGraph, the VR-Vantage API allows you to work at those levels to implement your extensions. Or, derive from VR-Vantage's higher-level classes to automatically make your functionality distributed-rendering capable and configurable through the VR-Vantage application GUIs.

Like MÄK's toolkits VR-Link (for interoperability) and VR-Forces Toolkits (for simulation), the VR-Vantage Toolkit includes full class documentation and source code examples, and is backed by MÄK's renowned technical support — with direct access to MÄK developers.



68 MOULTON STREET CAMBRIDGE, MA 02138 TEL 617.876.8085 FAX 617.876.9208 WEB [www.mak.com](http://www.mak.com)