



VR-Vantage 1.3 Release Notes

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Document ID: VRV-1.3-3-110506

Systems Supported and System Requirements

This section describes platform support and system requirements for VR-Vantage. For the most up-to-date information about systems supported, see the Product Versions page on the MÄK web site at: <http://www.mak.com/support/productversions.php>.

VR-Vantage is available for the following operating systems:

Table 1: Platforms supported

Operating System	Compiler
Windows XP	Microsoft Visual C++ 8.0, 9.0 32 and 64 bit
Windows Vista	Microsoft Visual C++ 8.0, 9.0 32 and 64 bit
Windows 7	Microsoft Visual C++ 8.0, 9.0 32 and 64 bit

Third Party Library Support

VR-Vantage uses the indicated versions of the following libraries:

- VR-Link 3.13.2
- Qt 4.6.3
- OpenSceneGraph 2.8.0.

VR-Vantage for Windows

VR-Vantage for Windows requires the following:

- A Pentium-class PC (or higher) with minimum 2 GHz processor
- An OpenGL 2.0-compliant graphics card with 256 MB or more of memory.
- Windows XP SP2, Windows Vista, or Windows 7.
- 10 GB of disk space.
- 1 GB of RAM; more is desirable depending on the size of the terrain database and the number of models to be loaded.

3D Video Boards Supported

In general, VR-Vantage 1.3 should support any board that claims to support OpenGL 2.0. VR-Vantage has been tested with current versions of NVidia graphics cards. There are known problems with ATI graphics cards (in particular, the ATI Radeon X1950 Pro).



You should always try to use the latest drivers available for your video board.

Compiler Compatibility on Windows

MÄK provides versions of product releases that have been compiled with Microsoft Visual C++ 7.1, 8.0, 9.0, and 10.0 (some products are not available on all compilers). When you run MÄK products together, for example, the Logger and a VR-Vantage application, we strongly recommend that you run versions compiled with the same compiler. Mixing products compiled with different versions of the compiler on the same computer can result in program instability.

FLEXlm Support

VR-Vantage 1.3 uses FLEXlm 11.8.

Using Libraries and Binaries Built with Visual Studio 2005 and Later

All MÄK products built with Microsoft Visual Studio require the C Runtime Library to function. The C runtime libraries have always been available from Microsoft for download, they are also installed on a user's machine when a Microsoft compiler is installed. The C runtime libraries are not part of the normal Windows installation.

Unfortunately, the C Runtime Libraries required by Microsoft Visual Studio 2005 (MSVC++8.0) and later cannot just be copied into the *bin* directory of an application. The libraries need to be installed correctly into Windows system folders. (The process is actually a little more complicated, a manifest file needs to be created to tell Windows where to find the libraries.)

To accommodate this change, MÄK distributes the Windows installer for the C runtime libraries with all MÄK products released for MSVC++8.0 and later. The 32-bit installer is named *vcredist_x86.exe*; the 64-bit installer (if supported) is named *vcredist_x64.exe*. They are in the base directory of any installed MÄK product that requires them.

For more information see this Microsoft URL:

<http://msdn2.microsoft.com/en-us/library/ms235299.aspx>



You must ensure that the preprocessor defines `_SECURE_SCL=0`, and `_HAS_ITERATOR_DEBUGGING=0` are set for MSVC++8.0 and MSVC++9.0 builds. If these are not set, random crashes and assertions may be encountered during runtime. The MSVC++ 10.0 version uses the default values for these flags.

Patch Required for AMD Dual-processor Windows PCs

VR-Link-based products use a high resolution counter for time calculations on Windows PCs. Customers who are running Windows on PCs with multiple AMD Athlon 64-bit processors may notice clock jitter, which may cause time in MÄK products to run backwards. This occurs when the Windows scheduler changes the CPU the MÄK process is using. If the high resolution counters on each processor are not synchronized, the application may witness a decrease in the high resolution counter value stored in the processor causing an incorrect time calculation. To fix this problem customers, apply the AMD Dual-Core Optimizer patch provided by AMD. You can get the patch at:

http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_871_9706,00.html



If you get an error when you try to access this URL, reload the page.

Network Compatibility

HLA only

VR-Vantage 1.3 is compliant with:

- ♦ RPR-FOM 0.5, 0.7, 0.8, 1.0, and a subset of 2.0 (draft 6, 14, and 17)
- ♦ MÄK RTI 2.x, 3.x, 4.x
- ♦ Pitch RTI 1.3 C++ interface.

Other RTIs that support the HLA 1.3 specification, the SISO DLC HLA API 1516 version of the IEEE 1516 specification (SISO-STD-004.1-2004), and HLA Evolved.) To use an RTI with VR-Vantage it must use the same operating system and be built with the same compiler.

DIS only

VR-Vantage 1.3 supports DIS 4, 5, and 6, and can therefore interoperate with DIS applications of any of these versions.

FOM Support

VR-Vantage 1.3 has built-in support for versions 0.5, 0.7, 0.8, 1.0, and 2.0, drafts 6, 14, and 17, of the RPR FOM. It also supports VR-Link's ability to support alternative FOMs through the FOM Mapper. By default, VR-Vantage 1.3 uses RPR FOM 1.0.

If you want to use VR-Vantage with VR-Forces 3.9 or later and RPR FOM version 2, draft 17, use the *VR-Link20017-1.fed* file.

Backwards Compatibility

VR-Vantage 1.3 applications and some files are not backwards compatible. Specific incompatibilities are as follows:

- ♦ Applications from a given release cannot control display engines from a different release. (In other words, a VR-Vantage 1.3 application cannot control a VR-Vantage 1.1 display engine.)
- ♦ Plug-ins built against one version cannot be used with the other.
- ♦ Model files (MEDF and MEIF) built with one version do not work with the other.

New Features and Product Updates

VR-Vantage 1.3 has the following updates and new features. They are cross referenced to relevant sections of *VR-Vantage Users Guide*.

- ♦ VR-Vantage PVD (plan view display) is a new VR-Vantage application. It provides a 2D view of simulated terrain and objects to provide the “big picture” of a simulation. It is documented throughout *VR-Vantage Users Guide*.
- ♦ VR-Vantage FreeView is a new application that is part of the VR-Vantage installer and also available as a free download. It allows you to view 3D models and to compose terrains using VR-Vantage’s terrain agility features. For details, please see *VR-Vantage FreeView First Experience* and VR-Vantage FreeView online help.
- ♦ Installation of data is now separate from installation of applications and the VR-Vantage Toolkit. (A full installation of VR-Vantage requires installing both the application package and the data package.) [Section 2.1, “Installing VR-Vantage”](#)
- ♦ Display of sensor volumes. [Section 11.10, “Displaying Sensor Volumes”](#)
- ♦ Display of intervisibility lines and fans. Addition of an Intervisibility toolbar. Chapter 13, [Intervisibility Objects](#)
- ♦ Display of grid lines in the 2D projection. [Section 5.11, “Displaying Grid Lines”](#)
- ♦ The File menu has been reorganized.
- ♦ Heading indicator for 2D icons. [Section 11.2.4, “Displaying Entity Labels for 2D Icons \(XR and PVD Only\)”](#)
- ♦ Support for clouds on geocentric terrains.
- ♦ Ability to force orientation of the observer to North in VR-Vantage PVD and the 2D view in VR-Vantage XR. [Section 9.6, “Forcing Orientation North \(XR and PVD Only\)”](#)
- ♦ Ability to display feature data in the 2D projection and configure the colors used to display features. [Section 5.9, “Displaying Feature Data”](#)
- ♦ The Terrain Panel has been added to the list of panels available on the View menu. It has two tabs, Vector Network and Scene Graph. The Vector Network tab lists all vector features in the terrain. If you select a feature on the terrain, it is highlighted in the list, and vice versa.

- ♦ The Scene Graph Nodes panel has been removed. Its functionality is now on the Scene Graph tab of the new Terrain Panel.
- ♦ Ability to read coordinate systems from databases produced by TerraSim.
- ♦ Ability to display text labels (symbol decorations) for 2D icons. [Section 11.2, "Displaying Entity Labels"](#)
- ♦ Ability to attach the observer to an articulated part, such as a turret. [Section 10.1.1, "Attaching to an Articulated Part"](#)
- ♦ Ability to select the vertices of tactical graphics.
- ♦ Ability to display weather effects based on messages from remote applications. [Section 7.4, "Displaying Remote Environment Settings"](#)
- ♦ Ability to create new observers on the Observer Settings page.
- ♦ A compass displays the observer's heading. [Section 9.1.1, "Using the Compass to View the Observer's Heading"](#)
- ♦ Overlay view of tactical graphics on the Objects List panel. [Section 14.1.1, "Overlays"](#)
- ♦ When entities simulated by VR-Forces are embarked, their icons are hidden in Plan View mode. The entities are still listed on the Objects List Panel.
- ♦ Visualization of aggregate entities being simulated by VR-Forces. This includes the ability to expand and collapse the display of aggregates and to display ghosted icons in the 2D views. Chapter 12, [Aggregate Entities](#)
- ♦ VR-Vantage now saves the GUI layout from one session to the next. [Section 5.9, "Displaying Feature Data"](#)
- ♦ When routes and areas are selected, the line segments are highlighted, instead of displaying a bounding box.
- ♦ Schemas for visualizers are no longer editable in the Visual Models Editor dialog box.
- ♦ You can no longer rename, copy, or reorganize element definitions.
- ♦ Support for MetaFlight terrains has been improved. MetaFlight terrains must now be processed before they can be used in VR-Vantage applications. For details, please see Appendix J, [Processing MetaFlight Files](#).
- ♦ Fixed frame rate command line option [Frame Rate Command-line Option](#), on page 8.
- ♦ Observer synchronization management [Observer Synchronization](#), on page 8.

VR-Vantage PVD

VR-Vantage PVD has been added to the VR-Vantage product line. It replaces MÄK Plan View Display. VR-Vantage PVD does not support the following features that were supported by MÄK Plan View Display:

- ♦ VR-Vantage PVD supports multiple windows, but they do not have full menus and toolbars like additional windows do in MÄK Plan View Display 2.x.
- ♦ The minimap is not implemented.
- ♦ Terrain profiles are not implemented.
- ♦ The navigation toolbar is no longer provided. All navigation is from the keyboard and mouse.
- ♦ The MÄK Plan View Display API has been completely replaced with an API based on VR-Vantage.
- ♦ HLA time management is not supported in the front-end.
- ♦ Selection groups are not supported.
- ♦ Entity resource graphics are not supported.
- ♦ Intervisibility grids are no longer supported. Configuration of intersection types is no longer supported.
- ♦ You cannot create overlays. However, the VR-Vantage PVD displays overlays created in VR-Forces.
- ♦ The Overlay Palette (and the various overlay objects that could be created from it) is not supported. Consequently you cannot edit any tactical graphics objects by moving, copying, pasting, or configuring properties.
- ♦ The functionality of the Raster Map Layers dialog box is no longer supported. However, there is significant ability to manipulate terrain images in the Terrain Settings dialog box.
- ♦ Watermarks are not supported.
- ♦ The ability to change display units is not supported.
- ♦ Hazard clouds are not supported.
- ♦ Communication lines are not supported.
- ♦ You can no longer run a script at startup (the `-R` command line option).
- ♦ The Object Count toolbar is no longer supported.
- ♦ You cannot customize the toolbars in the front-end. Developers can still add and remove toolbars programmatically.
- ♦ MÄK Plan View Display 2.x supported Mil-STD 2525A icons using bitmaps. These bitmap icons are not supported in VR-Vantage PVD.

Observer Synchronization

By default, all observers have their absolute position and orientation synchronized every frame. If you want to disable observer synchronization, set the `MAK_DISABLE_SYNC_OBSERVERS` environment variable to 1. To resynchronize observers, remove the environment variable.

Frame Rate Command-line Option

You can now specify a maximum frame rate for VR-Vantage. To do so, use the `-f rate` command-line option, where `rate` is an integer value. If you set the frame rate, VR-Vantage will not run faster than the specified rate. However, it can run more slowly than the rate. Under some circumstances, you may get better visual performance by setting the maximum frame rate to 30 or 60.

Documentation Updates

All VR-Vantage documentation has been updated for release 1.3. There may be some slight discrepancies between screen captures and the final versions of dialog boxes and icons.

The Intervisibility Properties dialog box, which is on the Intervisibility menu, is not documented. This dialog box is scheduled for removal in the next VR-Vantage maintenance release.

VR-Vantage Developers Guide does not fully document the VR-Vantage Toolkit.

Fixed Bugs

VR-Vantage 1.3 fixes the following problems that were present in VR-Vantage 1.2:

- In Plan View observer mode (VR-Vantage XR), using geocentric terrains, the icons for entities on the other side of the world were visible.
- Control+Left Click on a tactical graphic indicator unselected any other selected object. 42415
- MetaFlight files created by TerraVista were not supported. 42338
- VR-Vantage applications may freeze for a period of time if you close a terrain while you are connected to a simulation and there are DI-Guy characters in the scene. The application will eventually unfreeze after a variable period of time. The workaround is to disconnect from the simulation before closing the terrain. 42480
- Editing the value of the origin in the Add Terrain Patch dialog box did not work correctly, making it hard to enter a value. 42448
- Selecting a new observer mode on the Observer Settings toolbar did not release focus back to the viewing window. 42409
- Adding props to streaming terrains only works after the highest elevation has been streamed in.

- ♦ When you load a geocentric terrain, clouds are displayed in the center of the earth.
- ♦ Props added to GDAL terrains are not placed at the correct altitude. 40985
- ♦ Imported entity type mappings could not be saved as default settings. 42395

Known Problems and Product Restrictions

VR-Vantage has the following known problems:

- ♦ Import and Merge for element definitions does not work. Although the Import and Merge icon is still present on element definition pages on the Visual Model Editors dialog box, the feature is not available. 44580 44390
- ♦ When VR-Vantage opens a terrain in Plan View mode, it calculates an observer location above the terrain designed to provide a view of the entire terrain. Sometimes this distance is greater than the page-out distance of the terrain, which results in a black screen. If this happens, zoom in to the terrain so that it will start to page in.
- ♦ Sometimes when VR-Vantage opens a terrain in Plan View mode, the observer is placed very close to the terrain rather than at a location that allows you to see the entire terrain. You can zoom out to see the terrain.
- ♦ Some SpeedTrees may flicker on geocentric terrains.
- ♦ Some options on the Intervisibility Properties dialog box do not work. 44577
- ♦ Changing the hierarchy of raster map layers may cause a crash in VR-Vantage Stealth or VR-Vantage FreeView. 44498
- ♦ Intervisibility Line Parameters do not revert to global settings. 44371
- ♦ Virtual textures on roofs do not work. 44197
- ♦ The import and export settings icons on the pages in the Simulation Connections dialog box do not work. 44401
- ♦ Some examples do not have descriptions in the class documentation. 44495
- ♦ If you open a second window and then go into full screen mode, you might not be able to exit full screen mode. To work around this problem, close the secondary window. Thereafter full screen should work properly. 44505
- ♦ The Environment Settings page for VR-Vantage FreeView has a check box for listening to remote environment settings. This check box is not valid for FreeView because it does not connect to the simulation network. 44507
- ♦ The Intervisibility menu and the Intervisibility toolbar use the same icon for two different functions. 44185
- ♦ The settings on the Observer Settings toolbar can lose synchronization with the observer in the main window. To synchronize them, press any navigation key. 43706
- ♦ Using VR-Vantage PVD, intervisibility fans draw incorrectly on geocentric terrains. 44041
- ♦ The labels on grid lines can overlap under some circumstances. 43304

- ♦ The MetaFlight loader places the observer at the terrain grid center, which may not be close to the actual data loaded. This will work find for many databases but not all. 43895
- ♦ Removing the MAK CIGI Mappings from the CIGI Mappings dialog causes the Restore to Factory Settings button to be disabled. To workaround this problem, import the factory settings. 41838
- ♦ In some cases, selection boxes do not display correctly. 42615
- ♦ SpeedTree wind is not synchronized among remote display engines.
- ♦ Particle systems (smoke) is not synchronized between remote display engines.
- ♦ SpeedTrees do not show up in Plan View mode.
- ♦ If a graphics card does not support shaders, you may receive the following error message when you load a terrain that uses them:
`Shader [Branches] validation failed`

To work around this problem, set the SpeedTree Performance Profile to Disabled, as follows:

- a. Choose **Settings** → **Display**. The Display Settings dialog box opens.
 - b. Select the SpeedTree Settings page.
 - c. In the Performance Profile drop-down list, select Disabled.
- ♦ On external display engines, particle effects, such as smoke and trailing effects, sometimes restart spontaneously.
 - ♦ When you enter coordinate values into the Add Terrain Patch dialog box, it does not convert lower case letter to uppercase. The result is that VR-Vantage incorrectly interprets the coordinate values.
 - ♦ If you load the *LittlePondInset* or *LittlePondInsetNoSpeedTrees* terrains, it may appear as if nothing has loaded. This is because the default eyepoint is above the terrain. To see the terrain, look down, or load the *LittlePondTutorial.osrx* saved views file and select the saved view.
 - ♦ On Linux, when an application linked with Qt 4 such as the embeddedExample loads the DI-Guy plug-in, it crashes. The DI-Guy plug-in has a dependency on Qt 3. The crash is due to Qt 3 initialization calling functions that are defined by Qt 4 in the main application.

To work around this problem, do not use Qt 4 in the main application. If necessary write the Qt 4 user interface in a separate plug-in, or disable loading the DI-Guy plug-in (by explicitly adding it to the excluded plug-in files in the *DtVrvApplicationConfiguration*, or by removing the file from the *./plugins/release* directory).