



VR-Vantage 1.3.1 Release Notes

This document provides the following release-specific information for VR-Vantage™ 1.3.1:

Systems Supported and System Requirements.....	2
Third Party Library Support.....	2
VR-Vantage for Windows.....	2
3D Video Boards Supported.....	2
Operating System.....	2
Compiler Compatibility on Windows	3
FLEXIm Support.....	3
Using Libraries and Binaries Built with Visual Studio 2005 and Later.....	3
Patch Required for AMD Dual-processor Windows PCs.....	4
Network Compatibility.....	4
FOM Support.....	4
Backwards Compatibility.....	5
New Features and Product Updates.....	5
Preprocessing Paged Terrains	6
Documentation Updates	6
Fixed Bugs	6
Known Problems and Product Restrictions	7

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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 Windows Vista Windows 7	Microsoft Visual C++ 8.0, 9.0 32 and 64 bit
Red Hat Enterprise Linux Workstation 5.0. (32 bit and 64 bit libraries)	default compiler

Third Party Library Support

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

- VR-Link 3.13.2
- Qt 4.6.3
- OpenSceneGraph 2.8.2.

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 1.3.1 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 1.3.1 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 1.3.1 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 1.3.1 supports DIS 4, 5, and 6, and can therefore interoperate with DIS applications of any of these versions.

FOM Support

VR-Vantage 1.3.1 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 1.3.1 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 1.3.1 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 1.3.1 application cannot control a VR-Vantage 1.2 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 1.3.1 has the following updates and new features. They are cross referenced to relevant sections of *VR-Vantage Users Guide*.

- ♦ Ability to change the measurement units used in the display and in dialog boxes and panels. ([Section F.6, "Specifying Display Units"](#))
- ♦ New and changed options for the MedfTool. The `-t` command-line option is no longer supported. You can no longer embed textures in MEDF files. A new option, `-d`, has been added. It causes the MedfTool to flip DDS textures.
- ♦ Ability to scale terrain in VR-Vantage XR. ([Section 15.5, "Exaggerating the Terrain Scale"](#))
- ♦ Ability to zoom the observer view. ([Section 9.6, "Zooming the Observer"](#))
- ♦ Support for preprocessing external references used by paged terrains.
- ♦ The class documentation for several examples has been added or improved.
- ♦ The MetaFlightSampleFlatEarth and MetaFlight SampleGeocentric terrains are no longer included in the release.



YOU MUST INSTALL THE VR-VANTAGE DATA PACKAGE.

It is not optional. It contains data that is required by VR-Vantage applications.

Preprocessing Paged Terrains

VR-Vantage now supports preprocessing external references used by paged terrains. VR-Vantage does not require terrain formats such as TerraPage or pagable IVE to be preprocessed. However these terrains may use external references in formats such as OpenFlight, which load slowly. Although VR-Vantage can accelerate these files at run-time using the accelerated cache feature, the first time you load one of these terrains you can experience significant performance issues. You can use the medfTool to preprocess these external references and save them in MEDF format. Thereafter, VR-Vantage will load the accelerated version at all times.

For example, if a TerraPage terrain references */externals/tree.flt*, preprocessing will create a file called */externals/tree.medf*. When VR-Vantage loads the terrain, it will load the MEDF version instead of the OpenFlight version.

We recommend that you preprocess all data to minimize load times and maximize run-time performance.

Documentation Updates

All VR-Vantage documentation has been updated for release 1.3.1.

VR-Vantage 1.3 Release Notes incorrectly states that the command line option for setting the frame rate is `-f`. The correct syntax is `(-F | --frameRate) rate`.

Fixed Bugs

VR-Vantage 1.3.1 fixes the following problems that were present in VR-Vantage 1.3:

- A variety of display problems with remote graphics were fixed. 45364 45363 45352 45351
- If an OpenFlight file had the pixel format of its textures embedded, it would not open after being cached. 45135
- Large pageable terrains would not display in plan view mode. This was because the terrain would page out due to the observer's long fixed distance. 44914
- Some terrains did not display after being cached. 44908
- Intervisibility line indicators were displayed in the wrong place on remote display engines. 44797
- Tactical graphics labels were in the wrong location on remote display engines. 44783
- Bad visual definitions caused connections to crash. 44737
- Translucent 2D symbols did not work on remote display engines. 44652
- HAT lines did not work on remote display engines. 44678
- Using VR-Vantage PVD, intervisibility fans drew incorrectly on geocentric terrains. 44041

- ♦ If you opened a second window and then went into full screen mode, you might not be able to exit full screen mode. 44505
- ♦ Removing the MAK CIGI Mappings from the CIGI Mappings dialog caused the Restore to Factory Settings button to be disabled. 41838
- ♦ Changes to visual definition attributes were not always saved when a dialog box was closed. 44734
- ♦ SpeedTrees were black and had very low detail when viewed very closely. 44739
- ♦ If you set the time scale to a value greater than 1, it advanced more quickly than the speed it was set to. 44728
- ♦ Particle systems and DI-Guys were not displayed correctly when VR-Vantage was started with the --dataDir argument. 44024

Known Problems and Product Restrictions

VR-Vantage has the following known problems:

- ♦ Entity track histories have a significant performance and memory cost. For simulations with large entity counts, removing track histories can significantly improve performance and memory usage.

Since you cannot turn off track histories (you can only hide the visualization), to resolve this problem you must remove the track history visualizer from the entity definitions for entities that are being visualized in the simulation. If you are using VR-Vantage XR, you must remove them from all model sets to maximize the performance gain. 44361

- ♦ The TerraSimSampleUrbanMetaFlight terrain is not initially visible when loaded in VR-Vantage PVD or in PVD mode in VR-Vantage XR. To see the terrain, press **e** to zoom in. This problem potentially exists for all paged terrains whose page-in distance is less than the default observer distance in PVD mode.
- ♦ You cannot connect to a remote display engine running on Linux from a VR-Vantage application running on Windows. 45176
- ♦ The first time you load a terrain (including the terrains supplied with VR-Vantage), VR-Vantage caches textures in its fast load format. This is a slow process. However thereafter, the terrain will load quickly. If you want to avoid runtime caching, you can preprocess the terrain with the medfTool before you load it. If you want to disable runtime caching, you can do so as described in [Section 5.8, "Configuring File Caching"](#).
- ♦ Some SpeedTrees may flicker on geocentric terrains.
- ♦ Changing the hierarchy of raster map layers may cause a crash in VR-Vantage Stealth or VR-Vantage FreeView. 44498

- ♦ 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.
- ♦ 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.
- ♦ VR-Vantage does not support two separate X screens. The reason is that when you create two separate X screen and attempt to create two OpenGL windows, they may not share OpenGL contexts. A number of VR-Vantage components require sharing contexts for our rendering to work. These include: Silverlining, SpeedTree and our 2D overlays (possibly also GL Studio).

The work-arounds to support two screens include:

- Using Nvidia driver's TwinView mode. This behavior is identical to the Window multi-monitor behavior and VR-Vantage works correctly with this setting.
 - Use Xinerama which is an X extension which behaves similar to TwinView.
 - Run VR-Vantage on one X Screen and run a Remote Display Engine on the other. This will require two installs to ensure that the appData directories are not compromised. 44028
- ♦ 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).