

# ***MÄK Stealth 6.0 Release Notes***

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This document provides the following release-specific information for MÄK Stealth 6.0:

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## **Systems Supported and System Requirements**

This section describes platform support and system requirements for the MÄK Stealth. 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>.

The Stealth is available for the following operating systems:

Table 1-1: Platforms supported

| Operating System                       | Compiler                 | glibc |
|----------------------------------------|--------------------------|-------|
| Red Hat Enterprise Linux Workstation 3 | GNU C++ (GCC) 3.2.3      | 2.3.2 |
| Red Hat Enterprise Linux Workstation 4 | GNU C++ (GCC) 3.4.4      | 2.3.4 |
| Windows 2000 SP2, XP                   | Microsoft Visual C++ 7.1 |       |

### **Stealth for Windows**

The Stealth for Windows requires the following:

- A Pentium-class PC (or higher) with minimum 1GHz processor
- An OpenGL 1.2-compliant graphics card.
- Windows 2000 SP2, Windows XP.
- 1 GB of disk space.
- 512 MB of RAM; up to 2 GB is desirable depending on the size of the terrain database and the number of models to be loaded.

### **Compiler Compatibility on Windows**

The HLA versions of the Stealth must run with an RTI compiled with Visual C++ 7.1.

### **Requirements for Creating Plug-Ins Using the Stealth Control Toolkit**

To create a Stealth plug-in or use the Stealth Control Toolkit, you must install VR-Link 3.9.6 for Visual C++ 7.1. See the *VR-Link Release Notes* for compiler requirements for your operating system.

### **Vega Prime Compatibility**

Stealth 6.0 was built with Vega Prime 2.0.

### **3D Video Boards Supported**

In general, Stealth 6.0 should support any board that claims to support OpenGL 1.2. The Stealth has been tested with NVidia GeForce graphics cards.

## Java Support for the Model Mapper

The Model Mapper is a Java application. To use it, you must install Java 1.4.1 or later.

## Network Compatibility

### *HLA only*

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Stealth 6.0 was built against VR-Link 3.9.6 and is compliant with:

- ♦ RPR-FOM 1.0 and a subset of 2.0 (draft 6, 14, and 17)
- ♦ MÄK RTI 3.0.

### *DIS only*

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Stealth 6.0 supports DIS 2.0.4, IEEE 1278.1, 2.1.4, and IEEE 1278.1a, and can therefore interoperate with DIS applications of any of these versions.

## FOM Support

Stealth 6.0 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, Stealth 6.0 uses RPR FOM 1.0.

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

For information about FOM mapping and specifying the FOM version to use, see *MÄK Stealth User's Guide*.

## MÄK Terrain Database Tool Support

The Stealth includes the MÄK Terrain Database Tool (TDB Tool), a utility that you can use to convert various database formats to MÄK Terrain Format (GDB) for loading in the Stealth. The Stealth does not support the following features in the TDB Tool:

- ♦ Feature or vector support (DFAD/DFD/Shape).
- ♦ Multiresolution paper maps or tiled paper maps. (Only single images can be displayed).
- ♦ GDB soil types and polygon colors are ignored.
- ♦ Extent MAP files.
- ♦ Qt images files from MAP files.
- ♦ RpfPaperMapRecord records.
- ♦ Geodetic or geocentric GDB databases.

## ***New Features and Product Updates***

Stealth 6.0 has the following new features and updates:

- ♦ The Stealth Toolkit API.
- ♦ Documentation for the Stealth Remote Control API.
- ♦ Display of detailed rendering statistics.
- ♦ Display of network connection information.
- ♦ Orthographic Pivot view mode has been replaced with an orthographic view that uses pivot mode. It is no longer a top-down view.
- ♦ Many Stealth options can now be enabled and disabled by clicking icons on tool-bars.
- ♦ The menu bar is no longer a toolbar.
- ♦ Command-line options have been updated and changed.
- ♦ Configuration files and parameters have been changed.
- ♦ The Stealth no longer restricts saved view files to either DIS or HLA. Because saved views now include marking text, it is possible to associate a saved view file with a particular simulation. As long as the marking text for objects stays constant, the saved views will work for successive runs of the simulation regardless of the protocol used.
- ♦ You can now attach to entities from the Object Hierarchy using Shift-Click. This means that Shift-Click no longer is used for multiple selection in the list.
- ♦ By default, detonation terrain hits are ground clamped. This feature can be enabled or disabled in *params.mtl* with the `groundClampDetonationTerrainHits` parameter.
- ♦ A heading, scale, and offset can be specified for models from *ModelMap.mtl*.

## The Stealth Toolkit API

The Stealth Toolkit API exposes the headers and libraries used to build the Stealth and StealthXR. While the Plug-in API only allows you to extend the 3D visuals and control the eyepoint, the Toolkit API exposes all of the Stealth's features. With the toolkit, you can:

- ♦ Visualize new types of remote data
- ♦ Modify and extend the Stealth's features and GUI
- ♦ Support new terrain formats
- ♦ Embed the Stealth into another application.

The Stealth uses Vega Prime for rendering and VR-Link for networking. Because the Stealth Toolkit API relies on Vega Prime and VR-Link, you must have a Vega Prime Developer's license, and a VR-Link Developer's license to use the Stealth Toolkit API. You can purchase a Vega Prime Developer's licenses from Multigen-Paradigm, Inc. To purchase a VR-Link Developer's license, contact your MÄK Technologies salesperson.

For details, see Chapter 13, *The Stealth Toolkit API*, in *MÄK Stealth User's Guide*.

## Displaying Stealth Statistics

The Stealth can now display detailed information about the graphics in the scene and how much time is used for the three stages of graphics presentation in a frame loop. The three stages are as follows:

- ♦ Application: The Stealth updates its state.
- ♦ Cull: The Stealth prunes graphic information that will not be drawn.
- ♦ Draw: The Stealth draws the information to the scene.

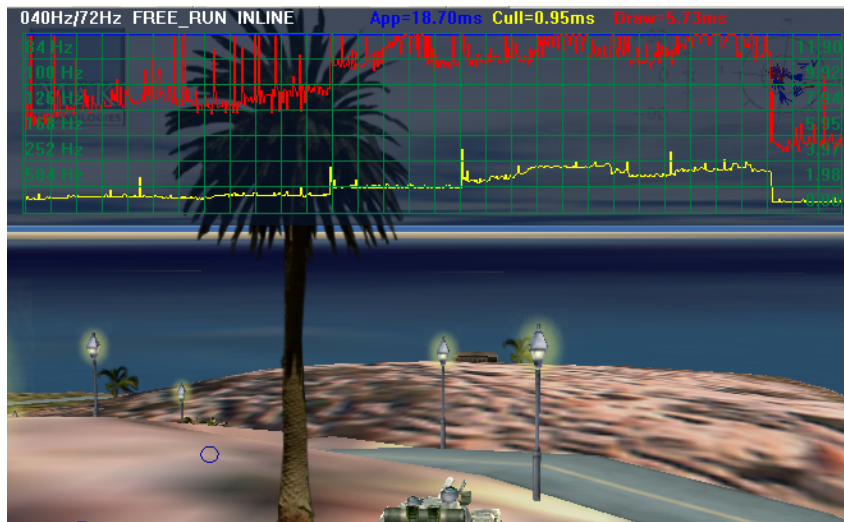


Figure 1. Graphics pipeline statistics overlay

## Displaying Connection Information

The Stealth now displays information about your network connection in the Connection Information dialog box. You cannot edit the Connection Information dialog box. It displays the configuration used to connect to the network when the Stealth started up.

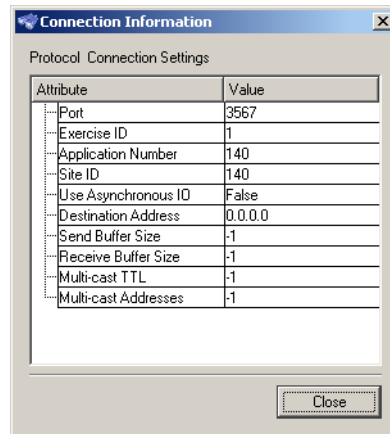


Figure 2. Connection Information dialog box (DIS)

## Changes to Command-Line Options

The following changes have been made to the Stealth's command-line options:

- Multicharacter command line arguments are now prepended with `--`.
- The `-N` command-line option has changed to `--noDefaultMtl`
- The `-v` command-line option has been replaced with `--disVersion`
- The `-B` command line option for setting socket buffer sizes has been split into two arguments, `--recvBufferSize` and `--sendBufferSize`.

## Changes to Configuration Files

The following changes have been made to the Stealth's configuration files:

- MTL configuration parameters begin with a lower case letter.
- Configuration files for loading terrain have been moved to `./data/terrain`.
- The parameters that were in `colors.mtl` have moved to `params.mtl`. The `colors.mtl` file is no longer used.
- The `rangeRings.mtl` file is now `rangeRingsMap.mtl`.

## Documentation Updates

*MÄK Stealth User's Guide* has been updated for this release.

## Fixed Bugs

This release fixes the following bugs or restrictions that were present in Stealth 6.0:

- ♦ Drag and drop of the Stealth icon from VR-Forces now works for tether mode.
- ♦ Speed and moving is now working correctly when the dead reckoning algorithm is static.
- ♦ Setting a model scale from *ModelMap.mtl* now works in StealthXR.
- ♦ The UTM origin was not set correctly when the header node included a non-zero zone.
- ♦ The orientation of range volumes is now set correctly

## Known Problems and Product Restrictions

- ♦ If you have sound enabled and your PC does not have a sound card, the Stealth may crash. Under some circumstances, even with a sound card, enabling sound make cause instability.
- ♦ By default, the Stealth loads terrains in a separate thread (asynchronous loading.) Sometimes, this load fails, even though the terrain paths are correct. To work around this problem, load terrains synchronously. Add the following line to the terrain's configuration file:  
(setq loadAsynchronous 0)

Synchronous loading is often faster than asynchronous loading. However, during synchronous loading, the Stealth interface freezes until the terrain finishes loading.

- ♦ Tracked billboard models sometimes do not load.
- ♦ Inset views must be disabled to load LADBM. If the Stealth detects a MetaFlight database in its ACF file, it disables inset windows for entities.
- ♦ If you try to use *vaportrail.flt* or *dusttrail.flt*, they do not rotate properly. Entity trails configured in the ACF file work correctly.
- ♦ You cannot select an emitter system from the 3D view.
- ♦ Sound is not supported on Linux.
- ♦ BMP textures in MAP files are not supported.
- ♦ You cannot load OpenFlight files directly on Linux. You must load them through ACF, MAP, or MTL files.
- ♦ In the Plug-in API, RotOffset() is not supported in *DtModel*.
- ♦ If saved views become invalid, no errors are reported. Saved views may become invalid if the view's attached entities do not exist.

- ♦ Terrain may disappear when selecting a preset view. There are two possible causes for this problem: either the terrain's lowest LOD has no geometry or the terrain does not fit in the current viewing frustum. To work around the problem, try setting the LOD scale to something small (for example, 0.1) and try increasing the far clipping plane. Clouds and fog effects may hide the terrain when zoomed far out.
- ♦ Game controllers, such as joysticks, are not supported on Linux.
- ♦ Stealth licensing does not work in some cases. When running Stealth it is possible to encounter an error regarding a missing `vsg_rtl` license. This error occurs when Stealth is installed as one user, but run as an other user having different file permissions (for example, users belonging to different domains or having insufficient file privileges will not be able to run).
- ♦ Stealth crashes on close when using vpDiGuy with an invalid DI-Guy license.
- ♦ DI-Guy characters do not display color correctly for selection and XR mode. Selecting one DI-Guy character will color all DI-Guy characters having the same model. In XR mode, if the same model is used to represent friendly, opposing, or neutral entities, all entities will share the same color.
- ♦ With delayed model loading on, models may not always be visible in inset views.
- ♦ Stealth cannot load MAP files with tiled image sets.
- ♦ Stealth cannot load PNG images as part of a MAP file.
- ♦ In XR mode, the time of day may switch to night when loading a terrain. The time of day can be reset from the preferences dialog (under environment).