



VR-Vantage Stealth

First Experience

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VR-Vantage Stealth First Experience

Thank you for deciding to try out VR-Vantage. VR-Vantage Stealth provides traditional 2D tactical maps and 3D perspective scenes for viewing the virtual battlefield, along with an exaggerated reality (XR) common operational picture.

This first experience with VR-Vantage Stealth will be a quick guided tour of some its most important features. To get the full experience you will need:

- ♦ VR-Vantage Stealth
- ♦ MAK Data Logger.

Before you begin, install and license the software. Please see [“Install VR-Vantage and Supporting Applications and Data,”](#) on page 40 for instructions.

When you are ready, this guide will help you:

- ♦ [Explore the Terrain](#)
- ♦ [View a Simulation](#)
- ♦ [Attach the Observer to Entities](#)
- ♦ [Manipulate Objects in the Scene](#)
- ♦ [Explore Sensors](#)
- ♦ [Explore Dynamic Ocean](#)
- ♦ [Explore the Plan View Observer Mode](#)
- ♦ [Explore Model Sets and Model Scaling](#)
- ♦ [Explore Streaming Terrain](#)
- ♦ [Continue to Explore VR-Vantage.](#)

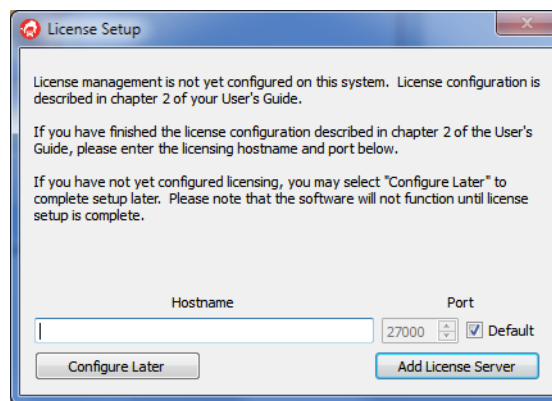
VR-Vantage is part of MÄK’s VR-Vantage product line. VR-Vantage is built using the VR-Vantage Toolkit. Using the toolkit, developers can extend the capabilities of our applications and can create entirely new applications. For more information, please read developer documentation, which is in `./doc/classdoc/index.html`.

1. Start VR-Vantage

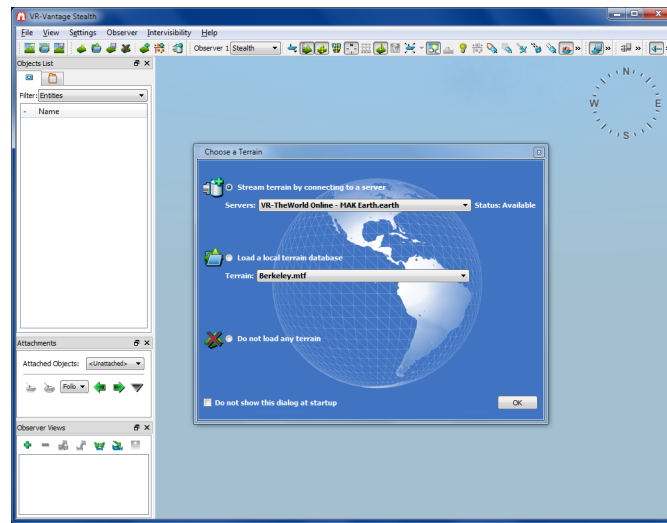
- On the Start menu, choose **Programs** → **MÄK Technologies** → **VR-Vantage 1.6** → **VR-Vantage Stealth**. VR-Vantage starts up. (The first time you run VR-Vantage, you will have to specify the license server.)

1.1. Specify the License Server

The first time you run a MÄK application on a computer, the License Setup dialog box opens. It prompts you to enter the hostname of the license server and optionally, a port number.



1. Type the hostname in the Hostname box. This is the name you gave your salesperson when you requested the license file. (For details, please see (Section B.1, [“Identify the Host ID and License Server Name”](#).)
2. Click Add License Server. VR-Vantage starts. The Choose a Terrain window opens on top of the main window. It lets you immediately connect to a terrain server, load a local terrain, or decide not to load a terrain.

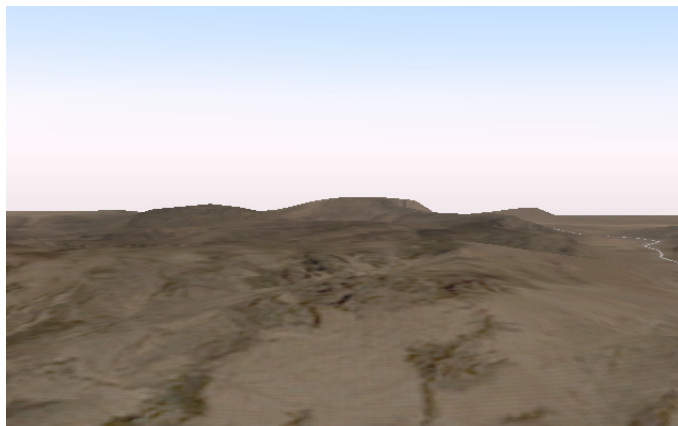


When you start VR-Vantage, if you receive the following message, it means that you did not install the data package:

Data package not found in specified data directory:
'c:\MAK\vrvantagel.6\data'.
Please make sure the data package is installed.

VR-Vantage has an application installer and a data installer. You must install both of them.

3. Select Load a Local Terrain Database.
4. In the list, select *VR-Village_NoSpeedTrees.mtf*.
5. Click OK. The VR-Village terrain loads. If the view does not look like the following illustration, press the **Spacebar**.



2. Explore the Terrain

The observer is your viewpoint into the terrain. You can navigate through the terrain using the keyboard and mouse. This section introduces the basic keyboard and mouse actions. For a complete list, please see online help or the Quick Reference Card in *VR-Vantage Users Guide*.

1. Hold down the **e** key. This drops the observer down into the village.



2. Hold down the **s** key to back through the village towards the entrance road. If the observer stops moving, it may be blocked by a building or terrain. Press **q** to raise the observer a bit.
3. Experiment with keyboard and mouse control of the observer as described in the next few sections.

Notice that as you move backward and forward in the terrain, objects get added to the terrain or removed. To help improve performance, distant objects are hidden or displayed at lower levels of detail (LODs).

2.1. Use the Game-like Keyboard Navigation

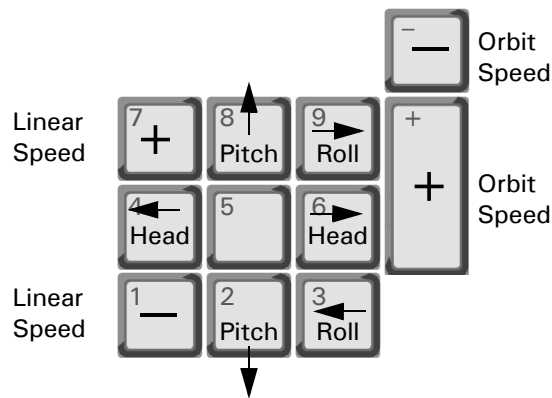
Press **w** and **s** to move forward and backward.
Press **q** and **e** to move up and down. Press **a** and **d** to move left and right.

Press multiple keys to combine movement modes. Notice that you cannot go through walls or through the ground — unless you want to.
Press and hold **x** while moving the observer and you can go through walls and terrain.



Press the **Spacebar** to move the observer to the default starting point.

The keypad lets you control position and orientation.



2.2. Use the Mouse to Move the Observer

Moving the observer with the keyboard often works best for fine movement in small areas when the observer is close to the terrain. Moving with the mouse is better for larger distances when the observer is away from the terrain.

2.2.1. Drag the Terrain

Dragging the terrain moves the observer forward, backward, left, and right.

1. Click a point on the terrain and hold down the left mouse button.
2. Drag the mouse left, right, forward, and backward.

2.2.2. Drag the View

Dragging the view moves the observer up, down, left, and right.

- Hold down the middle mouse button (or wheel) and drag the mouse.

2.2.3. Change the Observer's Orientation

- Hold down the right mouse button and drag the mouse.

2.2.4. Teleport the Observer

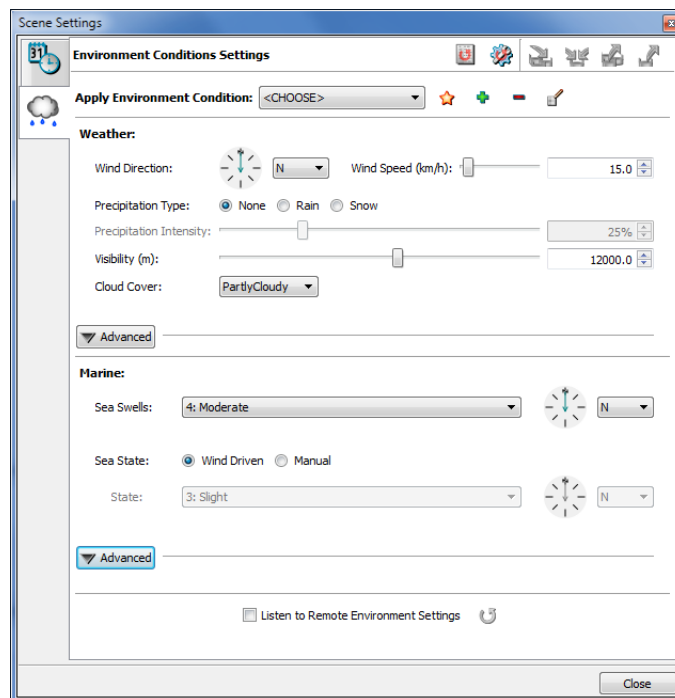
- **Shift**+click someplace on the terrain to jump to the location.

2.3. Change the Environment

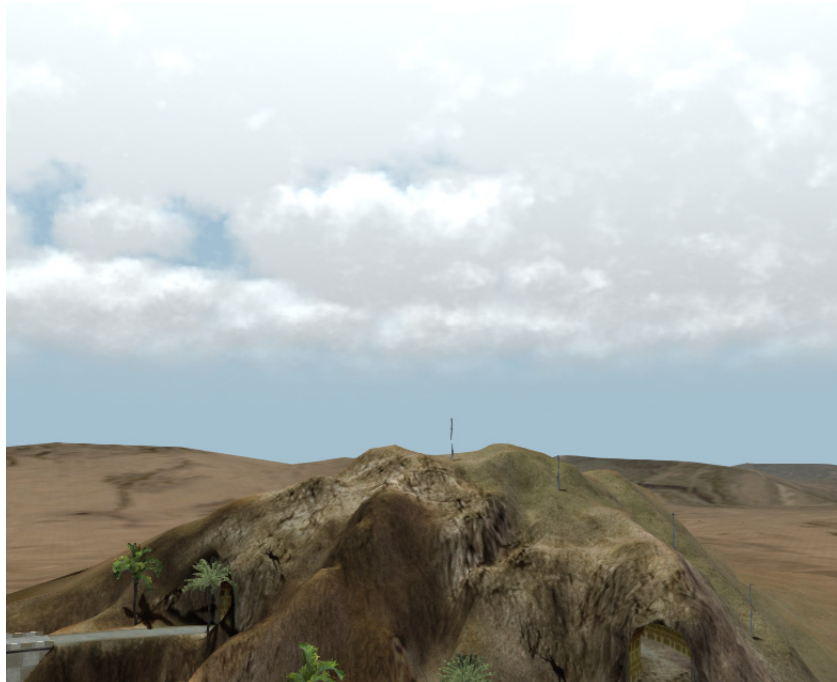
VR-Vantage lets you manipulate the environment. You can apply preconfigured environment conditions and can change the specific environment conditions. This just affects how the scene looks. It does not affect the simulation you are viewing.

2.3.1. Apply an Environment Condition

1. Choose **Settings** → **Scene**. The Scene Settings dialog box opens.
2. Select the Environment Conditions Settings page.



3. In the Apply Environment Condition list, select a condition, such as Mostly Cloudy. The cloud cover changes.



2.3.2. Make it Rain and Snow

1. For Precipitation Type, select Rain. It starts to rain.

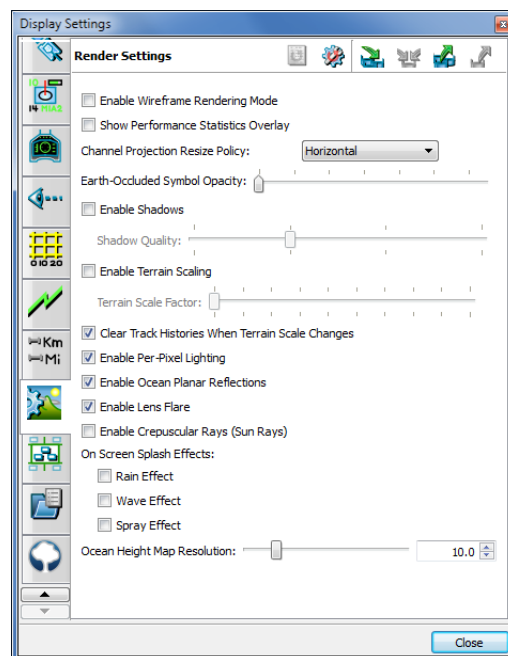


Figure 1.

2. Select the Rain Effect check box. Rain drops start to gather on the observer's camera lens.



3. Turn off the rain effect and close the Display Settings dialog box.
4. On the Scene Settings dialog box, change the Precipitation Type to Snow.



5. Adjust the Precipitation Intensity slider.
6. Change the wind direction and wind speed and see how it affects precipitation.
7. Set the Precipitation Type to None.

2.3.3. Change the Time of Day

1. Select the Date and Time page.
2. In the Time group box set the Current Time. See how the lighting changes as you change the time.



5:15 A.M., June 1



11:15 A.M., June 1

3. Click Close.

2.4. Save the Scene

1. Choose **File** → **Save Scene**. The Save Scene dialog box opens.
2. Type a name for the scene.
3. Click Save.

3. View a Simulation

To view a simulation, you must load an appropriate terrain and connect to the simulation network. In this guide we assume that you have the MÄK Data Logger and the recorded simulations that it includes. However, if you want to view your own simulation data, feel free to use it instead of the suggested files.

3.1. Connect to a Simulation Network

1. Choose **Settings** → **Connection**. The Simulation Connections dialog box opens.
2. Select the DIS Connections page (Figure 2).

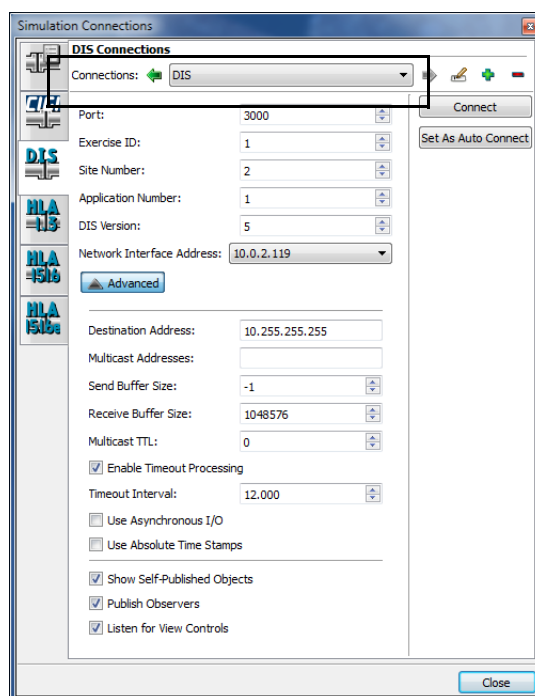


Figure 2. DIS Connection

3. In the Connections drop-down list, select DIS.
4. Click Connect.
5. Click Close.

3.2. Load the Terrain

If you have not already loaded the VR-Village terrain, as explained in “[Start VR-Vantage](#),” on page 2, load it now.

1. Choose **File** → **Open Terrain**. The Open Terrain dialog box opens.
2. Select *VR-Village_NoSpeedTrees.mtf*.
3. Click Open. In a few seconds, the terrain is displayed.

3.3. Start the Logger and Play a Simulation

1. On the Start Menu, choose **Programs** → **MÄK Technologies** → **Logger X.X** → **Logger DIS**. The Logger starts.
2. Choose **File** → **Open**. The Open File dialog box opens.
3. Select *VR-Village-CarBombDemo-v3-DIS.lgr*. (If you are using Logger 4.3 or earlier, load *VR-Village-CarBombDemoDIS.lgr*.)
4. Click Open.
5. Choose **Play** → **Toggle Loop at End**. This will cause the recording to continuously loop back to the beginning when it reaches the end.
6. Choose **Play** → **Play/Pause**, or click the Play button.

3.4. View the Simulation

VR-Vantage will take a few seconds to load model files. Then it will start to display the action in this simulation. The Logger file sends view control messages to VR-Vantage to control the observer. Watch the simulation for a while. When you are ready to explore the simulation on your own, disable view controls.

3.4.1. Disable View Controls

1. Choose **View** → **Observer Control Panel**. The Observer Control Panel gets added to the set of panels on the left side of the window.
2. On the Observer Control Panel, clear Accept View Controls (Figure 3). Now, VR-Vantage will not respond to newly received view controls.
3. If the observer is attached to an entity, on the Attachments Panel, click the Detach icon (Figure 3). The observer stops following the entity to which it was attached.

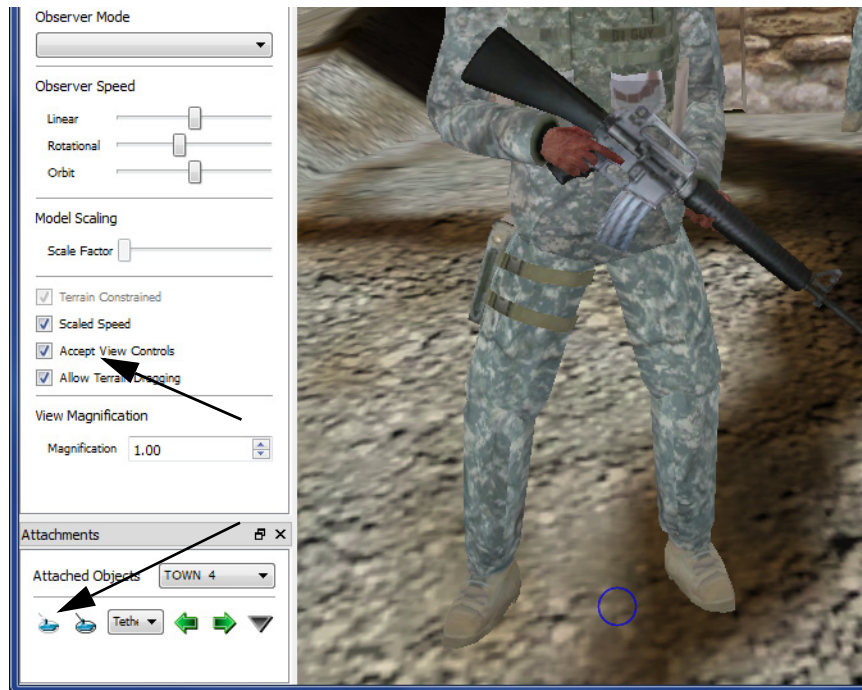


Figure 3. View control and attachment management

Use the navigation controls you learned earlier to navigate through the village and watch the simulation from the viewpoints that interest you.

3.4.2. View Entity Information

Entity labels mark an entity's location and provide detailed information about it.

1. Look at an entity. If it does not have a small circle on it (an entity label), choose **Settings** → **Entity Labels**. Entity labels are displayed for each entity.
2. Move the mouse cursor over an entity label. A panel displays entity details, as shown in the illustration.



3. Zoom out from the terrain so that you can no longer easily see individual entities. You can still tell where they by looking at the entity labels.

3.4.3. View Track Histories

1. Press the **s** key to zoom out a bit from the village.
2. Choose **Observer** → **Track Histories**.

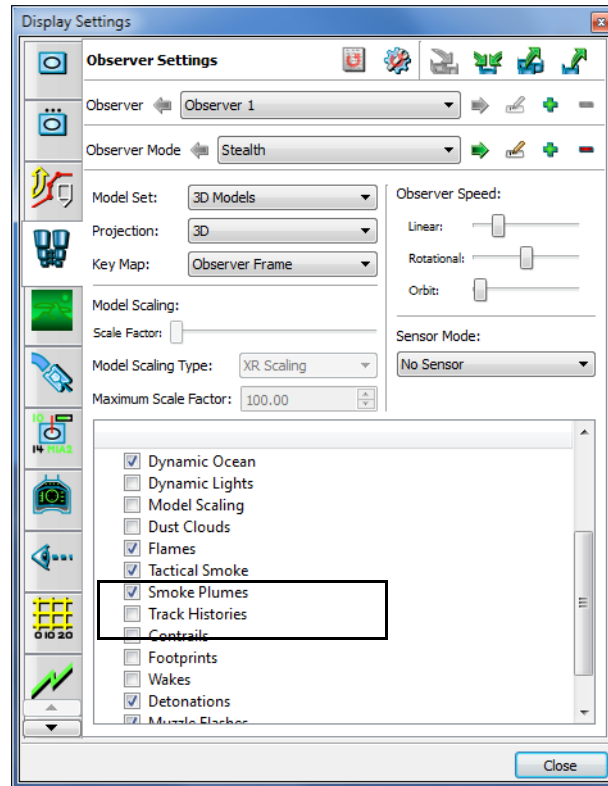
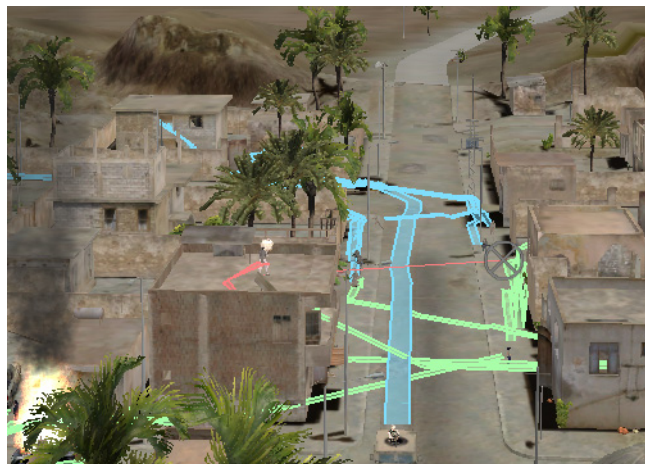
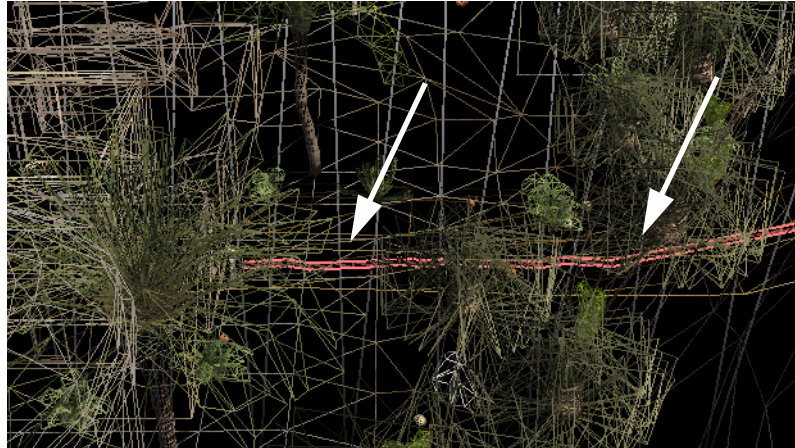


Figure 4. Observer Settings page

3. As entities move notice that they leave a track showing their path.



4. Choose **Settings** → **Wireframe Rendering**. The VR-Village terrain has underground passages. If entities are currently moving through the passages, you can see their track history.



5. Turn off Track Histories and Wireframe Rendering.

4. Attach the Observer to Entities

So far, you have moved the observer through the scene to observe entities and you have seen the view change as the result of view control messages. Those view control messages were moving the observer to static locations or attaching the observer to entities so that it moved with them. You can also attach the observer to entities manually.

1. In the Objects List Panel, right-click UtilRW 2. A popup menu is displayed.
2. Choose **Attach Follow**.
3. Press **Spacebar**. This puts the observer in the default position relative to the entity. It is now attached to the helicopter and is located to its rear. As the helicopter moves, the observer will move with it. You can change the position and orientation of the observer with the keyboard and mouse controls you learned earlier, but it will maintain its relationship with the helicopter and move through the scene as the helicopter moves.



The helicopter does not start moving until about 1:30 minutes into the recording. If it is not moving, click some place in the Logger timeline after the 1:30 mark.

4. Press . (period). The attachment moves to the next object in the Objects List Panel.

5. Continuing attaching to additional entities.
6. Press **z** to detach the observer.

4.1. Attach to an Entity that has a Cockpit Display

VR-Vantage is based on OpenSceneGraph (OSG), so developers can integrate third-party modules that are built on OSG. GL Studio, from DiSTI, is an application for building cockpit displays (also called heads-up displays, or HUDs). VR-Vantage includes a set of these displays for different vehicle types.

1. In the Objects List Panel, right-click UtilRW 2. A popup menu is displayed.
2. Choose **Attach Mimic**. The observer attaches to the helicopter and its cockpit is displayed.



3. To see other cockpit displays, attach to SmWhel 1 and CivVeh 1 in Mimic mode.
4. Press **z** to detach the observer.
5. Stop the Logger.

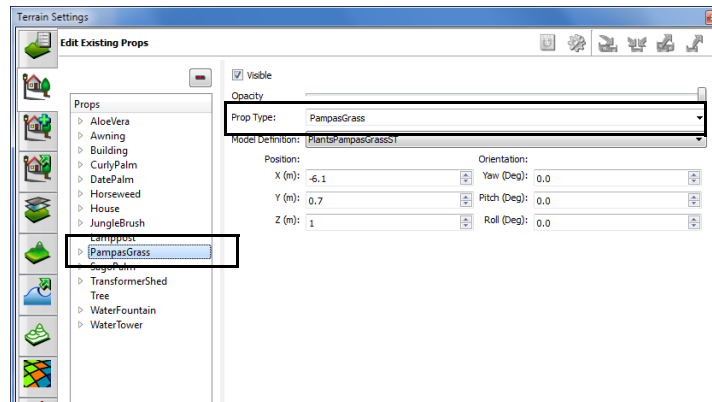
5. Manipulate Objects in the Scene

VR-Vantage lets you add value to terrains, even if you did not originally create them. In this exercise you will replace low fidelity models with high fidelity models. The *VR-Village_NoSpeedTrees.mtf* terrain uses low-fidelity models for trees and other vegetation. We will replace some of these models with SpeedTree models.

1. If the Logger is running, stop it.
2. If *VR-Village_NoSpeedTrees.mtf* is not loaded, choose **File** → **New Terrain**. Then open *VR-Village_NoSpeedTrees.mtf*.
3. Press **z** to make sure the observer is not attached to any entities.
4. Press the **Spacebar** to return to the default view of the terrain.
5. Press **e** until the observer stops at the ground. You will be looking at a portion of VR-Village similar to the following illustration.



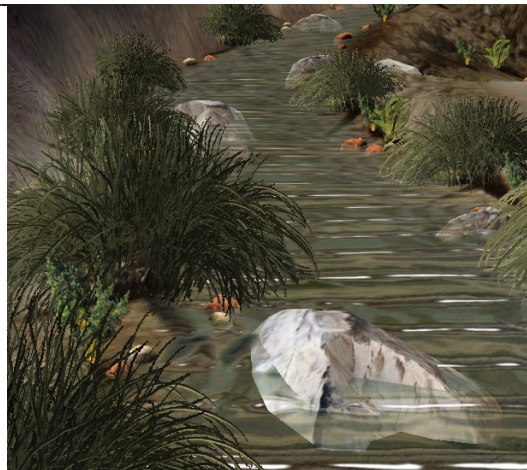
6. Choose **Settings** → **Terrain**. The Terrain Settings dialog box opens. (You might need to pull it to the side to see the terrain.)
7. Select the Edit Existing Props page.



8. In the Props list, select PampasGrass. Bounding boxes are displayed around the grass objects. You might want to zoom out and up a little to see more of them.
9. In the Model Definition field, select PlantsPampasGrassST. This replaces the rigid low fidelity model with a SpeedTree model that sways in the breeze. See how much better the grass looks.



Before



After

10. Close the Terrain Settings dialog box.

5.1. See Through Walls

You can control the transparency of walls so that you can see inside buildings.

1. In the VR-Village terrain, click a building to select it.
2. Right-click. A pop-up menu is displayed.
3. Choose **Make Transparent**. The walls become approximately 80% transparent.
4. Choose **Settings** → **Terrain**. The Terrain Settings dialog box opens.
5. Select the Edit Existing Props page. Note that the building you selected is highlighted in the Props list. Also note the setting for the Opacity slider.
6. Move the slider to increase or decrease the transparency of the building.
7. Close the Terrain Settings dialog box.

6. Explore Sensors

VR-Vantage Stealth can simulate the way that the 3D scene would look if an observer were using visual sensor devices such as night vision goggles or viewing the infrared spectrum. This is an observer-specific setting. You can adjust the contrast, blur, and noise of the view.

VR-Vantage includes one sensor module – CameraFX, which uses the SenSim libraries from JRM Technologies. The sensors do not take into account the materials of the objects that you are viewing. They simply filter the view to produce the desired effect. If you want physics-based sensor effects, you may want to try the SensorFX Plug-in to VR-Vantage, developed by JRM. For details, please contact your MÄK salesperson.

1. In VR-Vantage Stealth load the VR-Village terrain.
2. In the Logger, open *VR-Village-CarBombDemo-v3-DIS.lgr* and run it as described previously.
3. Navigate to the road that enters the village in the Northeast corner. Pause the Logger recording at around 50 seconds. The scene looks similar to [Figure 5](#):



Figure 5. VR-Village, no sensor

4. Choose **Settings** → **Display**. The Display Settings dialog box opens.
5. Select the Observer Settings page. Notice that the Sensor Mode is No Sensor (Figure 6).

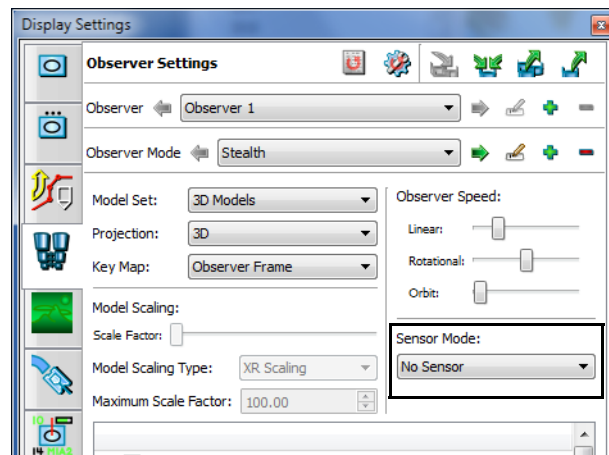


Figure 6. Sensor mode

6. Change the Sensor Mode to IR. See how the view of the scene changes.



Figure 7. VR-Village, IR sensor

7. Choose **Settings** → **Scene**. The Scene Settings dialog box opens.
8. Select the Date and Time page.
9. Change the time to 9 PM.
10. In the Observer Settings page, change the sensor to NVG. See how the scene changes. For comparison, change the sensor to No Sensor and see what the scene looks like to the naked eye.
11. In the Display Settings dialog box, select the Sensor Settings page ([Figure 8](#)).

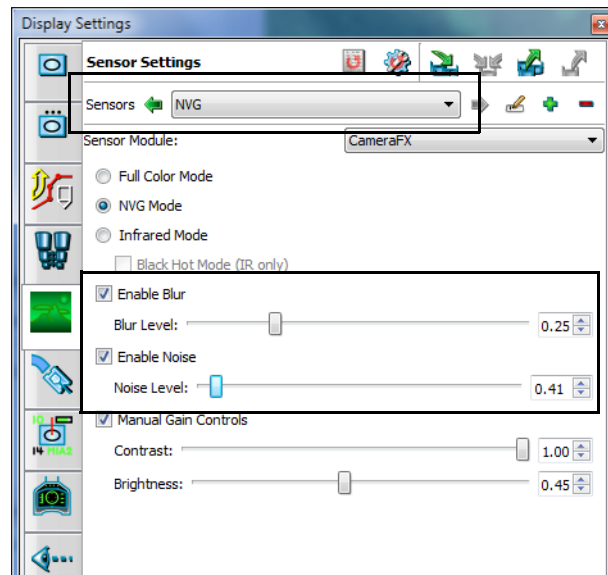


Figure 8. Sensor Settings

12. In the Sensors list, select the current sensor (NVG).
13. Experiment with changing the settings for blur and noise.

7. Explore Dynamic Ocean

VR-Vantage Stealth can simulate ocean waves and swell states and has additional lighting effects that show reflections on the water.

1. Open the Makland terrain.
2. In the Logger, open the *maklanddemoDIS.lgr* file and run it.
3. Attach the observer to the entity Surface 1 and rotate so the view is similar to [Figure 9](#).



Figure 9. Dynamic ocean - clear weather condition

4. Choose **Settings** → **Scene**. The Scene Settings dialog box opens.
5. Select the Environment Conditions Settings page.
6. Select some of the different environment conditions and see how the ocean changes.



Figure 10. Dynamic ocean - stormy weather condition

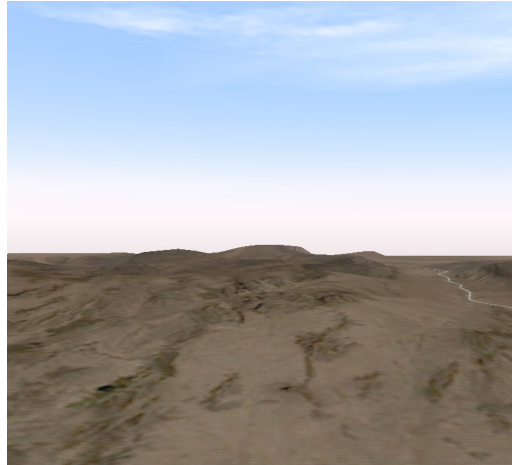
7. Apply the Clear environment condition.
8. In the Marine section of the Environment Conditions Settings page, set the Sea State to Manual.
9. Select different options from the State list and see how the sea state changes.

8. Explore the Plan View Observer Mode

So far, we have been exploring VR-Vantage Stealth in its 3D projection. Now we will explore the 2D plan view mode.

8.1. Change the Observer Mode

1. Press the **Spacebar** to return to the default view of the terrain.



2. Choose **Observer** → **Set Observer Mode (Observer 1)** → **Plan View**. The projection changes to a plan view (2D).



8.2. Navigate the Plan View

The Plan View mode uses the same keyboard and mouse navigation as Stealth mode, except that you are restricted to 2D movement. Press **w** and **s** to move up and down. Press **e** and **q** to zoom in and out. Press **a** and **d** to move left and right. Press multiple keys to combine movement modes.



In Plan View observer mode, the altitude of the observer is fixed. When you zoom in and out, the altitude is not changing; the extents of the visible database and the resolution change.

The Left Arrow and Right Arrow keys rotate around the center point. Press the **Spacebar** to move the observer to the default starting point.

Drag the terrain with the left mouse button. Zoom in and out with the scroll wheel. Rotate with the right mouse button. (To rotate the view, disable Orient North on the Observer menu or Observer Settings Toolbar.)

8.3. View 3D and 2D Together

VR-Vantage applications can display multiple windows. Each window has its own observer. The projection used in a window is a property of the observer, so you can set the observer mode individually for each window you have open.

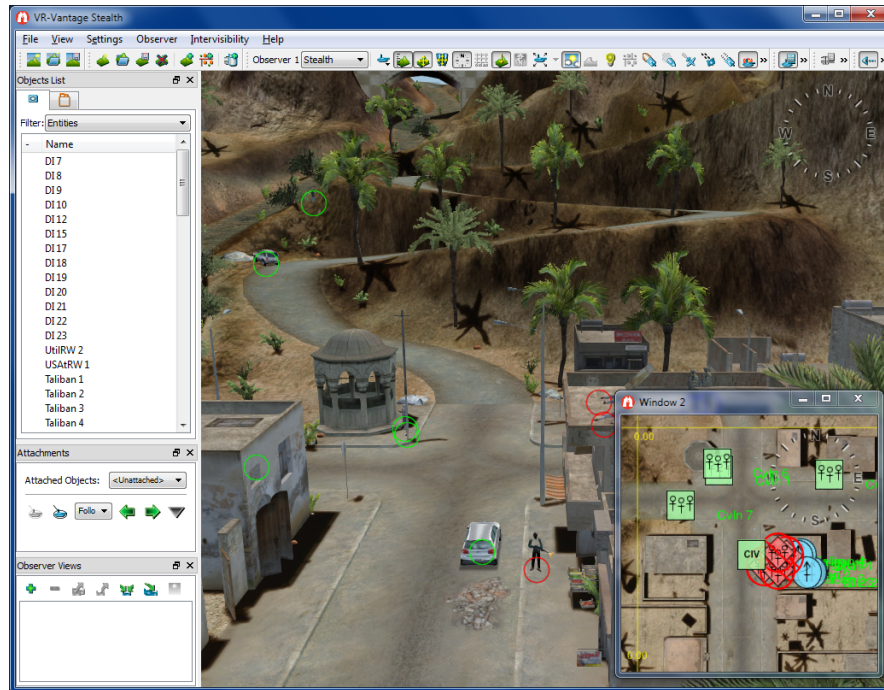
1. Choose **Observer** → **Set Observer Mode (Observer 1)** → **Stealth**. (This is to get the main window back into Stealth observer mode.)
2. Press **Spacebar**. This returns the observer to the default position.
3. Press the **e** key to drop the view down into the village.
4. Choose **File** → **New Plan View Window**. A new window opens. It is titled Window 2. Notice that it uses the Plan View observer mode.



5. Click in the Plan View window to make it active. Notice that the observer on the Observer Settings Toolbar changes from Observer 1 to Observer 2.
6. Navigate through the terrain. You might want to press **e** to zoom in. Changing the observer's location in this window does not affect the observer in the main window.
7. Choose **Observer** → **Set Observer Mode (Observer 2)** → **Stealth**. The window now uses a 3D projection. You may need to press the **Spacebar** to reset the view.
8. Practice switching between the two windows and changing the observer modes.

8.4. View the Simulation in Stealth and Plan View Observer Modes

Set the main window to Stealth observer mode and Window 2 to Plan View observer mode. In the Logger, start playing the simulation again. View it in the 2D and 3D views.



Navigate the simulation as desired. The different projections have different visual effects.

1. Click in the window that is using Stealth observer mode.
2. Look at the Observer menu and see the list of visual effects that you can turn on and off. Notice that 2D effects such as grid lines and orient North are disabled.
3. Click in the window that is using Plan View observer mode.
4. Look at the Observer menu. The 3D visual effects are not available. Only effects that make sense for a 2D view are available.

8.4.1. Change the Icon Size

You can change the size of 2D entity icons. When there are many entities in a scene, reducing icon size reduces overlap of the icons and gives a better sense of their location.

1. Choose **Settings** → **Display**. The Display Settings dialog box opens.
2. Select the Entity Display Settings page (Figure 11).

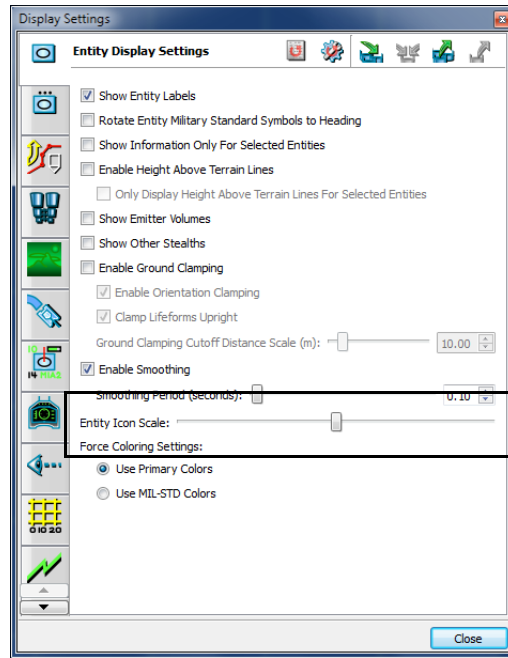


Figure 11. Entity Display Settings page

3. Adjust the Entity Icon Scale slider to increase or decrease the size of the icons.

9. Explore Model Sets and Model Scaling

By default, the Stealth observer mode uses realistic, textured, 3D models. These models are collectively known as the 3D Models model set. However, VR-Vantage has other model sets (you used the 2D Icon model set when you switched to Plan View observer mode in the previous section) and it also lets you scale the models so that you can see them when the observer is too far away to see realistically scaled models.



A model set is just a set of models of a particular type or style.

To set up VR-Vantage for this section:

1. Choose **File** → **New Terrain**.
2. Open the *SanLuisObsipo.mtf* terrain (as explained in “[Explore the Terrain](#),” on page 4).
3. If VR-Vantage is not connected to the network, connect to the DIS network (as explained in “[Connect to a Simulation Network](#),” on page 10).
4. Turn off view controls (as explained in “[Disable View Controls](#),” on page 12).
5. In the Logger, load *IISEC_VPMM_Demo_Final.lgr* and play the recording (as explained in “[Start the Logger and Play a Simulation](#),” on page 11).



The scenario for this part of the evaluation was made with high fidelity air combat models plugged into VR-Forces, MÄK’s computer generated forces product. In this scenario, a friendly fighter (GenFLT 1) is escorting a cargo plane (C-130 1). Two opposing force fighters (FtrFW 1 and FTRFW 2) threaten the convoy. The fighters engage and GenFLT 1 shoots down the opposing fighters. Several minutes later, GenFLT 1 launches flairs in response to an attack from a surface-to-air missile battery (SAM 1).

6. If entity labels are not enabled, choose **Settings** → **Entity Labels**.
7. If you are not using Stealth observer mode, choose **Observer** → **Set Observer Mode (Observer 1)** → **Stealth**.
8. Press **Spacebar**.

9.1. Scale the Models

Figure 12 shows the default view of the San Luis Obispo terrain at the starting point of the Logger recording. Although the entity labels indicate that there are entities present, you really cannot see any of them clearly because they are scaled to the terrain and the observer is too far away to make out details.



Figure 12. San Luis Obispo, entity labels visible

1. In the Objects List Panel, right-click GenFlt1 and choose **Attach Tether**. Now, you can see the entity to which you are attached, but you still cannot see the distant entities except as entity labels (Figure 13). To remedy this problem we can use the XR observer mode and VR-Vantage's model scaling feature – we can exaggerate reality.



Figure 13. Attached to GenFlt 1

2. Choose **Observer** → **Set Observer Mode** → **XR**, or select XR on the Observer drop-down list on the Observer Settings toolbar. Notice that you can now see models for the red aircraft ([Figure 14](#)). (You might need to adjust the orientation of the observer a bit to see the red aircraft.) By default, XR observer mode uses 3D colorized models and enables model scaling. Colorized models are not realistic, but they stand out from the background. Combined with model scaling, they become highly visible.

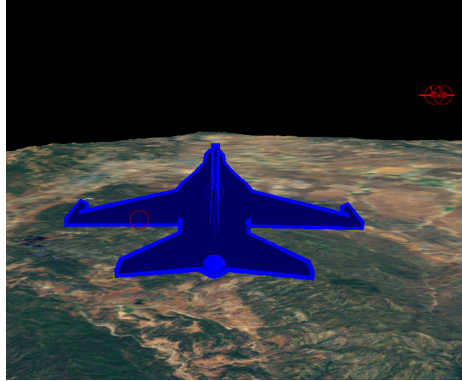
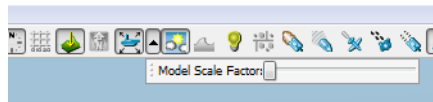


Figure 14. 3D Colorized Models

3. Click the the Enable Model Scaling icon (🔍 -) on the Observer Settings toolbar.
4. Click the down arrow next to the icon. The Model Scale Factor slider is displayed.



5. Slide the control to the right. The size of the models increases, as shown in [Figure 15](#). Compare it to [Figure 14](#). Note that while the red entities are quite a bit larger, the blue jet has not changed its size very much. Scaling of entity models is influenced by their distance from the observer. Models that are close to the observer might not be scaled at all.

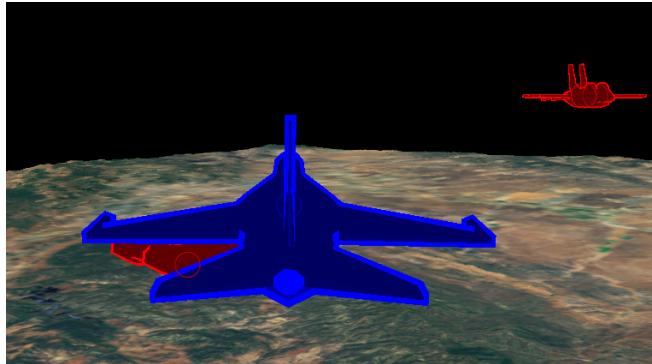


Figure 15. 3D Models, scaled

6. Experiment with adjusting the scale factor. Move the observer and see how that affects model scaling.

9.2. Change the Model Set

Each observer mode has a default model set that meets the visualization goals of that mode – realism for Stealth observer mode; visibility for XR observer mode; two-dimensionality for Plan View observer mode. However, in any observer mode, you can switch to any of the other model sets. You have seen the current view of the scenario using 3D models and 3D colorized models. Now try 2D icons.

- Choose **Observer** → **Set Model Set** → **2D Icons**. The entity models change to MIL-STD 2525B icons (Figure 16). The 2D icons are not affected by model scaling (but you can change their size, as described in “Change the Icon Size,” on page 29). They sit on top of the scene, so they are not blocked by terrain or buildings as the 3D models are.



Figure 16. 2D Icon model set

Now that you have seen the different model sets and model scaling, explore these features on your own. Figure 17 illustrates this scenario looking down at the terrain. It shows that you can scale 3D models as well as 3D colorized models (although they are still harder to see than colorized models). When you are done, stop the Logger.



Figure 17. Top down view

10. Explore Streaming Terrain

In addition to displaying local static terrain databases, VR-Vantage can stream data from a terrain service or files stored locally.

10.1. Connect to a Terrain Server

1. Choose **File** → **New Terrain**. The loaded terrain is cleared.
2. Choose **Settings** → **Terrain**. The Terrain Settings dialog box opens.
3. Select the Terrain Contents page ([Figure 18](#)).

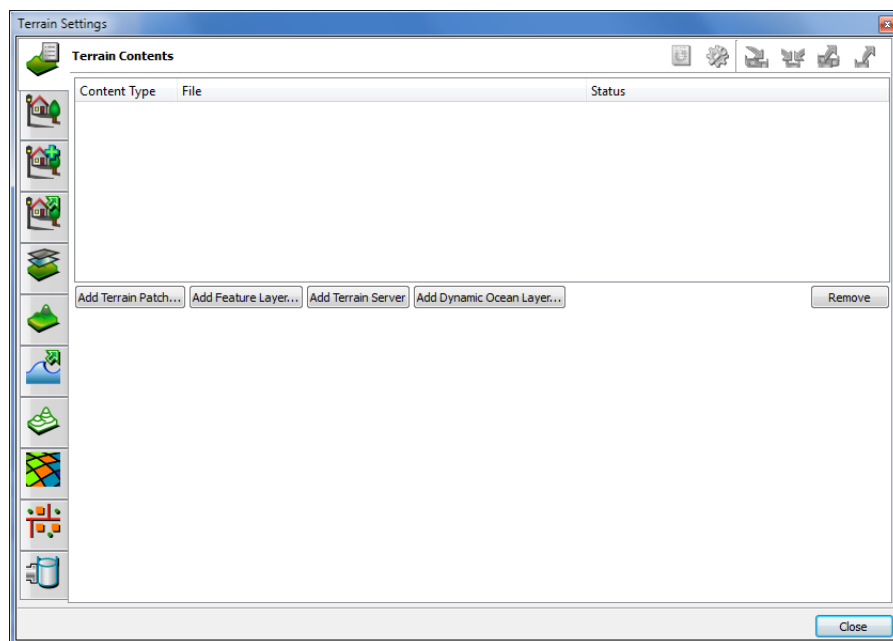


Figure 18. Terrain Contents

4. Click Add Terrain Server. The Add Terrain Server dialog box opens ([Figure 19](#)). The dialog box contains information about the selected terrain server. It is not editable.

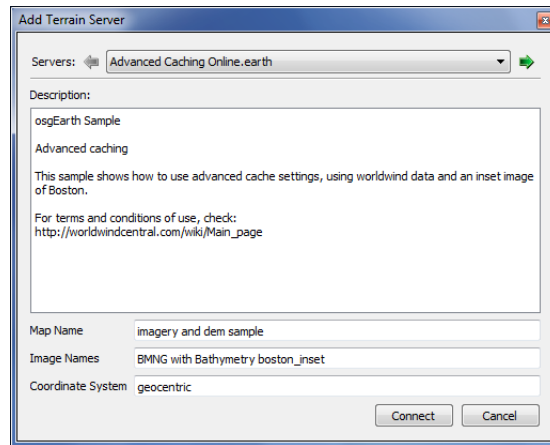


Figure 19. Add Terrain Server

5. Select VR-TheWorldOnline.earth¹ from the Servers drop-down list.
6. Click Connect. The whole earth is displayed.



7. Close the Terrain Settings dialog box.

10.1.1. Navigate the Earth

Use the keyboard and mouse to navigate the display. Zoom in and out. As you zoom in, more detailed terrain is displayed.

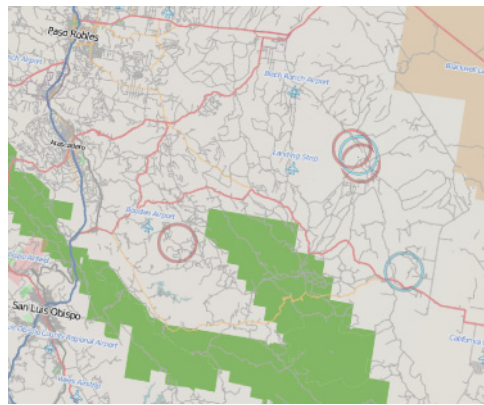
1. VR-TheWorld is a terrain server hosted by VT MÄK. If you access a different server, please note its terms of service. Many commercial sites like Google, Yahoo, and ESRI have specific restrictions on commercial use. It is your responsibility to abide by these terms.

10.2. Change the Data Stream

You can change the data stream you are using without disconnecting from the simulation.

1. Choose **Settings** → **Terrain**. The Terrain Settings dialog box opens.
2. Select the Terrain Contents page.
3. In the window, select VR-TheWorldOnline.earth.
4. Click Remove.
5. Click Add Terrain Server.
6. Select OpenStreetMap Example Online.earth.
7. Click Connect.

The earth will now be covered in map data as it streams in, as shown in the following figure.



When you are finished exploring streaming terrain, stop the Logger.

11. View a Terrain Agility Tutorial

VR-Vantage lets you load terrains created in terrain creation applications, such as OpenFlight files. However, you can also create terrains from elevation, feature, and imagery data. To see how:

1. Choose **Programs** → **MÄK Technologies** → **VR-Vantage 1.6** → **Documentation** → **VR-Vantage Video Tutorials**. A page opens in your web browser.
2. Click the first link in the list and follow the chain of videos.

12. Continue to Explore VR-Vantage

Continue to explore VR-Vantage. Look at the various settings options on the Settings menu. For more information, please read *VR-Vantage Users Guide* or online help. They provide detailed descriptions of all VR-Vantage features.

- To open *VR-Vantage Users Guide*, choose **Programs** → **MÄK Technologies** → **VR-Vantage 1.6** → **Documentation** → **VR-Vantage Users Guide**.
- To open online help, choose **Help** → **Help**.

Please contact sales@mak.com for additional assistance or to provide feedback.

Installation and Licensing

Your MÄK salesperson has given you a link to the VR-Vantage installer as well as links to other MÄK applications and data to support your first user experience. Download the files. Before you install the applications, note the following possible issues:

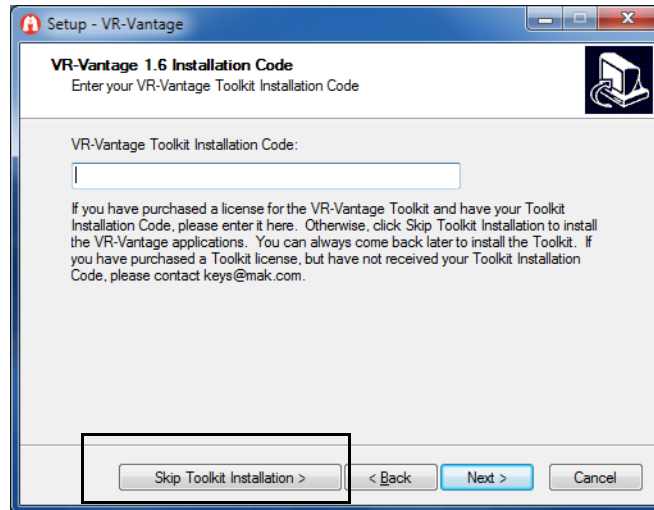
- ♦ You must have administrator privileges to install VR-Vantage on Windows Vista.
- ♦ When you install VR-Vantage on Vista or Windows 7, there may be a delay of up to several minutes from the time you try to run the setup program to the time that an installation dialog box is displayed. If you experience this problem, turning off User Access Control can reduce or eliminate this delay.
- ♦ These instructions assume you are familiar with installing Windows applications that use a wizard-style installer. They also assume that you have an unzipping application and know how to use it.

A. Install VR-Vantage and Supporting Applications and Data

Installing VR-Vantage is a two-step process.

To install VR-Vantage:

1. Run the application installer. On the VR-Vantage Installation Code page, click Skip Toolkit Installation.



2. Run the data installer.



You must install the data package. It is not optional. VR-Vantage will not run properly without it.

If you do not already have the MÄK Data Logger installed, install it as follows:

- Run the MÄK Data Logger installer. Accept all of the default settings.

If you installed MÄK Data Logger 5.0, you do not have to extract the *IISEC_VPMM_Demo_Final.lgr* recording. It is included in the Logger installer. If you have a previous version of the Logger, extract *IISEC_VPMM_Demo_Final.lgr* as follows:

- Extract *IISEC_VPMM_Demo_Final.lgr* from *IISEC_VPMM_Demo_Final.zip* to *C:/MAK/Loggerx.x/logger_tapes*.

B. Setting Up the License Manager

To use a MÄK product, you must install the MÄK License Manager and get a license for your product. Before you can use a MÄK product, you must obtain a valid license file and specify the license server.

➤ To install the MÄK License Manager, run the installer.

The general procedure for configuring license management is as follows:

1. Identify the name and ID of the license server and request a license file.
2. Put the license file in the *MAK/MAKLicenseManager* directory on the license server.
3. Run the license server.
4. Specify the license server location.

B.1. Identify the Host ID and License Server Name

For simplicity, use the computer on which you installed VR-Vantage as the license server. To find out the host ID and license server name:

1. On the Start menu, choose **Programs** → **MAK Technologies** → **MAK License Manager** → **MAK License Manager**. The MÄK License Manager utility opens ([Figure 1](#)).

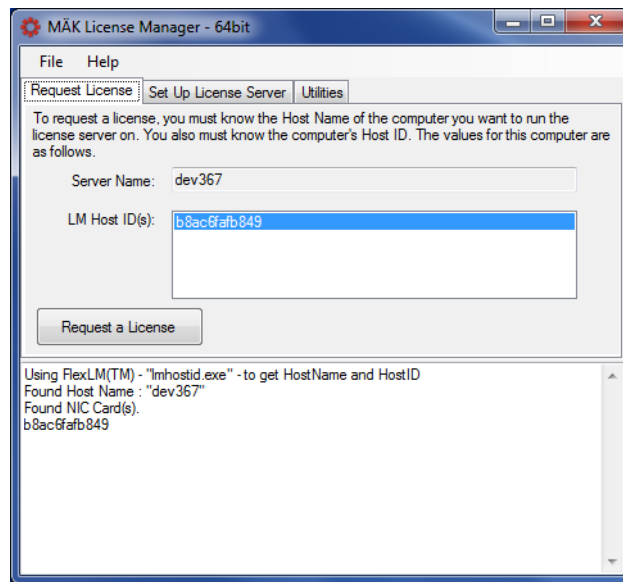


Figure 1. License Manager

2. Select the Request License tab. It displays the server name and the IDs for your network cards.
3. If you have more than one network card, select the one that you want to use as Host ID.

4. Send the host ID and hostname to your MÄK salesperson. MÄK will e-mail you a license file.

B.2. Put the License File in the *MAKLicenseManager* Directory

When you receive your license file, put it in the *MAKLicenseManager* directory on the license server. The file should have the extension *.lic*. If it does not, please contact keys@mak.com to clarify why it did not follow this convention.

B.3. Run the License Server

- To start the license server daemon, on the server machine only, execute `runLm` from the *MAKLicenseManager* directory.

2.3.1. Shutting Down the License Server

- To force all applications to check in their licenses and shut down the license server daemon, run `lmdown`.

B.4. Specify the License Server

The first time you run a MÄK application on a computer, the License Setup dialog box opens (Figure 2). It prompts you to enter the hostname of the license server and optionally, a port number.

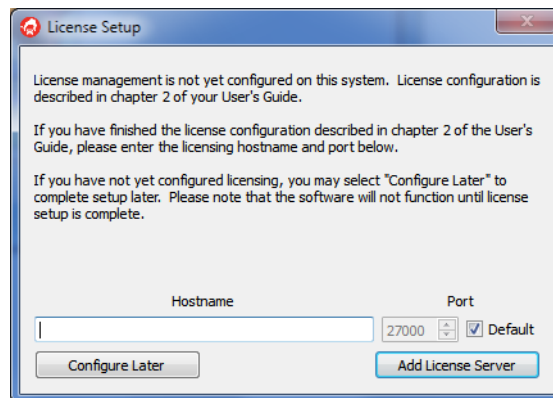


Figure 2. License Setup dialog box

1. Type the hostname in the Hostname box.
2. Click Add License Server. The application will start.