



VR-Forces 4.2.1 Release Notes

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Systems Supported

VR-Forces 4.2.1 is available for the platforms listed in [Table 1](#). For toolkit users, application code must be built with the indicated compilers in order to link to VR-Forces libraries.

Table 1: Platforms supported

Operating System	Compiler
Windows XP (32 bit only) Windows Vista Windows 7 Windows 8	Microsoft Visual C++ 10.0 (32 bit and 64 bit)
Red Hat Enterprise Linux 6 (64 bit libraries)	default compiler

3D Video Cards Supported

VR-Forces 4.2.1 supports NVIDIA graphics cards that support OpenGL 2.0. VR-Forces does not support AMD (formerly ATI) graphics hardware.

Some laptops have an NVIDIA graphics card and an Intel graphics card. You must configure your computer to use the NVIDIA card. To do so:

1. Open the NVIDIA Control Panel (in the System Tray).
2. Select Manage 3D Settings.
3. Select Global Settings.
4. Select Preferred Graphics Processor.
5. Select High-performance NVIDIA Processor.



We usually recommend that you always try to use the latest drivers available for your video card. However you should not update to any NVidia drivers newer than version 331.82. If you are using one newer than that version, you may experience some random crashing while the application is running, specifically if you are viewing the dynamic ocean rendering in 3D.

We are addressing this issue, and VR-Forces 4.3 will no longer have this restriction. In the mean time, we advise that you roll back to this version of the driver, or do not update your driver past this version.

Disk Space Requirements

A full installation of VR-Forces requires approximately eight GB of disk space.

Compiler Compatibility on Windows

MÄK provides versions of product releases that have been compiled with different versions of Microsoft Visual C++ (for example, 8.0 and 10.0). When you run MÄK products together on the same computer, for example, VR-Forces and VR-Vantage Stealth, we strongly recommend that you run versions compiled with the same compiler. Mixing products compiled with different versions of the compiler can result in program instability.

MÄK Product Compatibility

To build VR-Forces applications, you must link with VR-Link 4.0.9d. If you are building for HLA and want to link with the MÄK RTI, use MÄK RTI 3.x or later, although we recommend use of the latest release. If you are building for HLA Evolved, you must use MÄK RTI 4.0.4 or later.

Qt Release Compatibility

If you want to do development using the VR-Forces GUI API, you need to use Qt, a cross-platform GUI toolkit from Digia. The VR-Forces GUI was built with Qt release 4.7.4. Qt is available as a free download under the LGPL version 2.1 license at qt.digia.com. This version should be satisfactory for most VR-Forces customers. If you need a Qt commercial license, you must purchase the license from Digia.

FLEXlm Support

VR-Forces 4.2.1 uses FLEXlm 11.11. If you have a previous version of FLEXlm installed, you can install the MÄK License Manager and run FLEXlm from that directory, or you can copy the files installed by MÄK License Manager to your previous FLEXlm directory on your license server. You do not need to change license files (unless your maintenance agreement has expired.)

Third Party Library Support

VR-Forces 4.2.1 uses the indicated versions of the following libraries:

- ♦ VR-Link 4.0.9d.
- ♦ OpenSceneGraph 3.0.1.
- ♦ Boost 1.46.1.
- ♦ FreeGlut 2.4.0.
- ♦ DI-Guy 12.5.
- ♦ GL-Studio 4.2.3.

MÄK will provide modified source code for OSG and osgEarth upon request, as per the OSGPL license. Please contact support@mak.com for download links.

VR-Forces 32-bit Does Not Support Some Large Terrain Databases

The 32-bit versions of VR-Forces cannot support large terrain databases whose use results in exceeding the memory capabilities of 32-bit applications and operating systems. For example, the 32-bit versions of VR-Forces cannot run scenarios that use the *VR-TheWorld Online - MAK Earth.mtf* terrain, which has a highly detailed terrain of Honolulu, Hawaii.

Running 32-bit Applications on 64-bit Windows 7

Windows 7 has a bug that causes applications to crash when running a 32 bit application on 64 bit Windows with large addresses enabled (which allows 32-bit applications to use more than 2 GB of memory). This bug affects VR-Link-based applications, such as VR-Forces. Microsoft has a hotfix that fixes this problem. For details and the hotfix download, please go to <http://support.microsoft.com/kb/2588507>.

Using MÄK Products on Virtual Machines

In general, MÄK products run on virtual machines without any problems. The exception to this statement is that applications that use 3D graphics, such as VR-Vantage and the VR-Forces front-end, may not work properly. This is due to lack of support for NVIDIA drivers by virtual machines. We continue to investigate ways to resolve this problem.

Network Compatibility

HLA only

VR-Forces 4.2.1 was built against VR-Link 4.0.9d and is compliant with:

- ♦ RPR-FOM 1.0 and a subset of 2.0 (draft 6 and 17)
- ♦ MÄK RTI 3.x, 4.x, and other RTIs that meet the HLA 1.3, IEEE 1516 SISO DLC API, or HLA Evolved specifications and are built with the same compilers as VR-Forces.

VR-Forces 4.2.1 is compatible with applications that use earlier versions of VR-Link if they support versions of the RPR FOM listed.

The VR-Forces 4.2.1 front-end is not compatible with RTI-NG Pro because it uses a non-standard version of *xerces_c_2_7.dll*.

DIS only

VR-Forces 4.2.1 supports DIS 4, 5, and 6, and can therefore interoperate with DIS applications of any of these versions.

Backwards Compatibility

The VR-Forces 4.2.1 APIs are not compatible with VR-Forces 3.x or earlier. It is largely compatible with the 4.2 and 4.1.x API. Small changes may be necessary to migrate from 4.1.1.

Scenarios created with VR-Forces 3.12 and 4.x are forward compatible.

RPR FOM Versions Supported

VR-Forces 4.2.1 has built-in support for versions 1.0 and 2.0 (draft 6 and 17) of the RPR FOM and RPR FOM 2.0, draft 17 with DI-Guy extensions. It also supports VR-Link's ability to support alternative FOMs through the FOM Mapper. By default, VR-Forces 4.2.1 uses RPR FOM 1.0.

If you are building an application with the VR-Forces toolkit and you want to specify a version of the RPR FOM through code, pass the version number (for example, 2.0006) to the *DtRprFomMapper* constructor and pass the resulting object to the *DtExerciseConn* constructor. Also, make sure you are using a federation execution name that corresponds to the right FED file. For example:

```
DtExerciseConn conn("VR-Link20006", "MyApp", new DtRprFomMapper(2.0006));
```

In order to support RPR FOM 1.0, we have added the following extensions (which are supported in later versions of the RPR FOM):

- ♦ EnvironmentProcess
- ♦ GriddedData
- ♦ EmbeddedSystem.IFF
- ♦ EmbeddedSystem.IFF.NatoIFF
- ♦ EmbeddedSystem.IFF.NatoIFF.NatoIFFTransponder
- ♦ EmbeddedSystem.IFF.NatoIFF.NatoIFFInterrogator
- ♦ EmbeddedSystem.IFF.SovietIFF
- ♦ EmbeddedSystem.IFF.SovietIFF.SovietIFFTransponder
- ♦ EmbeddedSystem.IFF.SovietIFF.SovietIFFInterrogator
- ♦ EmbeddedSystem.IFF.RRB
- ♦ BaseEntity.AggregateEntity
- ♦ ObjectRoot.BaseEntity.PhysicalEntity.Lifeform.

For both RPR FOM 1.0 and 2.0 VR-Forces 4.2.1 relies on the LgrControl and View-Control custom MÄK extensions.

New Features and Updates

VR-Forces 4.2.1 is primarily a maintenance release. It has the following new features.

- ♦ Support for embedded entities.
- ♦ Added RPR FOM 2.0017, revision 6 to the list of RPR FOM versions in the Simulation Connections Configuration dialog box (VR-Forces Launcher).

Embedded Entities

Embedded entities are a convenient way to manage entities that are typically embarked on other entities.

Ships, planes, and vehicles often carry other platforms or personnel. You can simulate this relationship by embarking entities on other entities. However, this involves creating the embarking entities, giving them plans, embarking them, disembarking them, and otherwise managing the relationship. This can be inconvenient if you need to simulate large numbers of embarked entities, such as the airplanes and helicopters on an aircraft carrier or multiple personnel on a personnel carrier.

The embedded entity feature lets you configure entities with a set of embedded entities. You can then deploy the embedded entities and give them tasks or plans. Once deployed, there is no difference between an embedded entity and any other entity, except that a parent entity can recover a deployed entity. You do not need to manage the initial process of creating the relationship between the entities via embarkation and disembarkation.

Configuring an Entity to Support Embedded Entities

Embedded entities are configured in systems, which you then add to an entity in the Entity Editor. An entity can have only one embedded entity system. Therefore, if you need different configurations of embedded entities for different parent entities, you must create a system for each configuration.

Within a configuration, you must specify each embedded entity. In other words, you cannot specify a system as containing, for example, 5 helicopters and 40 F/A-18 jets. In this case the system would have to individually specify each helicopter and each jet.

A system definition file for embedded entities specifies the entities and the meta data needed to edit properties in the Entity Editor. You must give each entity a unique name.

An entity is formatted as follows:

```
(embedded-entities
  (ee-1
    (entity-name "SH-60 Seahawk Alpha")
    (entity-type 1 (1 2 225 22 3 1 0))
    (deployment-time 0.0)
    (recovery-distance 35.0)
    (relative-position $rel-pos-lamps-a)
    (relative-heading $rel-heading-lamps-a)
```

```

    )
  ...
  (ee-2
    (entity-name "RHIB Alpha")
    (entity-type 1 (1 3 225 63 8 0 0))
    (deployment-time 15)
    (recovery-distance 50.0)
    (relative-position $rel-pos-rhib-a)
    (relative-heading $rel-heading-rhib-a)
  )
  ...
)

```

The **relative-position** and **relative-heading** parameters are variables that link to the meta data, as follows:

```

(parameter-data-list
  (vector-parameter-data
    (parameter-name "rel-pos-lamps-a")
    (variable-type "DtRwVector")
    (display-label "Seahawk Alpha's relative position")
    (display-units "meters")
    (source-units "meters")
    (default-value -75.000000 0.000000 -6.500000)
    (relative-to ""))
  )
  (vector-parameter-data
    (parameter-name "rel-pos-rhib-a")
    (variable-type "DtRwVector")
    (display-label "Rigid-hull Alpha's relative position")
    (display-units "meters")
    (source-units "meters")
    (default-value -75.000000 10.000000 -6.500000)
    (relative-to ""))
  )
  ...
  (real-parameter-data
    (parameter-name "rel-heading-lamps-a")
    (variable-type "DtRwReal")
    (display-label "Seahawk Alpha's relative heading")
    (display-units "degrees")
    (source-units "degrees")
    (default-value 0.000000))
  )
  (real-parameter-data
    (parameter-name "rel-heading-rhib-a")
    (variable-type "DtRwReal")
    (display-label "Rigid-hull Alpha's relative heading")
    (display-units "degrees")
    (source-units "degrees")
    (default-value 90.000000))
  )
  ...
)

```

[Figure 1](#) illustrates the properties dialog box created for the system shown in previous paragraphs.

DDG Embedded Support Craft (LAMPS/RHIB) (other-3) Properties

System that allows an entity to deploy and recover Embedded Entities appropriate to a ship with supporting LAMPS units.

Seahawk Alpha's relative position

Forward (m): -75

Right (m): 0

Up (m): 6.5

Seahawk Bravo's relative position

Forward (m): -75

Right (m): 0

Up (m): 6.5

Rigid-hull Alpha's relative position

Forward (m): -24

Right (m): 12

Up (m): 0

Rigid-hull Bravo's relative position

Forward (m): -33

Right (m): 12

Up (m): 0

Seahawk Alpha's relative heading (deg): 0.0000

Seahawk Bravo's relative heading (deg): 0.0000

Rigid-hull Alpha's relative heading (deg): 0.0000

Rigid-hull Bravo's relative heading (deg): 0.0000

OK Cancel

Figure 1. Embedded entity properties dialog box

Deploying Embedded Entities

To add an embedded entity to a simulation, you deploy it from the parent entity. You can deploy an embedded entity explicitly or implicitly (by assigning a task to it). An embedded entity's label displays its name and the name of its parent.

To deploy an embedded entity explicitly:

1. Select the parent entity.
2. Choose **Task** → **Embedded Entity** → **Deploy**. The Deploy Embedded Entity dialog box opens.
3. Select the entity you want to deploy.

Deploying an Entity with a Task

You can assign a task to a deployable entity, that is, an embedded entity that has not been deployed yet. This implicitly deploys the entity so that it can execute the task. You can assign a task to an embedded entity in the parent's plan or you can assign a task to a parent entity that requires it to deploy an embedded entity. The Sector SAR task is an example of how to task a parent entity to deploy an embedded entity. For details about the Sector SAR task, please see [Sector SAR](#), on page 10.

To assign a task to a deployable entity in a parent's plan:

1. Select the parent entity.
2. Choose **Entities** → **Plan**. The Plan window opens.
3. Choose **Embedded Entities** → *entity* → **Task** (or **Set**) → *task* (or *set*), where *entity* is one of the entities that the parent can deploy and *task* (or *set*) is one of the tasks or sets on the Task or Set menu. An appropriate dialog box for the task or set opens.



If an entity does not have embedded entities, the Embedded Entities menu is not available.

4. Fill out the dialog box like you would for any task or set.

Recovering Deployed Entities

If you want an embedded entity that has been deployed to return to its parent, you can have the parent recover it.

To recover a deployed embedded entity:

1. Select the parent entity.
2. Choose **Task** → **Embedded Entity** → **Recover**. The Recover Embedded Entity dialog box opens.
3. Select the entity you want to recover.

Assigning Tasks and Plans to Embedded Entities

Once an embedded entity is deployed, it is just like any other entity in the scenario. You can give it independent tasks or write a plan for it. Follow the standard procedures for these activities.

Restoring an Entity that has Embedded Entities

If you deploy an embedded entity and it gets destroyed, it is removed from the scenario and is not available to be deployed again. However, if you restore a parent entity and it had deployed entities that were subsequently destroyed, it is restored to the full complement of embedded entities. Entities that are deployed at the time the parent is restored are not affected. They are not duplicated in the parent's inventory and their relationship is not affected.

Sector SAR

The Sector SAR (search and rescue) task is an example scripted task that deploys an embedded fixed-wing or rotary-wing entity to fly a search and rescue pattern (Figure 2).



Figure 2. SAR pattern



- ♦ You cannot choose which entity executes the task. VR-Forces uses the first available embedded entity in the list of configured entities.
- ♦ The center of the search pattern (the CSP) has an icon. If the CSP is centered on the parent entity, in PVD observer mode the CSP icon covers the entity icon and you cannot select the parent unless you zoom in very close to the entity. You can still select the parent in the Objects List panel.

To issue a search and rescue task:

1. Select an entity that can deploy a fixed-wing or rotary-wing entity.
2. Choose **Task** → **Embedded Entity** → **Sector SAR**. The Sector SAR dialog box opens (Figure 3).

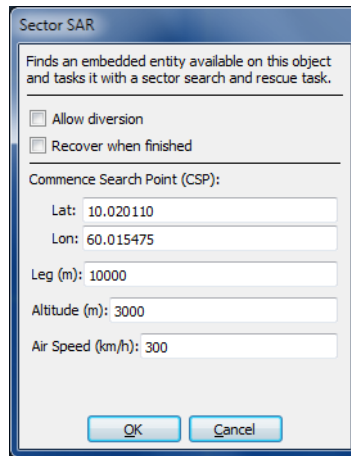


Figure 3. Sector SAR dialog box

3. If all of the parent's embedded entities are deployed and you want this task to override the task for one of them, select Allow Diversion. (You cannot choose which entity will execute the task.)
4. Optionally, select Recover when Finished. This option works as follows:
 - If selected, the parent's plan does not advance while the embedded entity executes the SAR pattern. When the SAR pattern is completed, the parent recovers the embedded entity. Then it continues with its plan.
 - If cleared, the parent's plan advances while the embedded entity executes the SAR pattern. In other words, it acts if you issued an independent task to another entity. The embedded entity is not recovered until you explicitly recover it.
5. By default, the center of the search pattern is the location of the parent. If you want to change the CSP, change the Latitude and Longitude values or click on the terrain.
6. Optionally, edit the other parameters of the SAR pattern.
7. Click OK. (It may take several seconds for the parent to deploy the embedded entity.)

Documentation Updates

Documentation has not been updated for this release. This release note covers all new features.

Bug Fixes

This release fixes the following problems that were present in prior releases (with bug-tracking numbers):

- Sometimes entities were saved with incorrect parent name and subordinate values, which caused the scenarios to fail on reload. 52097
- Human movement sometimes continued after a task was completed due to collision avoidance. 52094
- Switching between a MILSTD icon and a symbol image did not work correctly. 52129
- Terrains that had partial elevation in a .earth file caused vrfSim to crash. 51869
- Dead lifeform entities may unexpectedly block line of sight. Their bounding volumes are always upright, regardless of whether or not they are dead. 36648, 43063
- If you renamed a layer with local objects, the objects did not get placed on the layer. 52087
- When a new aggregate model was made, the path to write out the formation files was incorrect. 52005
- The Lua getEmbarkedObjects call did not work in HLA. 51995
- Fog of war did not work for environmental objects in HLA. 51931
- Ballistic missiles did not reset the when to launch value correctly when a scenario was rewound or loaded. 51893
- The Emitter Information panel in the Entity Information dialog box did not always get populated in HLA. 51877
- A problem with the TerraPage loader was fixed. 51661
- In tasks such as move-along-route, in which the ordered speed is used to determine when to turn, ships did not turn correctly if the ordered speed was different from the default. 51578
- The Fire At Target task could cause an entity to enter a state where it could not fire. 51548
- The Heading variable in scripted tasks did not work. 51427
- The GUI did not update correctly when editing points on a circle. 51402
- The Underwater Acoustics PDU offset was not updated. 51317
- Class documentation was missing for VR-Vantage and terrain toolkit classes. 51317
- Observer views were not cleared when a new scenario was loaded. 50994
- The list of DI-Guy appearances for the DI-Guy Appearance condition (in plans) was empty. 50977
- Creating a plan with an empty While(True) loop crashed vrfSim. 38075
- The Follow task did not work on geocentric terrains. 52115

Known Problems

VR-Forces Release 4.2.1 has the following known problems (with bug-tracking numbers):

- ♦ Some task and set dialog boxes use “requestors”, which query information from the back-end in order to populate the dialog box. When sending a task to an Embedded Entity that uses one of these dialog boxes, the dialog box displays the parent's information, not the embedded entity's. The Set Resources dialog box is one example of this problem. 52141
- ♦ If you create a variable binding in the OPD Editor, it does not get saved. 51169
- ♦ If you load a saved scenario and then move a lifeform, its heading gets set to 0. 51122
- ♦ The Fire at Target task does not work correctly for rotary wing and fixed wing entities. 51086
- ♦ If you drag a scenario script in the Scripted Tasks window, it gets reset to the default template. 51052
- ♦ Sometimes child DI-Guy entities are invisible. 51000
- ♦ Expand All and Collapse All affect the entire aggregate rather than working up or down from the selected aggregate member. 51166
- ♦ Aggregates have various difficulties moving into formation. 51160 51036
- ♦ If you load the MAK Earth terrain after you have loaded other terrains, it does not page in the highest LODs. 51151
- ♦ If you connect to a terrain server and then connect to it again without first closing the connection, the terrain becomes unusable. 51044
- ♦ Some environmental effects do not work well if you have multiple observers.
- ♦ If you attach the observer to an entity that is displaying communications lines and you turn off communications lines, VR-Vantage crashes. 51120
- ♦ Restoring CameraFX sensors to factory settings breaks the sensors. 51159
- ♦ GL Studio (and therefore cockpits) is not supported on Linux.
- ♦ Sound effects are not supported on Linux.
- ♦ Enabling wakes, spray effects, and the buoyancy model when in PVD observer mode can seriously degrade performance. These features are disabled by default. If you inadvertently enable them and experience this problem, switching to Stealth mode and back to PVD restores performance. 51037
- ♦ The SMS upgrade process does not update DI-Guy appearances. As a result, the old random appearance list is used and upgraded SMSs will not use skinned characters. 51010
- ♦ Attaching object to an entity does not work except for waypoints. 50849
- ♦ Saving large Lua objects can hang the back-end. 50750
- ♦ When you disaggregate an aggregate, it is collapsed instead of being expanded. 50459

- ♦ If an aggregate is moving to a location, settings its formation causes the task to be skipped. 50452
- ♦ When you add a Lua task to a menu, it does not appear on the menu until you reload the scenario. 50315
- ♦ Ships that are given a patrol route task do not move along the route from the end to the beginning. They go directly from the end point to the start point. 50378
- ♦ Some bounding volumes are incorrect. 50737
- ♦ If you create an object on a terrain that has multiple LODs that has not paged in to the highest LOD, and you set the altitude to some value above the terrain, it is possible that when the terrain pages in to the highest LOD, the location you specified will no longer be at the desired altitude above the terrain. It might even be below the terrain. The reverse can also occur. If you place an object when the highest resolution LOD is paged in and then zoom out, the object might disappear from view. However, in this case, the object is still in the correct location relative to the highest resolution of the terrain.
- ♦ On Linux, if you install VR-Forces in one directory and user data in another directory, VR-Forces will not start. 50538
- ♦ If you change the color of a text tactical graphic to black, the text is not displayed. 50525
- ♦ Links from the Developers Guide to PDF documentation sometimes go to the first page of the PDF instead of the intended location. This behavior depends on the browser and version of the Adobe Acrobat Reader plug-in that it uses. It is a known problem in Mozilla Firefox.
- ♦ If you create a folder in the Save dialog box and it has a space at the end of the name, Windows does not recognize the existence of the folder. If you try to delete it, the system may blue screen. Running scandisk can solve this problem. 50190
- ♦ If the check() function in a reactive task does not return a value, the back-end will crash.
- ♦ The following examples do not come pre-built in the Linux installer:
 - addConditionalGui
 - addSetGui
 - addSimCommandGui
 - interfaceContentGui.

In order to do build them to be used with VR-Forces, you must use the make command as follows:

```
make install
```

This should generate the files needed to use the plugins in Linux. 49336

- ♦ The first time you load a terrain (including the terrains supplied with VR-Forces), VR-Forces 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 12.13, "Configuring File Caching,"](#) in *VR-Forces Configuration Guide*.
- ♦ Use of radio communications lines can affect performance. The front-end and back-end can become unsynchronized due to a slowdown in the networking thread.
- ♦ Changing the GUI icon or model mapping in the Entity Editor changes the icon or model for all Simulation Model Sets, not just the one being edited. 48443
- ♦ Ground vehicles and lifeforms will not avoid feature obstructions on geocentric terrains. 43868
- ♦ Some metaflight terrains, such as HarrisAfghanVillageFlatEarthMetaflight and HarrisAfghanVillageGeocentricMetaFlight will not display in the 2D view when first loaded. To see the terrain, change to a 3D view mode, and press the spacebar (center view on terrain) to move the eyepoint to the terrain location. After this, the terrain can be viewed in the 2D view. 43797
- ♦ The imagery for the Makland terrain database is much larger than the actual terrain data, which is confined to the square inset in the lower left corner of the image. This means that if you try to simulated entities on the outer areas of the image, simulation will fail because there is no terrain data there. 43867
- ♦ Geometry files referenced by a MetaFlight file must be in OpenFlight format, and not in Vega Prime's binary format (.vsb). MÄK's terrain libraries do not support .vsb files. 11772
- ♦ Rotary-wing entities are not able to reach moving waypoints or land on moving ships. A rotary-wing entity will approach a given waypoint or landing point, but will never completely reach the goal. 12801
- ♦ Embarked entities controlled by joystick cannot disembark. For example, if you use a joystick to control a fixed-wing taking off from a carrier, the aircraft will take off, but it will remain in an embarked state. 37175
- ♦ Lifeform entities cannot be configured with multiple weapon systems. 40408
- ♦ Not all languages can be used to name entity types in the entity editor. 42241
- ♦ Although the indirect fire controller will wait until the target location is paged in before executing a fire for effect task, it does not take into account the dispersion radius. This means that depending on the size of the page and the radius, some detonations might happen underground. 42682
- ♦ When DtBallisticGun::createDetonationInteraction has its "assureMiss" parameter set to true, it may not have terrain paged in for the area in which it needs to create the detonation (on the ground nearby). 42730
- ♦ In some cases, VR-Forces will fail to load a scenario if the main window of the GUI application does not have focus. 43547

- The road driving feature in VR-Forces requires that the road vectors making the network be connected at their edges. Some data does not have accurate positions for road ends, which will cause them to be disconnected, and the road driving unable to plan a path along those roads. 42895
- If you have a large size obstacle, it is possible that entities might get confused and travel through it. If this happens to you, it is recommended that you make smaller obstacles. 45549
- When creating some lifeform entities, the 3D model attached to the mouse pointer when placing is inconsistent with the entity type that is being created. The entity that is created, however, is the correct type and does show the correct 3D model after it is created. 43728

The following known problems apply to the front-end:

- VR-Forces may crash on exit on Linux if your Linux installation is not at the latest version of *libsdlmixer* (as of the date of this release).
- Some strings in the graphical user interface are not included in the translation files. Some strings, such as those on the Create menu, are in configuration files. Others are in settings files. You can translate these strings by identifying the appropriate configuration file and translating the strings. 47806
- The TerraSimSampleUrbanMetaFlight terrain is not initially visible when loaded in PVD. 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.
- Changing the hierarchy of raster map layers may cause a crash. 44498
- When a DI-Guy character is given an animation that involves kneeling, the DIS posture is set to kneeling. Therefore when the animation completes, the entity will continue to kneel. 38103
- 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.