



MÄK VR-Forces 2.1-ngc Release Notes

This release note contains the following release-specific information for VR-Forces Release 2.1-ngc:

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Systems Supported

VR-Forces 2.1-ngc is available for the platforms listed in [Table 1](#). For the availability of other platforms, contact your MÄK salesperson. For toolkit users, application code must be built with the indicated compilers in order to link to VR-Forces libraries.

Table 1: Platforms supported

Platform	Compiler
SGI IRIX6.5	MipsPro7.2.1 C++ compiler (available from SGI)
PC with Windows NT 4.0 SP6 or Windows 2000 SP2	Microsoft Visual C++ 6.0, Service Pack 5

VR-Link and MÄK RTI Compatibility

To build VR-Forces applications, you must link with VR-Link 3.7.1-ngc. If you are building for HLA and want to link with the MÄK RTI, use MÄK RTI 1.3.6-ngc.

System Requirements for PCs

Minimum system requirements are:

- ♦ Microsoft Windows NT 4.0/2000
- ♦ Intel Pentium compatible CPU, 300 Mhz or better
- ♦ RAM: 128MB. 256-512 recommended. VR-Forces loads a copy of the terrain database for each front-end and back-end loaded.
- ♦ Hard disk space - Approximately 160 MB for complete installation of application and toolkit. Approximately 90 MB for application alone. Most of this is for the terrain databases shipped with VR-Forces. The class reference documentation for the toolkit uses 59 MB. You may need considerably more space depending on the databases you plan to use.
- ♦ Two or more multiples of the amount of RAM for virtual memory. Running VR-Forces in HLA may require increased amounts of virtual memory.

Online Help

The online help is in HTML format and uses the default browser for your computer. For all online help features to work, you must enable Java and Javascript in your browser.

Network Compatibility

HLA only

VR-Forces 2.1-ngc was built against VR-Link 3.7.1-ngc and is compliant with:

- ♦ RPR-FOM 1.0 and 2.0
- ♦ MÄK RTI 1.3.6-ngc
- ♦ DMSO RTI NG v1, v2, v3.0, v3.1, v3.2, and 4.0.

VR-Forces 2.1-ngc is compatible with applications that use earlier versions of VR-Link if they support versions of the RPR FOM listed above.

DIS only

VR-Forces 2.1-ngc 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.

RPR FOM Versions Supported

VR-Forces 2.1-ngc has built-in support for versions 1.0 and 2.0 of the RPR FOM. It also supports VR-Link's ability to support alternative FOMs through the FOM Mapper. By default, VR-Forces 2.1-ngc 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 (2.0) 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-Link20", "MyApp", new DtRprFomMapper(2.0));
```

RTI Support

The MÄK RTI is included on all MÄK product CDs. It is link-compatible with the DMSO RTI NG. VR-Forces 2.1-ngc has been tested with DMSO RTI NG v1, v2, v3.0, v3.2, and 4.0.

If you use the MÄK RTI, be sure that VR-Forces can find your FED file, and optional *rid.mtl* file, by putting them in the directory from which you are running, or by setting the environment variable RTI_CONFIG to the directory that contains them.

RTI Library Names

VR-Forces 2.1-ngc expects library names that match those of DMSO RTI NG v3.2 or later. If you run VR-Forces 2.1-ngc with DMSO RTI NG v3.2 or later, both the UNIX and PC versions work without any modification. If you want to run VR-Forces 2.1-ngc with DMSO RTI NG v1 or v2, you must make the following changes:

- ♦ For UNIX, you must use the libraries *libRTI-NGv2.so* or *libRTI-NGv1.so*, which are supplied by MÄK in the *.lib* directory. These libraries correspond to DMSO RTI NG v1 and v2. To use VR-Forces 2.1-ngc with RTI NG v1 or v2, copy the appropriate library to the DMSO RTI NG *lib* directory and rename it *libRTI-NG.so*. (You might want to rename the v3.x *libRTI-NG.so* library first.)
- ♦ For PCs, rename the libraries that come with RTI NG v1 or v2 to the names used by the RTI NG v3.2 libraries (*libRTI-NG.lib* and *libfedtime.lib*).

New Features and Updates

This release of MÄK VR-Forces has the following updates and new features:

- ♦ Models for surface ships
- ♦ Updated documentation.

Models for Surface Entities

In previous versions of VR-Forces, surface entities had the correct icons, but their behavior was based on ground vehicle models. In this release, surface entities have their own components that more closely model surface entity behavior. The surface entity components are described in *MÄK VR-Forces Developer's Guide*.

Updated Documentation

The VR-Forces Class Reference documentation (in HTML) has been updated for this release. *MÄK VR-Forces Developer's Guide* has been completely revised and updated to document VR-Forces 2.x-ngc. The PDF version of *MÄK VR-Forces User's Guide* was updated to VR-Forces 2.x-ngc for the VR-Forces 2.0.5-ngc release. It has slight updates in this release.

Documentation Errata

- ♦ Surface entity components are not documented in *MÄK VR-Forces User's Guide*.
- ♦ Some message types, components, and the Fire for Effect Task are not documented in *MÄK VR-Forces Developer's Guide*. If you have a question about a component and cannot find it in the manual, contact support@mak.com.
- ♦ The printed version of *MÄK VR-Forces User's Guide* provided with this release has not been updated. It is the VR-Forces 1.x version. The principal differences between the new manual and the older version are in Chapter 3, “VR-Forces Concepts” and Chapter 10, “Advanced Configuration.”

- ♦ The class reference documentation includes references to classes (primarily related to engineering objects such as obstacles and minefields) that are part of the VR-Forces code base, but which are not a supported part of this release.

Using the ground-db.gdb Database with the MÄK Stealth

If want to use the ground-db.gdb terrain database in VR-Forces and view a scenario with the MÄK Stealth, be sure to load the *ground.mtl* configuration file in the Stealth. Do not load the FLT file for the ground database. The *ground.mtl* file sets the correct database origin.

Using the MÄK Logger with VR-Forces

When you load a scenario or create a new scenario in VR-Forces, it sends messages to other VR-Forces applications telling them to load the appropriate terrain database and other information. Since these messages get sent on the network, if you are running the MÄK Logger in record mode, it will record these message. If you then play back the recording with VR-Forces running, VR-Forces will try to respond to the load database messages. This can cause unanticipated behaviors. Therefore if you want to record VR-Forces simulations, we recommend:

- ♦ Do not begin recording a scenario until after you have loaded the scenario or until after you have finished creating a new scenario and are ready to run it.
- ♦ Stop the Logger recording before you exit the scenario or close any VR-Forces applications.

Bug Fixes

This release fixes the following problems:

- ♦ The DIS site/application number address is no longer being over-specified.
- ♦ Moving in reverse works correctly.
- ♦ Helicopters now recognize opposing helicopters as enemies.
- ♦ Dead-reckoning for slewing turrets on tanks has been fixed. Fewer packets are now sent out for tanks, and turrets now appear to rotate smoothly in Stealth applications.
- ♦ A GUI crash bug triggered by retasking an entity to perform a wait duration or wait elapsed task has been fixed.
- ♦ A GUI crash bug triggered when editing routes through the edit route dialog has been fixed.

Known Problems

VR-Forces Release 2.1-ngc has the following known problems:

- ♦ The Go To Next and Go To Previous options on the Map Navigation menu do not work with aggregates. If you have a mixture of aggregates and individual entities, using these menu options works fine if there is a series of contiguously listed individual entities. Once the selection moves to an aggregate (11:1:0 ...) the entity list window loses a selection and the view in the Simulation View window doesn't change.
- ♦ Aggregates composed of fixed-wing entities do not carry out tasks as an aggregate.
- ♦ If you are using VR-Forces on a multi-processor computer, set the affinity to single-processor. VR-Forces does not currently take advantage of multiple processors.
- ♦ The world.gdb file is based on a DTED database. If you use this database, some entities may not execute tasks. Some entities will not display properly.
- ♦ Batch scenarios do not record to MÄK Logger files.
- ♦ The User's Guide states that when you load a scenario, VR-Forces begins executing set data requests and conditional statements in a plan until it reaches the first task. It does this even before you press Start. This is no longer the case. Plans are not executed until you start a simulation.
- ♦ When you aggregate a set of aggregates into a higher-echelon aggregate using the "Aggregate As" menu item, make sure that the aggregates being combined have been collapsed to their highest level. Failure to do so will aggregate the entities at the level they are currently displayed. For example, suppose that you want to aggregate two teams of two tanks each into a platoon. If at the time of the "Aggregate As" operation, one of the teams is expanded, displaying its constituent tanks, while the other team is collapsed, displaying a single team icon, the resulting platoon will be composed of two individual tanks and a team, instead of two teams.
- ♦ Phase line labels are displayed in the middle of the phase line rather than the beginning. To determine which side of a phase line is "left" for the purpose of the EntLeftOfLine condition, you will need to remember where you started each phase line.
- ♦ The missile icon may flash briefly origin of the database when a missile is fired.
- ♦ Surface and lifeform entities are not configured to fire weapons or be fired upon. You can customize the object parameters database entries to enable this.
- ♦ Repeated attempts to toggle the intervisibility fan may result in multiple intervisibility fans displayed on top of one another. It will not turn them off.
- ♦ The waypoint icon is currently being displayed centered on its location. According to MIL-STD-2525B it should be positioned with the lower tip of the positioned at the waypoint's location.
- ♦ Stealth control using the Stealth Control dialog box from VR-Forces does not work. (The Stealth Attach and Teleport Stealth commands work.)
- ♦ Joysticks do not work correctly with DirectInput.

- ♦ If you load a FLT file, then close the front-end, then open a new front-end and load another FLT file, the GUI may crash.
- ♦ If you run multiple front-ends, the "extra" front-ends do not show the run or pause buttons depressed when the simulation state changes.
- ♦ The Berkeley Demo recording provided with the MÄK Logger does not work with this release of VR-Forces.
- ♦ The pseudo-aggregate formation controller ignores entities in a formation that are independently tasked when determining if the promotion order needs to be updated. Currently it has no way to determine if remote entities are independently tasked. One possible solution might be to listen to task and task complete messages for all the subordinates in order to maintain a local picture of what is going on.

