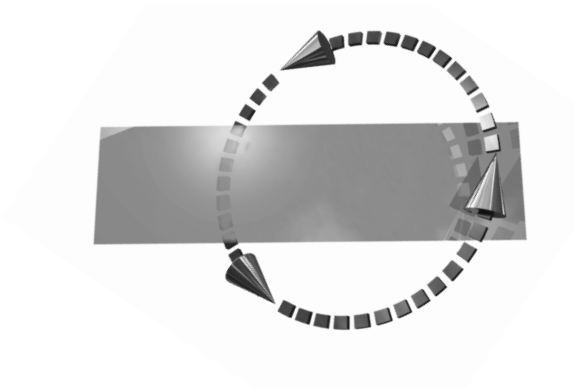

MÄK VR-Link 3.9.3 Release Notes

This release note provides the following release-specific information for MÄK VR-Link Release 3.9.3:

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Document ID: VRL-3.9.3-3-040928

Systems Supported

Table 1 lists the platforms currently supported by MÄK VR-Link 3.9.3. Please contact MÄK if you are interested in purchasing VR-Link for other platforms. Application code must be built with the indicated compilers in order to link to VR-Link libraries.

Table 1: Platforms supported

Platform	Compiler
SGI IRIX6.5	MipsPro7.3 C++ compiler (available from SGI)
Sun Sparcstation with Solaris2.7 or later	SPARCompiler C++ version 5.2 (available from Sun)
PC with Red Hat Linux 8.0 and 9.0	GNU C++ (GCC) 3.2
PC with Windows 2000/XP	Microsoft Visual C++ 6.0 SP5 Microsoft .NET

You must use *libXml2* to build any HLA application.

Disk Space Requirements

On SGI IRIX, you need approximately 270 MB for VR-Link files and 60 MB for all documentation files. Other UNIX installations require approximately 50 MB for VR-Link files and an additional 60 MB for documentation files.

On PCs, you need 50 MB for VR-Link files and 60 MB for all documentation files.

Patching the Microsoft Visual C++ 6.0 Compiler

If you use Microsoft Visual C++ version 6.0, you must install a patch to a standard header file, in order to successfully build applications against the IEEE 1516 header files. The patch comes from Dinkumware, Ltd (the company that developed the Standard C++ Library header files for Microsoft), but for convenience, we are distributing it with VR-Link releases.

The patch fixes a bug that would cause applications to crash if they pass std::sets or std::maps from an application to a DLL or vice-versa, something that IEEE 1516 federates must do. For details about the patch go to http://www.dinkumware.com/vc_fixes.html.

To install the patch:

1. In the top level VR-Link directory, is a file called *XTREE-msvc++patch*. Rename this file *XTREE*.
2. Make a back-up version of the original *XTREE*.

3. In the Visual Studio *include* directory (for example, *C:\Program Files\Microsoft Visual Studio\VC98\Include*), replace the original version of *XTREE* with the patched version.

Backward Compatibility

VR-Link 3.9.3 is highly compatible with VR-Link 3.9.1 and 3.9.2. For example, the *talk* and *listen* example programs from VR-Link 3.9.2 and previous versions compile and link unmodified against VR-Link 3.9.3.

Network Compatibility

HLA only

VR-Link 3.9.3 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 2.1
- DMSO RTI NG 4.0, and 6.0 (but not 5.0). The Linux version is not compatible with DMSO RTI NG.

DIS only

This release 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-Link 3.9.3 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. By default, VR-Link 3.9.3 uses RPR FOM 1.0.

If you want to use a version of the RPR FOM other than 1.0, pass the version number (0.5, 0.7, 0.8, 2.0006, 2.0014, or 2.0017) 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));
```

VR-Link examples like *f18* and *hlaNetdump* have a command line option, `-f`, that you can use to choose an RPR FOM version by passing a RPR FOM keyword as the argument to `-f`. The keywords for specifying different versions of the RPR FOM with the `-f` startup option are:

- RPR FOM 0.5: `vlRPR05`
- RPR FOM 0.7: `vlRPR07`
- RPR FOM 0.8: `vlRPR08`
- RPR FOM 1.0: `vlRPR10`
- RPR FOM 2.0 draft 6: `vlRPR20006`
- RPR FOM 2.0 draft 14: `vlRPR20014`

- RPR FOM 2.0 draft 17: `vlRPR20017`.

RTI Support

VR-Link 3.9.3 has been tested with DMSO RTI NG v6, Pitch RTI 1.3, and MÄK RTI 2.2.

VR-Link 3.9.3 may work with older versions of the MÄK RTI, but we recommend using it with release 2.2.

If you use the MÄK RTI, remember to make sure that VR-Link can find your FED file or FDD file, and optional *rid.mtl*. Put the FED file or FDD file in the directory from which you are running, or set the environment variable RTI_CONFIG to the directory that contains it. See *MÄK RTI Reference Manual* for a list of the options for specifying the location of the *rid.mtl* file.

New Features and Changes

VR-Link 3.9.3 was released to fix problems in the VR-Link 3.9.2 class reference documentation. All new features and changes in *VR-Link 3.9.2 Release Notes* apply to this release. VR-Link 3.9.3 has the following additional changes:

- Changes to *DtNetSocket* (*NetSocket.h*):
  - listenToMulticastGroup() allows you to specify a network interface to listen to.
  - Added an inspector function to query a multicast device.
- Changes to *DtSocket* (*Socket.h*) allow you to specify a network interface for both listenToMulticastGroup() and dropMulticastGroup().

Documentation Updates

The print and PDF versions of *VR-Link Developer's Guide* have been updated for this release. This release includes a PDF version of *MÄK Products Interoperability Guide*, a new manual that provides a high level introduction to MÄK products and how they work together.

Bug Fixes

VR-Link 3.9.3 fixes the following bugs:

- The links in the VR-Link 3.9.2 class documentation main page were wrong.
- Fixed a bug with IFF Publisher threshold for DIS. When mode 1 was enabled a PDU was sent for every publisher tick.
- Fixed a bug with the IFF DIS Decoder, which did not decode Iff System Mode correctly. This only affected the protocol-independent interface in DIS.
- Fixed a display error in printData() for attribute ModeCode in IFF SR.
- Fixed minor bugs in *DtFileTransporter*.

Known Problems

This release of VR-Link has the following known problems:

- VR-Link correctly encodes and decodes EnvironmentalProcess objects for RPR FOM 2, Draft 14. However, the RPR FOM specifies a way of encoding which prevents VR-Link from correctly decoding modified or custom Environmental-Records. Unfortunately, many MÄK products built with VR-Link use customized EnvironmentalRecords. If you use these products or if you use customized records in your applications, please do not use the RPR FOM 2 Draft 14 FOM Mapper. This is not a problem in other FOM versions, and it has been resolved in future versions of the FOM.
- The RTI 1516 API specifies that all strings passed to and from the RTI are handled as wide strings. VR-Link (and the MÄK RTI) store strings internally as narrow strings. This means that true multibyte wide strings used by RTI Federates may not be handled correctly when received by VR-Link. VR-Link handles name reservation wide strings correctly, however, as this is a 1516-only function. VR-Link provides conversion functions from Wide To Narrow/Narrow to Wide string conversion in *vlStringUtil.h*.