



MÄK Data Logger 4.3 Release Notes

This document provides the following release-specific information 4.3:

Systems Supported	2
Logger API	2
Qt Toolkit Compatibility	2
Compiler Compatibility on Windows	2
FLEXlm Support	2
ODBC Driver Support	3
Using Libraries and Binaries Built with Visual Studio 2005 and Later	3
Patch Required for AMD Dual-processor Windows PCs	4
Network Compatibility	4
RTI Support	4
FOM Support	5
New Features	5
Filtering by DIS Entity ID or HLA Object Name	5
Documentation Updates	5
Bug Fixes	6
Known Problems	7
Playing HLA 1.3 Logger Files in HLA 1516 Federations	7

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Systems Supported

Table 1 lists the platforms currently supported by MÄK Logger 4.3. Application code must be built with the indicated compilers in order to link to Logger libraries.

Table 1: Platforms supported

Platform	Compiler
Red Hat Enterprise Linux Workstation 4.0, and 5.0	Default compiler
Fedora 7	Default compiler
PC with Windows XP	Microsoft Visual C++ 7.1 and 8.0
PC with Windows Vista	Microsoft Visual C++ 8.0

Logger API

You must have VR-Link 3.13.1 and its required compiler versions to link the Logger libraries, but you do not need it to run the executables. Please see VR-Link documentation for information about required compilers.

You must have a VR-Link developer's license to compile plug-in or applications using the Logger API.

Qt Toolkit Compatibility

The Logger GUI is built using the Qt Toolkit, a cross-platform GUI toolkit. Logger 4.3 uses Qt 4.4.3. You do not need Qt to do development that does not affect the GUI.

Compiler Compatibility on Windows

Current and prior releases of MÄK products have been compiled using different versions of the Visual C++ compiler. When you run MÄK products together, for example, the Logger and the Stealth, we strongly recommend that you run versions created with the same compiler. Mixing products compiled with different compilers can result in program instability.

FLEXlm Support

Logger 4.3 uses FLEXlm 11.6 for Windows. You should update the FLEXlm files on your license server to this version. To update license server files, overwrite the existing files with the files in the *./flexlm11.6* directory. You do not need to replace your license files, unless your maintenance agreement has expired.

ODBC Driver Support

The Logger database export feature supports the following ODBC drivers:

- ♦ MySQL ODBC 3.51
- ♦ Microsoft Access.

Using Libraries and Binaries Built with Visual Studio 2005 and Later

All MÄK products built with Microsoft Visual Studio require the C Runtime Library to function. The C runtime libraries have always been available from Microsoft for download, they are also installed on a user's machine when a Microsoft compiler is installed. The C runtime libraries are not part of the normal Windows installation. For customers who plan to use MÄK products on machines that do not have a compiler installed, MÄK has historically distributed a copy of the C Runtime Libraries with MÄK products. These libraries were put in the *bin* directory used by the MÄK products. MÄK products would then use the libraries in the *bin* directory and customers would not have a problem if copies of the libraries were not already installed.

Unfortunately, with the release of the new C Runtime Libraries required by Microsoft Visual Studio 2005 (MSVC++8.0) and later, the libraries can no longer just be copied into the *bin* directory of an application. The libraries need to be installed correctly into Windows system folders. (The process is actually a little more complicated, a manifest file needs to be created to tell Windows where to find the libraries.)

To accommodate this change, MÄK is distributing the Windows installer for the C runtime libraries with all MÄK products released for MSVC++8.0 and later. The 32-bit installer is named *vcredist_x86.exe*; the 64-bit installer (if supported) is named *vcredist_x64.exe*. They are in the base directory of any installed MÄK product that requires them.

Running the installer requires Administrator privileges for the machine the installer is run on. MÄK has chosen to not integrate the MÄK installer and the Microsoft installer so as not to require users to have Administrator privileges to install MÄK products. Therefore, if you who do not have a compiler installed, or get error messages like “Software has not been installed correctly, please re-install”, you must apply the patch.

For more information see this Microsoft URL:

<http://msdn2.microsoft.com/en-us/library/ms235299.aspx>



You must ensure that the preprocessor defines `_SECURE_SCL=0`, and `_HAS_ITERATOR_DEBUGGING=0` are set for MSVC++8.0 and MSVC++9.0 builds. If these are not set, random crashes and assertions may be encountered during runtime.

Patch Required for AMD Dual-processor Windows PCs

VR-Link-based products use a high resolution counter for time calculations on Windows PCs. Customers who are running Windows on PCs with multiple AMD Athlon 64-bit processors may notice clock jitter, which may cause time in MÄK products to run backwards. This occurs when the Windows scheduler changes the CPU the MÄK process is using. If the high resolution counters on each processor are not synchronized, the application may witness a decrease in the high resolution counter value stored in the processor causing an incorrect time calculation. To fix this problem customers, apply the AMD Dual-Core Optimizer patch provided by AMD. You can get the patch at:

http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_871_9706,00.html



If you get an error when you try to access this URL, reload the page.

Network Compatibility

HLA only

Logger 4.3 was built against VR-Link 3.13.1 and is compliant with:

- ♦ RPR-FOM 1.0 and a subset of 2.0 (draft 6, 14, and 17)
- ♦ MÄK RTI 3.x.x (please see “[Known Problems](#),” on page 1-7.)

DIS only

Logger 4.3 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

RTI Support

We recommend using the latest version of the MÄK RTI. However, the Logger should work with other RTIs that conform to the HLA 1.3 specification or the IEEE 1516 SISO DLC API and are built using the same compiler as your version of the Logger.

When using the MÄK RTI, remember to make sure that the Logger can find your FED file, and optional *rid.mtl*, file by either putting them in the directory from which you are running, or by setting the environment variable the directory that contains them.

FOM Support

Logger 4.3 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. It also supports VR-Link's ability to support alternative FOMs through the FOM Mapper. By default, Logger 4.3 uses RPR FOM 1.0.

For information about FOM mapping and selecting the correct FOM Configuring the Logger for HLA in Chapter 2, "Installing and Configuring the Logger", in *MÄK Data Logger User's Guide*.

New Features

Logger 4.3 has the following new features:

- Support for filtering by DIS entity ID or HLA object name.
- To support entity ID tracking, the Logger now uses a new file format. The Logger can read files created with previous versions and can optionally convert old files to the latest version.
- Support for pausing recording through the remote control API.
- Filtering of DIS remote control PDUs by site ID. By default, the old behavior of responding to all remote control PDUs on the current port is maintained. To enable, site-based filtering use `SetRemoteControlSettings` with `allowAll` argument of false and ensure the logger and remote control site IDs are set correctly.
- Ability to set the default entity publisher through the API.
- Ability to install custom entity publishers and custom simoutputs to permit processing of packets before they reach the entity publisher level.
- Support for FLEXlm 11.6.

Filtering by DIS Entity ID or HLA Object Name

The Logger now filters messages by DIS entity ID and HLA object name. To use this feature, legacy Logger files must be upgraded to and saved in the current Logger format. If a Logger file is in an older format, the Logger automatically prompts you to upgrade it when you open it. For details, please see Section 5.9.4, "[Filtering by Entity ID or Object Name](#)", in *MÄK Data Logger User's Guide*.



Although the Logger automatically prompts you to upgrade Logger files to the latest format, it does not save the upgraded file. To use the new filtering feature, you must first save the upgraded file.

Documentation Updates

The PDF version of *MÄK Data Logger User's Guide* and the online help have been updated to support the new features.

Bug Fixes

Logger 4.3 fixes the following bugs:

- ♦ Dead-reckoning briefly miscalculated when changing the time scale.
- ♦ In DIS, dead-reckoning sometimes caused entities to jump around when replaying at slower than realtime speed.
- ♦ A bug with the splash screen caused occasional crashes on some systems.
- ♦ Fixed many minor compiler-specific issues to improve the ease-of-use of the logger API.
- ♦ On windows, the Logger occasionally crashed on exit due to problems related to drag and drop.
- ♦ On linux, the Logger occasionally crashed on exit due to problems with protocol-specific plugins.
- ♦ The Logger control toolkit library files were misnamed on some platforms.
- ♦ Fixed several issues with database export on non-windows platforms.
- ♦ Fixed a memory leak in custom logger applications.
- ♦ A bug in the lgrControl example caused it to ignore site:app:exercise command-line arguments.
- ♦ The GUI did not update properly while recording if the stop condition was set by SetStopCondition is 1 (duration).
- ♦ Entities sometimes disappeared after unpause if pausing while recording in HLA.
- ♦ Wildcard fields did not work correctly when filtering by entity type in DIS.
- ♦ The Logger had a display error when opening a recording file via remote control while a playback file was already open.
- ♦ Recreating a Logger instance caused an exception.
- ♦ Some configurations of time-managed recording in HLA 1516 caused a crash.
- ♦ The Logger has problems with files that had very large messages, in particular, processing checkpoints that had thousands of entities.
- ♦ Merging logger files no longer creates removals that did not exist in either original tape. This means that objects not explicitly removed persist until the end of the merged file instead of to the end of the file they came from.
- ♦ Unpause commands were ignored while recording is paused. Record commands would unpause recording, but unpause commands would not.

Known Problems

This section lists known problems with Logger functionality:

- ♦ The HLA 1516 Logger crashes on exit if you use the MÄK RTI 2.4.2 through 3.1.1. This is due to a problem in the RTI.
- ♦ Logger files that include the VR-Forces embarkation feature in DIS exercises, such as *embarkdemoDIS.lgr*, do not reset embarkation status after time jumps. To correct the embarkation state of entities, stop playback and start playing the file from the beginning.
- ♦ If your computer has multiple network adapters, it might select the wrong one and be unable to connect to the DIS network. To work around this problem, set the Destination Address to 10.255.255.255.
- ♦ Due to a bug in VR-Link 3.11.1, on Fedora 7 and Solaris 10, the Logger might not compile unless you edit `include/vlconfig.h` to remove the following lines:

```
typedef unsigned char byte, *pbyte;  
typedef unsigned long int DWORD, *PDWORD;  
typedef long int LONG, *PLONG;
```
- ♦ If you are running the Logger in HLA 1516 with the MÄK RTI, and the RTI parameter `RTI_enableLrcWebService` is enabled, the Logger might pause when starting or stopping recording. This pause can be 30 seconds or longer and the Logger might not be responsive during this time.

Playing HLA 1.3 Logger Files in HLA 1516 Federations

In general, the Logger uses the same file format for HLA 1.3 and HLA 1516 Logger files. You can record a Logger file from an HLA 1.3 federation, and play it back into an HLA 1516 federation (and vice versa). However, you must use the same FOM representation during record and playback. For example, if you use an HLA-1.3-style FED file during recording, you must use an HLA-1.3 style FED file during playback, even if you are using the IEEE 1516 version of the Logger and an IEEE 1516 RTI. (VR-Link and the MÄK RTI allow you to use HLA-1.3-style FED files with IEEE-1516-based federates, and vice versa).

The main reason that consistency in FOM format is necessary is that IEEE 1516 uses different names for the "Root" classes of the Object class hierarchies. A 1.3-style FED file requires a Root class a 1516-style XML files requires a Root class called *HLAObjectRoot*. The reason this can be a problem is that if the Logger is playing an HLA-1.3-based Logger file into a federation that is using a 1516-based XML file it might come across an instance of a class called, for example, "ObjectRoot.Vehicle". If it tries to register an object of this class, the RTI will complain that no such class exists. There might be a class called *HLAObjectRoot.Vehicle* in the current FOM, but the RTI or Logger does not know that this is actually the same class.

