



MÄK Data Logger 5.2.2 Release Notes

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Systems Supported

Table 1 lists the platforms currently supported by MÄK Logger 5.2.2. 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 5.0	Default compiler (32-bit)
Red Hat Enterprise Linux Workstation 6.0	Default compiler (64-bit)
PC with Windows XP/Vista/Windows 7	Microsoft Visual C++ 8.0 Microsoft Visual C++ 10.0 (32-bit and 64 bit)



You must be an administrator to install MÄK products on Windows Vista.

Logger API

You must have VR-Link 4.0.9d 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 5.2.2 uses Qt 4.7.4. 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.

License Manager

To run the licensed version of Logger, you must install license management software. Logger 5.2.2 uses FLEXlm 11.11 for all versions. If you are upgrading from a version of the MÄK Data Logger that used an older version of FLEXlm, you must upgrade your license management files. You do not need a new license. Licenses are forward compatible.

The License Manager files are not part of the Logger installer. You can download them at:

- ♦ Windows:
<ftp://ftp.mak.com/out/MAKLicenseManager-win-setup.exe> (for 32-bit systems)
<ftp://ftp.mak.com/out/MAKLicenseManager-win64-setup.exe>
- ♦ Linux: <ftp://ftp.mak.com/out/MAKLicenseManager-linux-setup.tar.gz>

License management support is available at <http://www.mak.com/support/get-licenses/license-support.html>.

ODBC Driver Support

The Logger database export feature supports the following ODBC drivers:

- ♦ MySQL ODBC 2.50 Driver
- ♦ MySQL ODBC 5.351 Driver
- ♦ MySQL ODBC 5.1 Driver
- ♦ MySQL ODBC 5.2w Driver.
- ♦ Microsoft Access.

For the VC10 64-bit Logger, a 64 bit connector is required.

The MySQL 5.1 server and connector can be downloaded at:

- ♦ server: <http://dev.mysql.com/downloads/mirror.php?id=411970>
- ♦ connector: <http://dev.mysql.com/downloads/mirror.php?id=411736>

Network Compatibility

HLA only

Logger 5.2.2 was built against VR-Link 4.0.9d and is compliant with:

- ♦ RPR-FOM 1.0 and a subset of 2.0 (draft 6, 14, and 17).
- ♦ MÄK RTI 4.1 or later .

DIS only

Logger 5.2.2 supports DIS 4, 5, and 6.

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, the IEEE 1516 SISO DLC API, or HLA Evolved 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.

Support for HLA Evolved

Logger 5.2.2 updates the HLA Evolved version to be compatible with MÄK RTI 4.0.4, VR-Link 4.0.9d, and the HLA Evolved specification. A full discussion of this issue is as follows:

The HLA Evolved libraries included with the MÄK RTI 4.0 through 4.0.3 were unintentionally built against one of the last draft versions of the HLA 1516-2010 specification header files. Between the version of the header files used by the MÄK RTI and the final version of the specification there was one change. The HLA Evolved API has three functions for createFederationExecution. In the version originally used by the MÄK RTI there was an ambiguity. Due to optional parameters, two of these functions could be invoked in such a way that it was not clear which one was being used. Here are the functions as they used to be:

```
// variation 1
virtual void createFederationExecution (
    std::wstring const & federationExecutionName,
    std::wstring const & fomModule,
    std::wstring const & logicalTimeImplementationName = L"");

// variation 2
virtual void createFederationExecution (
    std::wstring const & federationExecutionName,
    std::vector<std::wstring> const & fomModules,
    std::wstring const & logicalTimeImplementationName = L"");

// variation 3
virtual void createFederationExecution (
    std::wstring const & federationExecutionName,
    std::vector<std::wstring> const & fomModules,
    std::wstring const & mimModule,
    std::wstring const & logicalTimeImplementationName = L"");
```

Variation one is unambiguous. However, consider the following code:

```
createFederationExecution( L"FedExName", vectorOfFomModules, L" ");
```

It is not clear whether you are using variation two or three, and the compiler would throw an error.

To fix this ambiguity, the final version of the HLA Evolved API renamed the third version of the function to `createFederationExecutionWithMIM`. However this revision did not make it into the header files used by the MÄK RTI. RTI 4.0.4 corrects this and uses the final version of the HLA Evolved header files. As a result, we recommend that anyone using the MÄK RTI with HLA Evolved upgrade to this version. Because the API has changed between RTI 4.0.3 and 4.0.4, any HLA Evolved federates built against previous MÄK RTI versions will need to be recompiled against the new version.

Because VR-Link's HLA libraries are built against the MÄK RTI, this issue also exists in previous versions of VR-Link that supported HLA Evolved. We recommend that anyone using VR-Link with HLA Evolved upgrade to version 4.0.3 or later, which is built against the latest RTI and uses the renamed function.

This problem affects MÄK products built against the MÄK RTI and VR-Link that support HLA Evolved, such as Logger 5.0. Logger 5.2.2 has been built against VR-Link 4.0.9d and is compliant with the final version of the standard.

As a general rule, any version of the Logger is compatible with any version of the RTI that supports the same platform. However, due to this header file change, previous versions of the Logger and the MÄK RTI may not be compatible when using HLA Evolved. This change does not affect compatibility between the Logger and the MÄK RTI when using HLA 1.3 or 1516-2000.

When using HLA Evolved:

- ♦ Logger 5.0 is only compatible with MÄK RTI 4.0, 4.0.1, 4.0.2, and 4.0.3.
- ♦ Logger 5.1 and later releases are only compatible with MÄK RTI 4.0.4 and later releases.

FOM Support

Logger 5.2.2 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 5.2.2 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 Users Guide*.

New Features

Logger 5.2.2 has the following new features:

- Updated to use VR-Link 4.0.9d.
- Updated to use FLEXlm 11.11.
- The Connection dialog box now stays open when you disconnect or a connection fails.
- The Logger could previously repair files that did not have the finalization data at the EOF; however, the repair still required that the file end with a valid Logger packet. In the cases where a file ends with neither the finalization data or a valid packet, the Logger will now attempt to repair the file by searching from the beginning of the recording for the last good packet. The file will be repaired up to that point.
- Under Windows, the Logger opens playback files with the "random access" flag. This flag signals the operating system to cache the file in RAM. This flag can be disabled when loading large files (many GB) or processing files sequentially (for example, using the readFile example). In the API, the playback file classes now have a randomAccess flag. For the Logger application, this flag can be modified with the command and command variable shown below:

```
<var name="playbackfilesUseRandomAccess" type="bool" value="true"/>
<command domain="Simulation" protocol="none"
  command="SetRandomAccessForPlaybackFiles">
  <param name="playbackfilesUseRandomAccess"
    var="playbackfilesUseRandomAccess"></param>
</command>
```

Bug Fixes

This release fixes the following problems:

- The lgrControlGui and prebuilt lgrControl example no longer require a VR-Link license. 49848
- A Logger built for one version of HLA (for example, 1516) can now join a federation created using a FOM from another version of HLA (for example, *VR-Link.fed* for 1.3) by using the other FOM version in its connection configuration. 50402
- The Play button became disabled if you jumped to the end of a recording. 49645
- Loading RPR FOM 2 draft 19 or later crashed the Traffic Analyzer. 50829

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.
- ♦ On Linux, online help may not work if the Logger lib directory is not in the LD-LIBRARY_PATH or the RTI *lib* directory is before it.

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.

