MÄK Data Logger 3.9a Release Notes

This document provides the following release-specific information for MÄK Data Logger 3.9a:

Logger 3.9a is a maintenance release that replaces Logger 3.9. For customer convenience, all the information in the *MÄK Data Logger 3.9 Release Notes* is repeated in the *MÄK Data Logger 3.9a Release Notes* .

Document ID: LOG-3.9a-2-040507

Systems Supported

Logger 3.9a is being released for the following platforms:

- PC with Windows 2000/XP
- Red Hat Linux 8.0 and 9.0
- SGI IRIX 6.5 n32
- Sun Solaris version 2.8.

Logger API and Logger File API

You must have VR-Link 3.9.1 and its required compiler versions to use the Logger file library or the Logger API, but you do not need it to run the executables. See VR-Link documentation for information about required compiler versions.

You must have a VR-Link developer's license to compile plug-ins or applications that use the Logger API or Logger file API.

Qt Toolkit Compatibility

The Logger GUI is built using the Qt Toolkit, a cross-platform GUI toolkit. If you use the Logger API to change the GUI, you need to get a Qt license and install Qt. Logger 3.9a was built with Qt 3.3.1.

RAM and Memory Requirements

To install and run the Logger on a PC, we recommend the following minimum configuration:

- Pentium class PC 400 MHz or above
- 52 MB disk space
- 64 MB RAM.

On UNIX systems, the Logger requires the following amount of disk space:

- Linux and Sun Solaris - 52 MB
- SGI IRIX - 70 MB.

Network Compatibility

HLA only

Logger 3.9a was built against VR-Link 3.9.1 and is compliant with:

- RPR-FOM 1.0 and a subset of 2.0 (draft 6, 14, and 17)
- MÄK RTI 2.2
- DMSO RTI NG v6.

Logger 3.9a is compatible with applications that use earlier versions of VR-Link if they support versions of the RPR FOM listed above.

DIS only

Logger 3.9a 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.

RTI Support

Logger 3.9a works with the MÄK RTI 2.2, and DMSO RTI NG v6.

Logger 3.9a works with older versions of the MÄK RTI, but we recommend using it with release 2.2.

When using the MÄK Real-time 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 RTI_CONFIG to the directory that contains them.

FOM Support

Logger 3.9a 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 3.9a uses RPR FOM 1.0.

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`.

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

New Features and Changes

Logger 3.9a has the following new features and changes:

- Support for the HLA 1516 specification
- A new directory structure to support HLA 1516
- Support for FLEXlm 9.2
- Updated plug-in API and Logger API
- New configuration parameters
- New startup options for configuring HLA time management.

Support for the HLA 1516 Specification

Logger 3.9a supports the SISO Dynamic Link Compatibility HLA API Product Development Group (HLA API PDG, *http://www.sisostds.org/index.cfm*) draft 1516 API. This API, unlike the IEEE 1516 API, supports dynamic link compatibility between different RTI implementations.

As part of support for HLA 1516, the following changes have been made:

- The libraries *lgrFile5RT* (DIS) and *lgrFileRPRRT* (HLA 1.3) are replaced by *libLgrFile5RT* (DIS), *libLgrFileHLA13RT* (HLA 1.3), and *libLgrFileHLA1516RT* (HLA 1516).
- The libraries *lgrCore5RT* (DIS) and *lgrCoreRPR* (HLA 1.3) are replaced by *libLgrCore5RT* (DIS), *libLgrCoreHLA13RT* (HLA 1.3), and *libLgrCoreHLA1516RT* (HLA 1516).
- The libraries *libLogger5RT* (DIS) and *libLoggerRPRRT* (HLA 1.3) are replaced by *libLogger5RT* (DIS), *libLoggerHLA13RT* (HLA 1.3), and *libLoggerHLA1516RT* (HLA 1516).
- The libraries *libLoggerGui5RT* (DIS) and *libLoggerGuiRPRRT* (HLA 1.3) are replaced by *libLoggerGui5RT* (DIS), *libLoggerGuiHLA13RT* (HLA 1.3), and *libLoggerGuiHLA1516RT* (HLA 1516).
- The libraries *libLoggerApp5RT* (DIS) and *libLoggerAppRPRRT* (HLA 1.3) are replaced by *libLoggerApp5RT* (DIS), *libLoggerAppHLA13RT* (HLA 1.3), and *libLoggerAppHLA1516RT* (HLA 1516).
- An FDD file for RPR FOM 2.0 draft 14 is provided (*VR-Link20014.xml*).

To update existing code to work with this release of Logger 3.9, do the following:

- Code that communicates directly with the RTI must be updated
- If you are building for HLA, you must still set #define DtHLA=1. If you are building for RTI 1516, you must also use #define DtHLA_1516=1.

New Directory Structure

Logger 3.9a has several changes to its directory structure. The *binRPR* directory has been replaced with *./binHLA13* and *./binHLA1516*, for the executables for the HLA 1.3 specification and HLA 1516 specification. The *./plugins/binRPR* directory has been replaced with *./plugins/binHLA13* and *./plugins/binHLA1516*.

The FLEXlm software is in the *./flexlm92* directory, instead of *./flexlm*. The directory from which you run your license server, should still be named *flexlm*, for example, *C:\flexlm*.

Support for FLEXlm 9.2

Logger 3.9a uses FLEXlm 9.2. You must replace the files in the flexlm directory on your license server with the new files.

If this is the first time you are installing a MÄK product, just follow the steps for installing license management that are in *MÄK Data Logger User's Guide*.

To update your *flexlm* directory:

1. If the license server is running, shut it down with *lmdown*.
2. Back up the files in the *flexlm* directory on the license server (*C:\flexlm* on Windows, typically */usr/local/flexlm* on UNIX). (For example, to *flexlm.old*.)
3. Copy all of the files in *./flexlm92* to the *flexlm* directory on the license server.
4. Copy your license files (*.lic* or *.dat*) from the backup directory to the *flexlm* directory.
5. Start the license server.
6. Run a licensed MÄK product and verify that it is checking out a license.

FLEXlm is backwards compatible, so you do not have to change your license file, and MÄK applications built with earlier versions of FLEXlm will continue to work with FLEXlm 9.2. If you have any problems or questions, contact MÄK support at support@mak.com.

Changes to the Logger API

Logger 3.9a makes it considerably easier to use the Logger API to override or modify default Logger behavior. The following classes can now be easily overridden:

- *LtPacketInfo*
- *DtObjectInstanceDesc*
- *DtObjectInstanceMap*
- *DtBaseFomDesc*
- *DtLgrHlaUpdateMsg*
- *DtLgrCommander*
- *DtLgrBaseState*
- *DtLgrState*
- *DtAnnotationManager*.

To override a class from this list, implement the (static) member functions that create, copy, or duplicate instances of the new class; then register your member functions with the provided (static) registration function(s). The Logger instantiates (or copies, or duplicates) instances of the above classes only via the registered method(s). Therefore, if you register your own member functions, you will force the Logger to use instances of the replacement class. See the comments in the header files or class documentation for details of each class.

New Configuration Parameters

Logger 3.9a has the following new configuration parameters for HLA:

- **federationName** – specifies the federation name (this parameter corresponds to the `-x` startup option)
- **federateName** – specifies the name of the Logger federate (this parameter corresponds to the `-N` startup option.)

Configuring HLA Time Management

MÄK Data Logger 3.9a has the following new and revised startup options for HLA time management:

- `-U {0 | 1}` - enables or disables use of time management. If time management is enabled, the Time-regulating Mode check box in the Logger playback window is checked. If `-w` is set to 0 (disabling time management), `-U 1` overrides `-w`. (HLA only).
- `-u {0 | 1}` - enables or disables use of time management. If time management is enabled, the Time-constrained Mode check box in the Logger Record window is checked. If `-w` is set to 0 (disabling time management), `-u 1` overrides `-w`. (HLA only). (HLA only).
- `-w {0 | 1}` - enables or disables use of time management. This argument enables the Time-regulating Mode and Time-constrained Mode checkboxes in the Logger, but does not select them. If you set `-w` to 0 and do not configure time management with `-u`, `-U`, or in the *logger.mtl* file, then time management will not be available through the Logger GUI. The `-w` option overrides the useTimeManagement parameter in *logger.mtl*.

To use time management in the Logger, you must configure your RTI for time management services.

This **useTimeManagement** parameter in *logger.mtl* enables or disables time management. It is the equivalent of the `-w` startup option. The syntax is:

```
(setqb useTimeManagement mode)
```

where mode is:

- 0 = disable time management
- 1 = enable time management.

Default: 0.

Documentation Updates

The changes to the Logger API introduced in this release are not documented in *MÄK Data Logger User's Guide*. They will be added to a future version of the manual. Please note the following corrections to *MÄK Data Logger User's Guide*:

- The printed version of *MÄK Data Logger User's Guide* states that the MÄK RTI comes with, or is included with, all MÄK products. These statements mean that the MÄK RTI software is on product CDs. It does not mean that purchase of a MÄK product includes a MÄK RTI license. The MÄK RTI is licensed separately from other MÄK products.
- Section 7.5.4, Loading Plug-ins says that the Logger loads all plug-ins that are in the *./plugins* directory. This is incorrect. You must place plug-ins in the *./plugins/bin5* or *./plugins/binHLA13*, or */plugins/binHLA1516* directory.
- Section 2.6, Localizing the Logger Interface, in *MÄK Data Logger User's Guide*, does not describe how to implement the translation files. The following section updates section 2.6.

The Logger 3.9a online help uses the Qt Assistant help browser, not the default web browser for your computer.

Applying the Language Files

To put the language file into effect:

1. Set your computer's environment to the proper language.
2. Set the **language** variable in *logger.mtl* to the correct language, or start Logger with the `-G` command line option.

Fixed Bugs

The following problems have been fixed:

- Previous releases of the Logger required that time management always be enabled when recording HLA exercises. This requirement has been removed. See "Configuring HLA Time Management," on page 1-7 for details about configuring use of time management.
- Previous releases of the Logger had a limit on the size of a packet that could be retrieved from a recording. This created problems for HLA recordings that had large records. This problem has been fixed. Now, there is no limit on the acceptable size of a packet record.
- On IRIX platforms, the Logger for DIS no longer crashes when the time scale is changed during playback.
- In the HLA version of the Logger, it was possible to record a tape which subsequently could not be read (played back) because one or more of the lines in the FOM description table exceeded the implicit limit. This limitation is now removed.
- In the HLA version of the Logger, when entering Pause during playback, the Logger recreated any objects that happened to exist at some other time in the tape, but were currently deleted. This behavior is now eliminated.
- In the HLA version of Logger 3.9 "object removal" packets were recorded with wrong object-handles, thus disassociating the "object deletion" events from the corresponding "object update" events. This is now fixed, and all packets corresponding to updates or removal of a given object have the same object handle.
- In the HLA version of Logger 3.9, during playback, the Logger experienced unexpected object behavior, and occasional crashes. This is now fixed.

Known Problems

Logger 3.9a has the following known problems:

- If you run the MÄK RTIspy LRC GUI with the Logger, the Logger may crash the second time you play a recording.
- In DIS, when you play a recording immediately after you have recorded it, the Logger displays the following error message:

  ```
  Tried to subtract InterestInPduKind to be lower than the number of
    callbacks for PDU kind #0.
  ```

  You can ignore this message.
- Skip time in HLA performs poorly if you try to skip a large amount of time or try to skip backwards in the recording.