



MÄK Real-time RTI 1.3.3 Release Notes

This document provides the following release-specific information for MÄK Real-time RTI 1.3.3 and 1.3.3-ngc:

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Overview

MÄK Real-time RTI 1.3.3 is an implementation of a subset of the HLA Interface Specification, version 1.3.

There are two versions of MÄK Real-time RTI 1.3.3 for PCs - one that is link-compatible with DMSO RTI 1.3 v4, or later (MÄK Real-time RTI 1.3.3), and one that is link-compatible with DMSO RTI 1.3 NG v1, v2, v3.0, and v3.2 (MÄK Real-time RTI 1.3.3-ngc.) Each implements the exact same header files as the corresponding DMSO RTI.

Supported Systems

Table 1 lists the platforms supported by the MÄK Real-time RTI 1.3.3. Please contact MÄK if you need it for another platform. Application code must be built with the indicated compilers in order to link to the MÄK Real-time RTI libraries.

Table 1: Platforms supported

Platform	Compiler
SGI IRIX6.5 (MÄK Real-time RTI 1.3.3-ngc only)	MipsPro7.2.1 C++ compiler (available from SGI)
SGI IRIX6.2 or later (MÄK Real-time RTI 1.3.3 only)	MipsPro7.1 C++ compiler (available from SGI)
Sun Sparcstation with Solaris2.6 or later	SPARCompiler C++ version 4.2 (available from Sun)
PC with Red Hat Linux 6.0 (Linux 2.2.5)	GNU C++ (g++) distributed with Red Hat distribution. The command: <code>g++ -v</code> returns: gcc version egcs-2.91.66 19990314/Linux (ecgs-1.1.2 release)
PC with Windows NT 4.0, Windows 95/98/2000	Microsoft Visual C++ 6.0.

Backwards Compatibility

Applications that were built against MÄK Real-time RTI 1.3.x work with the MÄK Real-time RTI 1.3.3 without recompiling. MÄK Real-time RTI 1.3.3 is network compatible with MÄK Real-time RTI 1.3.2.

Network Compatibility

The MÄK Real-time RTI is not network compatible with the DMSO RTI. (In general, no two RTI implementations are network compatible, due to differences in the low-level network mechanisms that they use (which include, but are not limited to packet layout.)) Applications that want to interoperate in the same federation execution must all use the same RTI implementation. A federation can easily switch from one RTI implementation to another between runs, but during each run, all participants must agree on which RTI to use, much as they must also agree on which FOM to use.

Compatibility with the DMSO RTI

Because DMSO RTI 1.3 NG is not link compatible with the previous generation of DMSO RTI releases, we have released a separate release of MÄK Real-time RTI 1.3.3 for each version of the DMSO RTI: one that is compatible with DMSO RTI NG (MÄK Real-time RTI 1.3.3-ngc), and one that is compatible with the previous generation of RTIs (MÄK Real-time RTI 1.3.3.) The version that supports DMSO RTI NG is installed in the directory *makRti1.3.3-ngc*. The version that supports the previous generation of RTIs is installed in the directory *makRti1.3.3*.

With the exception of one additional function (`RtReadFileDescriptor()`, described in MÄK Real-time RTI documentation), the MÄK Real-time RTI has the exact same API as the DMSO RTI version 1.3v4 or later, or as DMSO RTI 1.3 NG v1, v2, v3.0, and v3.2. Unless you are using this optional function, an application built against the DMSO RTI does not need to be recompiled in order to be used with the MÄK Real-time RTI, or vice versa.

MÄK Real-time RTI 1.3.3 uses the same FED file format as the DMSO RTI, but a different RID file format. (RIDs are RTI-implementation dependent.)

Changes to Library Names

For MÄK Real-time RTI 1.3.3, library names match those of the comparable DMSO RTI.

Table 2: Library names

MÄK Real-time RTI version	DMSO RTI version	Library names
1.3.3	1.3v4 or later	<i>rit13</i> , <i>fedtime</i>
1.3.3-ngc	1.3NG v3.2	<i>libRTI-NG</i> , <i>libfedtime</i>

On Unix platforms, DMSO RTI 1.3 NG-v3 supplies additional third party libraries (*liborbsvcs*, *libTAO*, *libACE*, and so on). Because these libraries are linked with DMSO's *libRTI-NG*, you should not have to link explicitly with these libraries in any executables that you might build. The MÄK Real-time RTI does not rely on these libraries, and executables provided by MÄK in -ngc releases have been linked ONLY against *libRTI-NG*. This makes them compatible with both the DMSO RTI and the MÄK Real-time RTI.

Federation Time

The MÄK Real-time RTI 1.3.3 files *libfedtime.so* and *libfedtime.dll* implement the same subclass of `RTI::FedTime` as DMSO's file *libfedtime*. This subclass is called *RTIfedTime* and its definition is in *fedtime.h*. You may use either the MÄK Real-time RTI's *libfedtime* or the DMSO RTI's *libfedtime* with either MÄK's or DMSO's *libRTI*.

Documentation

Because the MÄK Real-time RTI implements the same interface specification as the DMSO RTI, the documentation provided with the DMSO RTI applies to the MÄK Real-time RTI as well, apart from the few differences we describe in this release note and the MÄK Real-time RTI Reference Manual. The DMSO RTI documentation is included with the MÄK Real-time RTI in the *.doc* directory. It is also available on DMSO's HLA web site: <http://hla.dmsomil>.

New Features

MÄK Real-time RTI 1.3.3 has the following new features:

- ♦ Allows you to set buffer size for tcp packets.
- ♦ The rtiexec supports best effort communications over a WAN.
- ♦ The RID file has a new flag that lets you generate random federate IDs. This is useful if you want to have multiple federates in the same process without using the rtiexec.
- ♦ Allows you to enter commands into the rtiexec window.

The *MÄK Real-time RTI Reference Manual* has been updated. All new features are described in the updated manual.

Minor Changes and Bug Fixes

This section describes minor changes and bug fixes:

- ♦ Reliable sending now works more robustly.
- ♦ Federates now get previously registered synchronization points forwarded to them when they join.
- ♦ In previous releases, moveFrom() calls copied handles from one list to another, but did not delete them from the first list. The RTI specification indicates that moveFrom() calls should be equivalent to copying a handle from the first list to the second list, and then deleting the handle from the first.
- ♦ Fixed a problem that caused the MÄK Real-time RTI to crash if a federate resigned before all its announced synchronization points had been achieved.
- ♦ Fixed a problem that caused the MÄK Real-time RTI to crash if federate names were longer than 15 characters. The limit is now 16 characters. If a federate has a name longer than 16 characters, only the first 16 are used.
- ♦ There is no longer a limit on the number of object and interaction classes.

