RTA-OS RCARX3R7/ARM

Release Note - Version 2.0.0 (25-09-2018)

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Safety Notice

This ETAS product fulfills standard quality management requirements. If requirements of specific safety standards (e.g. IEC 61508, ISO 26262) need to be fulfilled, these requirements must be explicitly defined and ordered by the customer. Before use of the product, customer must verify the compliance with specific safety standards.

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1 Introduction

RTA-OS is an AUTOSAR compliant Operating System and associated tooling. This document provides release information for the RTA-OS RCARX3R7/ARM port plug-in that customizes the RTA-OS development tools for the Renesas R-Car x3 Cortex-R7 with the ARM_DS_5_V6 compiler. It supplements the more general information you can find in the *Release Note*.

1.1 Version Information

This is Version 2.0.0 of the RTA-OS RCARX3R7/ARM plug-in.

1.2 Installation

The installation process is covered in detail in the *RCARX3R7/ARM Port Guide*.

2 Open EHI Calls

Open issues are referred to by their call number in the ETAS Helpdesk International (EHI) system.

No EHI calls are open.

3 Change History

3.1 Version 2.0.0

Additional Features

The following features have been added to this release:

- First Full Release.
- First release to be fully tested on both the RCarH3R7 and RCarV3HR7 variants

Modified Features

No features have been modified in this release.

Removed Features

No features have been removed from this release.

3.2 Version 1.99.5 (Preview Release)

Additional Features

The following features have been added to this release:

- Sixth Early Access release.
- Macros to enable, disable and clear GIC interrupts without corrupting the priority.
- Macros to enable and disable all GIC interrupts on a CPU without corrupting the priority.
- Support for the AUTOSAR ISR source API functions (i.e. ClearPendingInterrupt(), DisableInterruptSource() and EnableInterruptSource()).
- MISRA compliance to conform to the MISRA2012 standard.
- FPU support.
- Target option to control the Floating-Point mode used by the compiler.
- Target option to control the Floating-Point registers saved and restored by RTA-OS on ISR or task preemption.
- Tests to alert user if they use interrupts or exceptions that are required by RTA-OS.
- RCarH3R7 variant to support Renesas R-Car H3 chips.
- RCarV3HR7 variant to support Renesas R-Car V3H chips.

Modified Features

The following features have been modified in this release:

- Interrupt vector information for GenericRCARx3R7 variant.
- TrustedWithProtection support has been improved to better handle the enabling and disabling of the MPU in interrupts.

Removed Features

No features have been removed from this release.

3.3 Version 1.99.4 (Preview Release)

Additional Features

The following features have been added to this release:

- Fifth Early Access release.
- ECC task support.
- Support for memory and timing protection.
- Support for aligning stack to memory protection regions.
- Support for untrusted stack testing in GIC ISRs.

Modified Features

No features have been modified in this release.

Removed Features

No features have been removed from this release.

3.4 Version 1.99.3 (Preview Release)

Additional Features

The following features have been added to this release:

- Fourth Early Access release.
- BCC task support only.
- SC1 AUTOSAR conformance only.
- The target option ’Interrupt Priorities’ has been added to allow code to be built to use 16 or 32 levels of interrupt priority.

8 Change History

- Preliminary support for target protection has been added.
- Preliminary support for tracing via SCIF1 and micro USB connector CN26 on the Renesas H3 Salvator-X EVB has been added.

Modified Features

No features have been modified in this release.

Removed Features

No features have been removed from this release.

3.5 Version 1.99.2 (Preview Release)

Additional Features

The following features have been added to this release:

- Third Early Access release.
- BCC task support only.
- SC1 AUTOSAR conformance only.
- The target option 'OsLinkerModel' has been added to allow code and constant data sections to be linked into either the ITCM or System RAM.
- Preliminary support for the CliveDevices and PizzaPronto sample applications.

Modified Features

The following features have been modified in this release:

- The target's Memory Mapped Register definitions have been updated to include a number of inline C functions.
- The code that initializes and reads the stopwatch in applications such as HelloWorld, CliveDevices, and PizzaPronto now accesses the registers of the Performance Management Unit via inline C functions.
- The InitTarget() function now initializes the system via a series of small statically defined sub-functions that each serve a specific purpose.
- The target's assembly language initialization code now accesses the registers of coprocessor 15 via assembly language macros.

- The target's initialization code now enables the MPU with regions covering the ITCM, DTCM, System RAM and devices in the top 1 GB of the address space.
- The generation of source files now uses the compiler's -save-temps and -xassembler options.
- Test coverage of the RTA-OS libraries has been improved.

Removed Features

No features have been removed from this release.

3.6 Version 1.99.1 (Preview Release)

Additional Features

The following features have been added to this release:

- Second Early Access release.
- BCC task support only.
- SC1 AUTOSAR conformance only.
- Preliminary support for the HelloWorld sample application.

Modified Features

The following features have been modified in this release:

- The inline assembly language code has been marked as volatile. This prevents the compilers optimizer from re-ordering or removing the instructions.
- The -mno-unaligned-access option has been added to the library compiler options. This prevents the compiler from using word or half word load or store instructions to access unaligned data.
- The ordering of the assembly language .arm and .thumb directives has been modified such that they now always follow the .cpu cortex-r7 directive. This works around a bug in ARM Compiler 6.4 that causes it to produce the wrong code if the .thumb directive comes before the .cpu cortex-r7 directive.
- The Os_setjmp() and Os_longjmp() functions no longer use the setjmp() and longjmp() functions from the ARM C library.
- Test coverage of the RTA-OS libraries has been improved.

10 Change History

Removed Features

No features have been removed from this release.

3.7 Version 1.99.0 (Preview Release)

Additional Features

The following features have been added to this release:

- Initial Early Access release.
- BCC task support only.
- SC1 AUTOSAR conformance only.
- Support for ARM Compiler 6.4.
- Preliminary interrupt support.

Modified Features

No features have been modified in this release.

Removed Features

No features have been removed from this release.

4 Fixed EHI Calls

Bugs that have been fixed are referred to by their call number in the ETAS Helpdesk International (EHI) system.

No EHI calls have been fixed in this release.

5 Limitations

5.1 Installer

There are the following limitations for the installer:

Limitation	None.
Workaround	None.

5.2 RCARX3R7ARM DLL

There are no known limitations.

6 Contacting ETAS

6.1 Technical Support

Technical support is available to all users with a valid support contract. If you do not have a valid support contract, please contact your regional sales office (see Section 6.2.2).

The best way to get technical support is by email. Any problems or questions about the use of the product should be sent to:

rta.hotline.uk@etas.com

If you prefer to discuss your problem with the technical support team, you call the support hotline on:

+44 (0)1904 562624.

The hotline is available during normal office hours (0900-1730 GMT/BST).

In either case, it is helpful if you can provide technical support with the following information:

- Your support contract number
- Your `.xml`, `.arxml`, `.rtaos` and/or `.stc` files
- The command line which caused the error
- The version of the ETAS tools you are using
- The version of the compiler tool chain you are using
- The error message you received (if any)
- The file `Diagnostic.dmp` if it was generated

6.2 General Enquiries

6.2.1 ETAS Global Headquarters

ETAS GmbH

Borsigstrasse 24	Phone:	+49 711 3423-0
70469 Stuttgart	Fax:	+49 711 3423-2106
Germany	WWW:	www.etas.com

6.2.2 ETAS Local Sales & Support Offices

Contact details for your local sales office and local technical support team (where available) can be found on the ETAS web site:

ETAS subsidiaries	www.etas.com/en/contact.php
ETAS technical support	www.etas.com/en/hotlines.php