



DATASHEET

Unlock the full value of UML for embedded software development

Embedded UML RXF facilitates use of the full set of UML elements with the commonly used languages C and C++.

KEEP YOUR UML MODEL FROM BEING POLLUTED BY ENVIRONMENT-SPECIFIC ITEMS

Don't get distracted by constraints of your engineering environment. Embedded UML RXF contains a complete library for implementing UML notation elements that have no exact equivalent in C or C++. Furthermore, there are ready-to-use specific interfaces for a multitude of RTOS and target systems available for you.

Select the appropriate interfaces by compiler parameter. The required functions and adapters are automatically included in an executable file for your target system.

Your model stays clean, concise and easily portable with no environment specific items.

USE CASES

- **UML for embedded systems:** leverage UML for a range of target systems, including those with limited resources.
- **Portable and reuseable UML models:** benefit from a library and runtime environment encapsulating RTOS or target specific elements



CONCISE, EASILY PORTABLE APPLICATION MODELS

No need to add RTOS and target specific elements to your UML model. Embedded UML RXF encapsulates all environment-specific items in adapters to give you a more concise application model. In addition, easily port to other target systems by selecting the appropriate adapters. No need to adjust the application model anymore!



USE THE FULL UML SCOPE TO DEVELOP AND VERIFY YOUR SOLUTION

Focus on modeling the best possible solution and use the most appropriate UML elements. Simulate behavior of your software early, at the model level, debug the model in the target environment, and automatically generate highly efficient source code.



INCREASED ENGINEERING EFFICIENCY THROUGH STANDARDS

Embedded UML RXF supports SysML and the AUTOSAR architecture standard. Leverage SysML for increased efficiency of your systems engineering projects. Implementation of solutions for AUTOSAR becomes easier, and project runtime is reduced thanks to AUTOSAR architecture elements already being included

PRODUCT FEATURES

Automatically include RTOS functions

Usually, a UML model also includes elements defining certain runtime environment settings, such as Active Class. Thanks to the function library delivered with Embedded UML RXF, those functions are easily and automatically included with a click and converted into correct source code.

Debug UML models on your target system

Inspect the runtime behavior under real conditions on the target system while you are still elaborating your UML model. With Embedded UML RXF, you execute the model in realtime on the target system. You intervene through trigger events, calls, induced errors and check your model using animated sequence and timing diagrams.

Modeling for very small target systems

Benefit from the advantages of UML modeling even for small target systems with limited resources, such as an intelligent «keyless go» car key. Embedded UML RXF comes with a miniature RTOS providing you with the basic runtime environment functions. You create an executable file running completely independently.

Connect UML model and requirements

Establish traceability across tool boundaries: Link UML models to requirements held in an external requirements management tool and see connected requirements within your UML environment. After generating code from your UML model, the text of the requirement will be included in the source code as a comment.

About SodiusWillert

SodiusWillert designs and distributes software solutions for Enterprise Interoperability, Data Transformation, and Model-Based Code Generation to improve traceability, exchange, and sharing of engineering data for the Aerospace, Automotive, Transportation, Defense and Medical industries. For more information, visit sodiuswillert.com.

BENEFITS OF EMBEDDED UML RXF

Develop the best possible model for your application

Develop with no trade-offs to accommodate the limited language scope of C or C++ and without including RTOS specific elements in your model. Embedded UML RXF automatically includes the necessary functions and adapters and generates code with only minimal overhead in terms of memory, runtime and efficiency.

Discover errors early through simulation at UML model level

Monitor and verify the behavior of your UML model early to check if it meets the specified requirements. Simulate execution within the modeling tool environment to evaluate functions, dependencies, interfaces, etc. while you are developing the model. Detect and eliminate errors as soon as possible, when bug fixing is less expensive.

Debug your UML model on the target system

Find and eliminate errors in real-time behavior by debugging your UML model on the target system. Errors caused by specific characteristics of the target system can be identified as early as possible before troubleshooting gets really expensive.

Full transparency from requirements to source code to test

Link the elements of your UML model to the associated requirements. When generating source code, the text of the requirement is inserted as a comment at the appropriate place. The result is full transparency from requirements through to source code. Add IBM TestConductor and traceability is extended to test results.