

DATASHEET

UML modeling for embedded systems with restricted resources

Embedded UML Studio unlocks the benefits of UML modeling for software development, even for embedded systems with limited memory and tight processor capacity.

REDUCE TIME-TO-MARKET AND INCREASE PRODUCT QUALITY WITH MODEL-BASED DEVELOPMENT FOR EMBEDDED SYSTEMS

Embedded UML Studio includes the market-leading UML modeling tool IBM Rhapsody equipped with a multitude of valuable and helpful features which include model-level simulation, automatic generation of efficient source code, support for reverse engineering, and roundtrip engineering, intuitive user interface, team collaboration support, and much more.

Leverage a complete library implementing UML elements with no exact equivalent in C or C++ and get ready-to-use specific interfaces for a multitude of RTOS and target systems.

USE CASES

- **Small microcomputers:** unlock the advantages of UML-based development for small embedded systems with limited resources.
- **Lifecycle integration:** include your embedded subsystem into the engineering lifecycle for full transparency and end-to-end traceability.

MODEL YOUR SOFTWARE SOLUTION WITH IBM RHAPSODY

IBM Rhapsody comes with a broad range of valuable and helpful features. These include model-level simulation, automatic generation of efficient source code, support for reverse engineering and roundtrip engineering, intuitive user interface, team collaboration support and much more.

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 the correct source code.

INCREASED ENGINEERING EFFICIENCY THROUGH STANDARDS

Embedded UML Studio supports SysML and the AUTOSAR 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 -- no need for tedious upfront specification.

PRODUCT FEATURES

Debug UML models on your target system

Inspect runtime behavior under real conditions on the target system while you are still elaborating your UML model. With Embedded UML Studio, 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.

Full end-to-end transparency

Go beyond linking UML model and extend traceability further to tests by adding IBM Rhapsody TestConductor. Link test architectures, test sequences, test cases and test results in TestConductor to your model and benefit from end-to-end transparency, from requirements to source code and further to test results.

Connect UML model and requirements

Link UML models to requirements held in an external requirements management tool. Click on a link in your UML environment and the up-to-date version of the connected requirement will be displayed. After generating code from your UML model, the text of the requirement will be included in the source code as a comment.

Automated testing with IBM Rhapsody TestConductor

IBM Rhapsody TestConductor unlocks the value of automated model testing on the target system. Automatically generate UML-compliant test architectures and test cases, including automatic linkage back to the model. Tests are executed automatically and documented in meaningful reports, traces and coverage analyses.

About SodusWillert

SodusWillert 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 STUDIO

Implement the optimized solution

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 Studio 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.

Save time through automated testing

Add IBM TestConductor and unlock the value of automated model testing on the target system. Automatically generate UML-compliant test architectures and test cases, including automatic linkage back to the model for end-to-end traceability. Benefit from meaningful reports, traces and coverage analyses customized to meet your individual demand.