RXF-Cert

DATASHEET

UML-Based Software Development for Safety Critical Embedded Systems

Embedded UML RXF-Cert simplifies UML-based development of certification-ready source code. Enables IEC 61508, ISO 26262, DO 178B, DoDAF certification.

UML-BASED DEVELOPMENT FOR HIGHLY REGULATED INDUSTRIES

Embedded RXF-Cert reduces the effort required to get your software certified to IEC 61508, ISO 26262, DO 178B, DoDAF, and other standards with an end-to-end lifecycle environment for UML-based software engineering.

Embedded UML RXF-Cert is an advanced framework for modeling and development of safety-critical software with IBM Engineering Systems Design Rhapsody. Scope of delivery includes a complete set of sample processes, sophisticated documents and test - optimized to help you implement your safety-critical software and pass certification testing.

USE CASES

- Leverage UML for unmatched clarity: architecture and behaviour are significantly easier to describe and maintain in UML.
- Benefit from best practice: reuse proven processes and documents for faster delivery.

RXF-CERT IS YOUR FRAMEWORK FOR SAFETY-CRITICAL SOFTWARE

Embedded UML RXF-Cert will be an integral part of your final product and as such can easily be certified while having your product homologated. Embedded UML RXF-Cert comes with all documentation required to successfully pass the certification tests and reviews.

CONSISTENT END-TO-END TRACEABILITY

Embedded UML RXF-Cert Framework enables you to seamlessly demonstrate coverage of safety-relevant terms from requirements to architecture, and on to implementation and quality assurance. This end-to-end traceability across tool boundaries significantly reduces the effort required to meet certification requirements.

DOCUMENTATION ACROSS TOOLS

Evidence of conformance mandates the usage of data from across the entire project, hosted in all tools used throughout the lifecycle. With Embedded UML RXF-Cert you generate documentation automatically and across tools. Reports are always up-to-date with the latest development artifacts, and tedious manual compilation and updating becomes obsolete.

INCLUDED IN EMBEDDED UML RXF-CERT

Embedded UML RXF-Cert comes with the framework software including source code, tests and a sophisticated set of documents that can also serve as a template for the process and documentation of your safety project.

GENERAL SAFETY

Bill of Material

- Directory of all documents, deliveries and description of system borders and their influences on software development and code generation.

User Manual

- Documents the technology, behavior, configuration and usage of the framework.

Software Safety Plan

- Strategy of safe software development.

Software Safety Manual

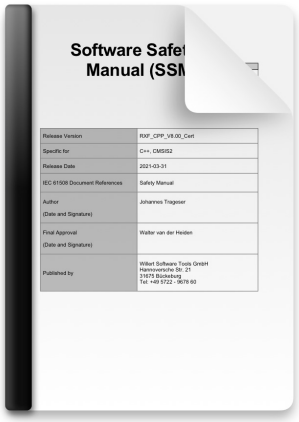
- How the Embedded UML RXF-Cert is intended to be used, what are the restrictions and safety application conditions.

Tool Manual

- List of Tools with version numbers including reason for usage, classification, statements for safety.

Software Modification Procedure

- How modifications and updates of Embedded UML RXF-Cert are handled.



VERIFICATION AND VALIDATION

Verification Plan and Report

- Documents reviews of requirements, code and documentation.
- Test concept, specifications and results.
- MISRA Conformance.
- All Tests are part of the delivery and can be re-executed by the customer.

Final Delivery Report (FDR)

- Documents final checks before delivery.

SPECIFICATION AND TRACEABILITY

Architectural Model

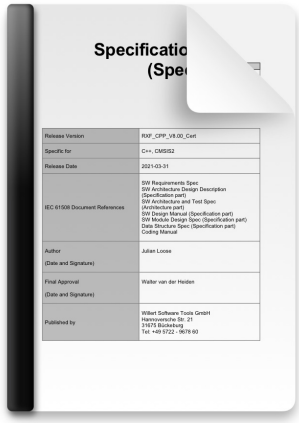
- Rhapsody model of the Framework including descriptive diagrams.

Specification

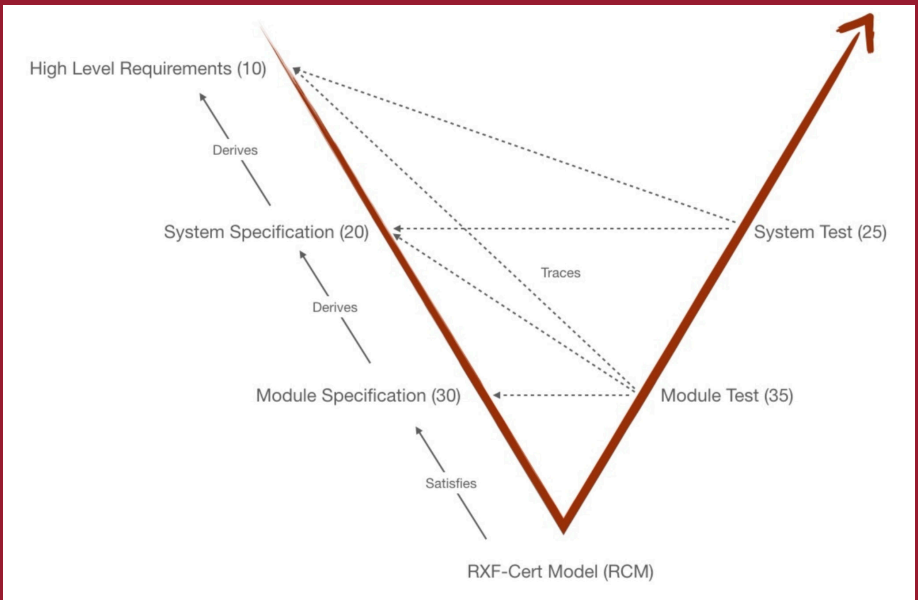
- Complete list of all High level requirements, system specifications, module specifications and Code Style guidelines and their relations and attributes.

Requirement Traceability Table

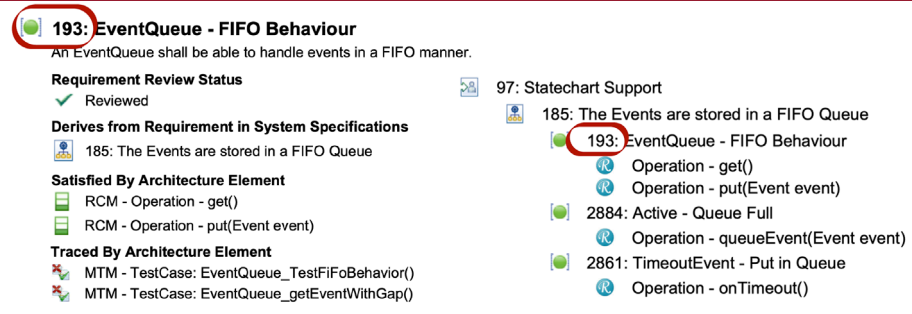
- Showing full coverage of requirements through system specifications down to module specifications, implementation and tests.



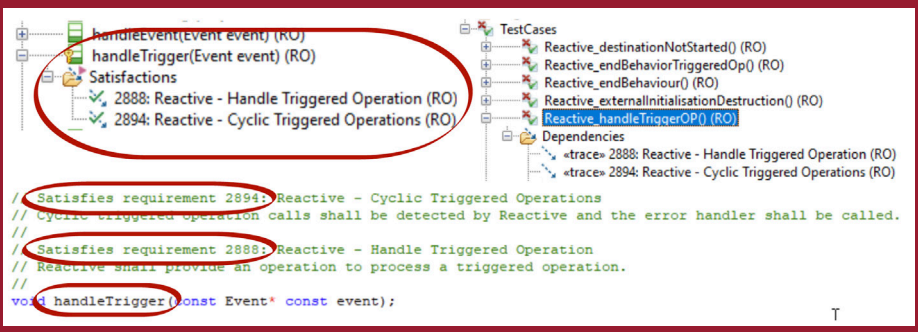
TRACEABILITY IN THE V-MODEL



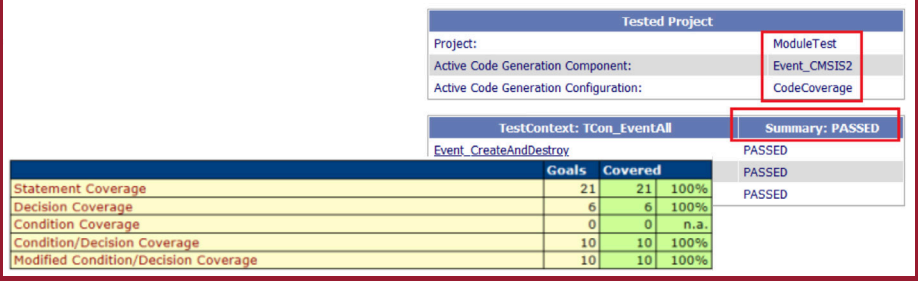
EXAMPLE MODULE SPECIFICATION AND TRACEABILITY



TRACEABILITY IN THE MODEL AND CODE



TEST RESULTS



Tested Project	
Project:	ModuleTest
Active Code Generation Component:	Event_CMSIS2
Active Code Generation Configuration:	CodeCoverage

TestContext: TCon_EventAll	Summary: PASSED
Event_CreateAndDestroy	PASSED
	PASSED
	PASSED

	Goals	Covered	
Statement Coverage	21	21	100%
Decision Coverage	6	6	100%
Condition Coverage	0	0	n.a.
Condition/Decision Coverage	10	10	100%
Modified Condition/Decision Coverage	10	10	100%

PRODUCT FEATURES

Comprehensive sample documentation

Embedded UML RXF-Cert comes with a complete set of documents as is mandated for IEC 61508 SIL3 approval. Reuse and adapt these documents to significantly reduce project leadtime.

Customizable as you need it

Embedded UML RXF-Cert is delivered ready-to-use in a reference environment. Adapt to your specific needs and processes for the best possible use of the framework.

Successful certification in highly regulated industries

Embedded UML RXF-Cert has a track record of successful certification projects by various customers from industries such as railway, automotive, or aerospace. Projects were able to deliver faster and certification efforts were significantly reduced.

BENEFITS OF EMBEDDED UML RXF-CERT

Cut development time

Thanks to integrated tools supporting the entire lifecycle, no requirement will get out of sight. Embedded UML RXF-Cert provides you with confidence that all requirements are taken into account without omission across all development disciplines up to quality assurance.

Reduce documentation efforts

The automatic generation of documentation based on up-to-date artifacts along the entire project expedites creation of certification documents and reduces the associated workload for your experts. The documentation required for having Embedded UML RXF-Cert certified is included.

Best practices for successful certification

Embedded UML RXF-Cert comes with detailed documentation on proven practices for successful development and certification of safety-critical software, helping you to build and adapt your certification-relevant processes much faster.

Ready for the future

Embedded UML RXF-Cert supports OSLC (Open Services for Lifecycle Collaboration). This well-established standard opens the door to a range of lifecycle tools that you may consider for future integration into your engineering environment.

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.

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