

# Embedded UML RXF™

**WILLERT.**  
pioneers in embedded software engineering

## Framework

### Features

**Adaptations for a large number for target platforms**

*C167 - TriCore - ARM - M16C - BlackFin - MC16 - Coldfire - ATmega - 8051 - PIC32...*

**Support of many real-time operating systems**

*ARTX - CMX - embOS - OSEK - OSE - Quadros - EUROS - ThreadX - MQX...*

**Based on the technology of the market-leading UML tool Rhapsody® from IBM® Rational®**

**Highly optimized for use in systems with limited resources**

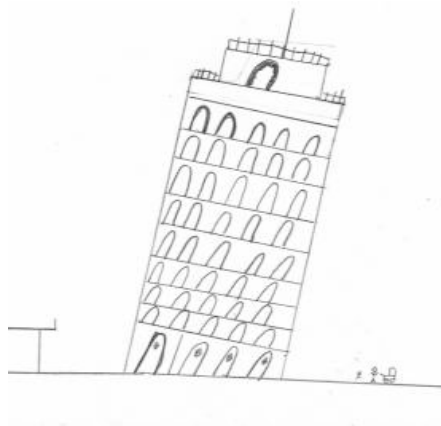
**Delivery with source code**

**Deterministic real-time behavior**

(in connection with OO RTX, no interrupt latency for 32 bit CPUs and max. 4 instructions interrupt disabling for 16 bit CPUs)

**Easy installation**

**Convenient configuration through properties**



### **High Towers Require Solid Foundations**

Embedded UML RXF™ (Real time eXecution Framework) is the solid foundation for your software architecture. It forms the interface between a UML model and the target platform consisting of CPU, compiler and runtime system or RTOS.

It also contains an abstraction layer to support most real-time operating systems in the market. Thus, mechanisms like timers or events can be employed independent of the operating system, resulting in a high degree of portability, reusability and platform independence.

Your software design is target-independent and guarantees maximum return on invest.

With Embedded UML RXF™, you implement your Rhapsody® modeled UML design in target code. This also includes the generation of corresponding make files

with compiler commands and memory configuration.

Our highly optimized framework is suitable for code generation for embedded applications with limited resources. Each RXF variant is specially designed for a tool chain and automatically creates, for example, the debugger projects for the current model. The debugger can be called directly in Rhapsody®, providing for short processing cycles between a debugger and Rhapsody®.

Configuration settings for the real-time operating system and RXF can be performed in the UML tool Rhapsody®.

Adaptation to the target hardware requires minimized effort.

The delivered installation routine provides for a fast start-up of RXT and an integration of the complete tool chain.

Compared to other UML solutions, Embedded UML RXF™ has many features that largely simplify the design of embedded applications with limited resources or that are even basic prerequisites.

### **Low-Power Support**

RXF automatically detects periods in which the system is idle and jumps to a routine in which the user can switch the CPU to low-power mode.

### **High Watermarks**

The utilization of memory area and event queues across application runtime can be monitored and optimized.

### **Fast Event Implementation**

Fast events are available especially for the integration of interrupt service routines in the UML model. Thus, an object-oriented interface based on static events from interrupt routines can be implemented with minimized overhead.

### **Deterministic Real-Time Behavior**

Compared to most other UML framework solutions, RXF operates with only minimum manipulation of interrupt latency. There is no interrupt locking on 32 bit CPUs and one interrupt locking of max. 4 command cycles on 16 bit CPUs.

### **Dynamic Memory Management with Deterministic Time Behavior**

RXF features memory management with defined block sizes. Dynamic memory can thus be used without encountering the common disadvantages such as defragmentation or undeterministic time behavior during memory allocation.

### **Trace of Sequence Diagrams on the Target**

Events can be traced (logged) in the running system with minimum overhead. The trace file is assigned symbolic data on the host and is represented as UML sequence diagram. With the help of standard debugging systems, triggers can be used with pre and post conditions to determine the trace content. The sequence diagrams thus created support the debugging process and can be used to implement regression tests at UML model level.



enabled by



UML logo are trademarks or registered trademarks of the Object Management Group, Inc. in the United States and other countries

## **Profile:**

- 12 months warranty
- Delivery with source code
- Supported target platforms see [www.willert.de](http://www.willert.de)
- Price: 3.950,- Euro +VAT
- No royalties

The following is required for successfully using the product:

- Experience in using 'C' for embedded systems (proficient use of compiler/linker)
- Suitable knowledge of the target platform ('C' start-up configuration, memory mapping, ...)
- Knowledge of the OO architectural design. Participation in our Embedded UML Start-Up Training is recommended.

#### ■ PLEASE NOTE:

Embedded UML RXF™ is an add-on for the UML tool Rhapsody® from IBM® Rational® and can only be used in connection with Rhapsody®.

UML logo is a trademark of the OMG

## **Willert Software Tools GmbH**

Phone +49 5722 9678 60 FAX: +49 5722 9678 80  
Email: [info@willert.de](mailto:info@willert.de) - [www.willert.de](http://www.willert.de)  
Hannoversche Str. 21 - DE-31675 Bückeburg  
Germany

your local contact: