Debugging of Real-Time and Safety Critical Applications

The **Universal Debug Engine® (UDE)** is a powerful development platform for debugging, testing and system analysis of microcontroller applications. With an additional add-on, UDE provides extended functions for software development of real-time and safety critical applications, which are under control of the SAFE**RTOS®** real-time operating system from WITTENSTEIN high integrity systems.

- SAFE**RTOS®** support is provided as UDE Add-On and extends a UDE basic debugger license

- SAFE**RTOS** Add-On consists of the SAFE**RTOS** Support Window that provides a comprehensive and detailed view to information about SAFE**RTOS®** resources and objects

- The shown information is directly collected from the target system

- No separate description file or similar is needed

- Available information depends on particular SAFE**RTOS®** configuration. Configuration is determined at compile time and does not change during run-time.

The information that is shown in UDE's SAFE**RTOS** Support Window is updated as soon as the target microcontroller enters the HALT state (e.g. at a breakpoint).

Available Information for Resources and Objects

Tasks
Name, address, state, stack information and utilization, priority, events, mutexes, notifications, etc.

Queues
Name, address, storage information, queued items, blocked tasks and reason for blocking, etc.

Semaphores and Mutexes
Name, address, type, semaphore count, waiting tasks, etc.

Timers
ID, name and address, timer period, call back, etc.

Configuration
Current SAFE**RTOS®** configuration, which was set for the SAFE**RTOS®** build.

Licensing

An additional license (UDE SAFE**RTOS**) is required to use the SAFE**RTOS** support add-on within a UDE base license.

About SAFE**RTOS®**

SAFE**RTOS®** is a preemptive, pre-certified real-time operating system that delivers unprecedented levels of determinism and robustness to embedded systems. With an imperceptible boot time, SAFE**RTOS®** is the ideal choice for systems that need to respond quickly to safety events, when the system must be placed into a safe state in the shortest possible time. SAFE**RTOS®** is available pre-certified to IEC 61508 SIL 3 and ISO 26262 ASILD by TÜV SÜD.

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Development Tools