



Prevas is:

Prevas develops intelligence in products and industrial systems. Prevas is a project-oriented, hi-tech IT company. The company offers consultancy services, products and support to companies developing products with a large IT content or which need to streamline or automate their business. Prevas solutions are renowned for their reliable delivery and quality. Prevas is listed on the Stockholm Stock Exchange.

Prevas Sierra - Real-Time Kernel in Hardware

The Prevas Sierra hardware component together with its API (Application Programmers Interface) makes a complete RTOS kernel and can be used stand-alone in any embedded system. Easy integrated as an IP core into Xilinx EDK tool with the MicroBlaze or PowerPC.

Benchmarking

Operation	Prevas Sierra on MicroBlaze @50 MHz
create task	5.0 µs
suspend task	8.0 µs*
start task	2.1 µs
task yield	8.0 µs*
semaphore take	1.9 µs
semaphore release	1.6 µs
semaphore read	2.1 µs
interrupt task response time	8.0 µs*

*context switch included

Key Benefits

The implementation in hardware allows the Prevas Sierra real-time kernel to draw benefits from hardware characteristics:

- Works in parallel to the CPU
- 100 % predictability
- Increased performance
- Only 2 kb API results in small footprint in memory
- Acceleration of kernel scheduling activities.

Suitable target systems

- Highly suitable for SoC designs since access time between CPU and peripherals can be minimized.
- Small/medium sized embedded systems where performance and predictability is important
- Old systems where higher performance is needed at a low cost
- Systems that uses the RTOS extensively.

Example system: MicroBlaze CPU + Prevas Sierra HW-RTOS

A powerful but very inexpensive RTOS solution is to combine a Xilinx MicroBlaze™ software CPU with a Prevas Sierra HW-RTOS.

With a small 200K-gate Spartan™-3 FPGA, you can create a complete and advanced real-time system at a very low cost.

The Prevas Sierra IP core is very easily imported into the Xilinx EDK tool and can then be added to the designed system as any other EDK component.

Plug-in architecture

Possibility to add new components when needed. E.g. multi-processor support, UDP/IP, TCP/IP, file system etc.

