

SELECTING AN EMBEDDED RTOS



FEATURED INTERVIEW:

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REAL-TIME SYSTEMS GMBH - RTOS PRODUCTS & SERVICES, 2009

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WEB. [http:// www.real-time-systems.com/](http://www.real-time-systems.com/)**Q. First of all, tell us a little bit about yourself and your responsibilities at Real-Time Systems GmbH.**

A. I am the founder and CEO of Real-Time Systems GmbH (RTS). I have been working in the embedded industry for almost 20 years now, holding positions with companies like RTI and Kontron. In my previous position I headed up sales and marketing for the Windows Real-Time Extensions division at KUKA.

Q. If you would, please give us a very brief, bulleted outline of your products. What sorts of real-time operating systems (RTOSes), tools, and/or services does your company offer?

A. The main focus of our company is the real-time virtualization technology. We have developed the *RTS Hypervisor*, a very unique solution. Even though it takes full advantage of *Intel VT* and allows General Purpose Operating Systems to run fully virtualized, it still provides direct hardware access to assigned devices and a particular highlight is that it adds zero latencies to an RTOS deployed. Apart from this we are also offering professional services, helping our customers to shorten their time to market.

Q. What is Real-Time Systems GmbH's "unique value proposition" for the embedded systems engineer or programmer who is considering an embedded RTOS? What do you and your products do to help him get his product to market faster, cheaper, better?

A. First of all it is important to understand that our *RTS Hypervisor* is not a host-based architecture. This means that it is completely open to the customer to choose any GPOS or RTOS he likes and pick his own combinations. A lot of our customers do not start their projects from scratch but already use specific operating systems today and have a substantial code base which should be reused in order to shorten their time to market. Engineers who have ported their solutions to our *RTS Hypervisor* found it very easy especially as our solution did not force them to change operating systems or use proprietary interfaces but let them use industry standard communication protocols as well as the tools they are used to.

Q. How are you different as a company from competitors? What sets your products apart from those of other RTOS companies?

A. Our *RTS Hypervisor* is not a real “virtualization platform” but more a partitioner of the hardware. We do this in order to guarantee hard real-time if an RTOS is deployed on the Hypervisor. Our goal when we designed the *RTS Hypervisor* was to add zero microseconds latencies to an RTOS and this goal we have reached with our current design. A second important differentiator is that the *RTS Hypervisor* is not Host Based. This means that we leave an OS like Windows XP completely unmodified and use Intel VT to keep such a guest OS limited to its assigned resources. There are absolutely no dependencies between the individual operating systems. i.e. the startup sequence can be freely defined and any OS can be rebooted anytime without influencing others. This could mean that a motion controller running 24-7 does not have to be stopped if e.g. Windows has to be rebooted in order to perform an update.

Q. What embedded architectures do you support - e.g., Intel architecture, MIPS, ARM, PowerPC, etc.?

A. We are focusing on the x86 Intel Architecture only.

Q. What additional software do you offer such as networking, file systems, TCP/IP, security, IDE, GUIs etc.? What about development tools? Are there particular partnerships with other software companies that are especially helpful?

A. The *RTS Hypervisor* partitions the hardware and virtualizes the system where necessary. After the initial setup and configuration of the hardware and operating systems, the engineers develop with the regular tools provided by the operating system vendor. There are no tools, IDE or GUI needed for our solution. This makes the migration easy and shortens the time to market.

Q. How are your products sold? What is a typical fee arrangement? Is it royalty free? Per unit royalty?

A. We sell our solution either on a royalty model but we also offer some yearly technology usage fee, which is independent of runtimes. We like to refer to this model as the “flat-rate model”.

Q. Finally, what sort of “try before buy” experiences does your company offer? Are there free demo downloads, webinars, seminars? What web URL’s can you point us to for more information?

A. We educate our customers through webinars and occasional seminars. If customers want to try out our software, we typically provide them with a temporary license so they can test and experiment with our solution. On our website there is more info about the *RTS Hypervisor* at <http://www.real-time-systems.com/>.

Q. Thank you for this product interview.