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**RTXC**News and Information  
for Developers of  
Embedded Systems

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## In This Issue

More and more developers are abandoning their "house kernels" for a commercial real-time operating system. Read on as we explore some of the reasons for this trend and provide some tips on selecting an RTOS.

[Development Trends - Migrating from a House Kernel](#)

PowerPC processors continue their popularity. In the New Products section we highlight Quadros Systems support for these powerful MCUs [PowerPC Support](#)

Please send your comments and suggestions to [stephen.martin@quadros.com](mailto:stephen.martin@quadros.com). I look forward to hearing from you.

Cheers,

Stephen Martin  
Director of Marketing  
Quadros Systems, Inc.



Stephen Martin  
Director of Marketing

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## Development Trends

### Migrating from a house kernel to a commercial RTOS

As you can imagine, we often get calls from developers who have been using a super loop or simple scheduler for years. There are a lot of reasons to upgrade. Here are just a few:

You want to add TCP/IP (Ethernet or Wi-Fi), USB or some other communications protocol. You realize pretty quickly that your home-grown system can't keep up with the needs of these complex systems. And then who is going to make sure you have interoperability between the kernel, the communications software and the physical controller?

The guy that wrote the house kernel is retiring or has been transferred to another department. Who is going to maintain this thing now?

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You've realized that you can move to a 32-bit processor with integrated peripherals, add performance, and save on board space all at the same time. But you realize that a 32-bit core needs a bit more management than your house kernel can provide.

### Five reasons to move to a commercial RTOS

1. *Make your life easier.* A commercial real-time operating system can save you weeks of programming.
2. *Shorten development time.* Powerful kernel services can compress hundreds of lines of code into a simple command.
3. *Improve system performance; optimize use of system resources*
4. *Enhance product reliability, maintainability and quality*
5. *Promote product evolution*

### Five attributes of a well-designed RTOS

1. Abstracts away the complexities of the processor
2. Provides a solid infrastructure constructed of rules and policies that provide consistency and repeatability
3. Simplifies development by utilizing high level kernel objects to easily handle complex functions
4. Integrates popular stacks and middleware (TCP/IP, USB, SDIO, CAN, FAT and Flash file systems, etc.)
5. Backed up by expert customer service and technical support

### Five questions to ponder as you think about RTOSes

1. *Does the RTOS support your favorite development tool environment?*  
Some RTOSes are tightly linked to a single tool. The RTX Quadros RTOS family has support for a number of popular tools. Have a favorite compiler or debugger? We probably support it. We test to make sure the RTOS works with the compiler. That means making changes to match the compiler's C implementation and developing workarounds for any compiler limitations.
2. *Is the RTOS intuitive and easy to use?* The RTX Quadros single stack RTOS is an easy-to-understand bridge between a house kernel and a sophisticated operating system. Use only what you need. Want help? Just give us a call to talk to one of our experience RTOS advisors.
3. *Are you buying more RTOS than you need?* Some of today's bloated RTOSes come with everything but the kitchen sink. This leads to code bloat and extra memory cost. With the RTX Quadros RTOS you get powerful kernel services with a very small footprint. How does 12 Kbytes or even 4 Kbytes work for you? Compile in only what you need.
4. *Are you buying from RTOS experts or from a company looking to round out its product line?* The Quadros team has been building and supporting RTOSes for more than 25 years.
5. *Can you get the stacks, middleware and drivers you need?* Quadros Systems offers embedded TCP/IP (Ethernet or WLAN), USB host and device solutions, CAN and CANopen support, flash and FAT file systems, GUI development tools, and much more.

Download our latest white paper [Introduction to Real-Time Operating Systems](#)

[Have questions? Want more info? Click here!](#)

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**New Products**

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## New PowerPC Processor Ports

Quadros Systems now has support for many PowerPC processors from Freescale and AMCC -- the newer and the "tried and true." With most we offer driver support for the on-chip peripherals such as Ethernet and USB.

Here are just some of the popular models:

- AMCC 440GX
- AMCC 440EP
- Freescale MPC50 and MPC 5500 family
- Freescale MPC5200
- Freescale MPC823
- Freescale MPC850
- Freescale MPC860 and MCP8260
- Freescale MP866, MPC852T, MPC859T
- Freescale MPC870, MPC875, MPC880, MPC885

[See the current list of supported processors](#)



## Coming Attractions

**September 26 - 27.** Embedded Systems Conference at the Hynes Convention Center in Boston. Booth 1024.

**October 4 - 5.** ARM DevCon at the Santa Clara Convention Center. Booth 417.

Tom Barrett of Quadros Systems is Presenting: *Moving Up to an ARM Processor? Your First Operating System* October 5, 2006, 8:30 AM - 9:15 AM.

**October 11 - 12.** Embedded Systems Show at the National Exhibition Center in Birmingham. Stand 713.

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Quadros Systems is an RTOS-based embedded solutions provider. Our goal is to deliver powerful and compact development and run-time solutions in a flexible, easy-to-use environment. Please contact us if we can be of assistance in your next project.

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