Real-Time & Embedded Computing Conference

Thursday, 10 June 2010

Exhibitors…

- Advanced Digital Logic
- Crank Software
- GrammaTech
- ICOP Technology
- Lauterbach
- Norteq Industriionix
- Real-Time Software Solutions
- Tracan Electronics
- Advantech
- Dolphin Interconnect
- Green Hills Software
- J-Squared Technologies
- McObject
- Oracle
- RoweBots Research
- Tri-M Systems
- YOU i Labs
- Arium
- Enea Embedded Technology
- IBT Technologies
- Keil Software (ARM)
- MontaVista Software
- QNX Software Systems
- The MathWorks
- VIA Technologies

There are also several other vendors represented through their distributors and manufacturers’ representatives here at the event.
Agenda

<table>
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<th>Event</th>
<th>Time</th>
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<tr>
<td>Exhibition Showcase Open</td>
<td>8:30 am – 2:00 pm</td>
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<tr>
<td>Morning Technical Breakout Seminars</td>
<td>9:00 am – 12:15 pm</td>
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<td>Complimentary Lunch – Exhibition Hall</td>
<td>12:15 pm</td>
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<tr>
<td>Afternoon Technical Breakout Seminars</td>
<td>1:00 pm – 1:45 pm</td>
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<td>Drawing Held (enter at Registration)</td>
<td>1:50 pm</td>
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<td>RTECC Concludes, Thank you!</td>
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Conference Program

Technical Seminars ~ Open-Door

9:00 am – 9:45 am

Advanced Linux Debug Techniques  
*presented by Craig Pedersen, Sales Engineer, Arium*

Linux debug tools and techniques are varied and scattered, running from “printk” to JTAG debugging. This session will discuss some of the common techniques used to debug embedded Linux, and will talk about the advantages/disadvantages of each method. The discussion will include printk, GDB, KDB, ptrace, Eclipse, JTAG debuggers, and other tools. We will conclude with a live demonstration running on an Intel Atom reference board.

Exactly When Do You Need Realtime?  
*presented by Justin Moon, FAE, QNX Software Systems*

Do most embedded projects need an RTOS? It’s a good question. The answer lies in the very nature of embedded devices. Devices that, in many cases, are manufactured in the thousands, or millions, of units. Devices where even a $1 reduction in per-unit hardware costs can save the manufacturer a small fortune. Savings aside, the services provided by an RTOS make many computing problems easier to solve, particularly when multiple activities compete for a systems resources. This session explores what is realtime, what makes a realtime system and when it’s needed. Attend and learn about some of the critical elements of realtime computing such as scheduling, priority inversion, interrupt handling and reliability.

Using Statecharts and Model-Based Design to Prototype Real-Time Controls  
*presented by The MathWorks*

Using the Model-Based design approach, we will demonstrate how to efficiently develop, test, validate and communicate real-time control algorithms using Statecharts, without acquiring development tool chains, building devices drivers, or board support packages (BSPs). We’ll discuss how to test these algorithms in simulation, and automatically generate code to integrate with the rest of your system. We will also show how to deploy your algorithms to a real-time system embedded system using an x86 compatible prototyping platform to control your hardware. Lastly, we will demonstrate how these algorithms may retarget into an embedded production environment.
Memory Management for Embedded Systems
*presented by Steve Graves, CEO, McObject/Precision Data Management*

Software engineers know real-time performance and safety often hinge on effective embedded code. Developing such software means rethinking fundamental programming concepts to eliminate the possibility of bottlenecks and failure. Memory management is one such key concept. This seminar delivers memory management techniques to optimize code for performance and reliability. Its practical, hands-on advice and examples range from alternatives to dynamic memory allocation, to the role of highly efficient custom memory allocators for specific program tasks.

Eliminating Fatal Errors in Embedded Code
*presented by The MathWorks*

Increasing software content and complexity in embedded devices amplifies the risk of failure and complicates the process of achieving high confidence in safety and reliability. Traditional software testing methods are limited in scope and static analysis based testing produce high rates of false positives. Formal methods based abstract interpretation is quickly becoming the solution of choice, because it proves the absence of a defined set of run-time errors in code. By verifying code to be free of fatal run-time errors such as under/overflows, out-of-bounds array index, illegal pointer de-referencing and other run-time errors, software and quality engineering teams are able to improve the overall reliability of software. Learn how these new techniques can be applied to the development of critical embedded applications where software quality is at stake.

Intel & Insye Software Workshop –
Delivering Innovative Embedded Product Solutions

Discover the future of Embedded Solutions, featuring Intel's Embedded processor family and Insyde Software's award winning firmware and support services. Intel will explore the technical merits of its microprocessors solutions and fully discuss which ones may be appropriate for your design & development requirement while Insyde will discuss and provide technical training to help you get the most out your current or future bios projects. Also, we will have a Drawing for an Intel/Insyde enabled HP Netbook, so be sure to Enter the Drawing at the Seminar for a chance to win (must attend seminar to be eligible for Netbook drawing).

Improving Time Sensitive Applications with Interconnect Technologies
*presented by Keith Murphy, Dolphin Interconnect Solutions*

For high speed real-time applications, the interconnect that is used can dramatically effect performance. Applications such as simulators and distributed "sensor to processor" systems benefit from lower latency and higher throughput. We will show how to reduce latency and improve system performance with our latest interconnect technologies. Find out how to improve your system performance by implementing techniques such as reflected and shared memory. Understand how to improve application performance with superior sockets performance using our Ultra fast Supersockets implementation.

Harnessing the Power of Multicore Processors with Virtualization
*presented by Green Hills Software*

Join us for an informative session that will cover development challenges associated with adopting multicore processors in new designs. We’ll cover common use cases for multicore devices as well as a complete multicore toolkit that includes development tools, operating systems, and virtualization technology. Utilizing this toolkit enables developers to unlock the power of next generation multicore designs.
12:15 pm
~ Be our Guest for a Complimentary Lunch ~

1:00 pm – 1:45 pm

Debug Linux Apps with ARM-based Open-Source Tools

*presented by Bob Boys, Product Marketing Mgr, ARM and Mark Moran, Senior FAE for JORAL Technologies*

In this seminar, ARM introduces the Keil Development Studio 5 (DS-5), a new family of tools aimed specifically at Linux Application Development. DS-5 is made up of a pre-packaged GNU Compiler, a Linux distribution and examples and the new Eclipse-based DS-5 Debugger. DS-5 is a high-performance, economically priced, cross-platform debugger for open source Linux applications. The DS-5 is GUI driven rather than command-line driven; making it easier for developers to access the internals of the chip for debug purposes.

A Source-based Approach to Embedded Linux Development

*presented by MontaVista Software*

Embedded Linux development teams assemble custom Linux distributions for each device they produce. The processes of building, maintaining, and re-using custom distributions requires infrastructure that is usually built and maintained by the development teams. In addition, how distributions are made available is changing. Source based distributions are now more common and provide greater flexibility in building a custom distribution. In recent years, open-source standards have emerged that have helped streamline and drive this process. Built on these standards, the MontaVista Integration Platform provides a flexible approach to embedded Linux development, using a source based approach and giving developers greater control. In this session, learn the differences between binary and source-based development approaches, and how to transition to source-based development using the MontaVista Integration Platform and open source standards.

Static Analysis for Safety Critical (FAA DO-178B) & Software Assurance (CERT-C) Applications

*presented by Programming Research*

FAA DO-178B safety critical applications must follow rigorous software processes. CERT-C is a secure coding standard published by Software Engineering Institute, Carnegie Mellon. See how to obtain DO-178B static analysis credit using automated static analysis tools and how to comply with the static analyzable rule in the CERT-C standard.

1:50 pm

**Drawing**

Enter for your Chance to WIN at the registration desk

**TomTom**

4.3” Screen Portable GPS Navigator

“never get lost again”

(well, hopefully never)

RTGroup

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