

AGENDA



8.30 Registration and Breakfast

9.00 Keynote: ARM at the heart of the microcontroller revolution.

Richard York, ARM

This talk will review the tremendous innovation in our industry based on 32-bit microcontrollers that has occurred in the 2 years since we last presented to this conference. The breadth of products that are now available from semiconductor suppliers is huge and microcontroller solutions being delivered into OEM products have been accelerating rapidly. This is testament to the creativity of microcontroller developers selecting and using these devices. During this talk we will also be looking ahead to the future and discuss the innovation yet to come.

9.30 Multi-core ARM MCUs: what is the value from an application perspective?

Neal Frager, NXP

The purpose of this presentation is to cover the key features and benefits of the LPC4300 multi-core ARM MCU family from NXP and how it can be used to efficiently solve real world problems.

10.05 Accelerating time to market through advanced debug technology.

Matt Saunders, ARM

MCU applications can be very complex with higher performance cores such as the Cortex-M4 increasing the MCU capability and many advanced peripherals such as USB-Host, Ethernet and high speed comms extending their application reach. The use of Real Time Operating Systems in MCU applications is also increasing. This means that application debug can now be a significant part of the development process and high quality tools become essential to on-time deliveries. In this session using practical examples in MDK-ARM we will look at how advanced debug tools for Cortex-M such as Streaming Instruction Trace, Code Coverage, Application Profiling and RTOS awareness can significantly reduce the time spent in debug and assist in efficiently optimising an application.

10.45 Coffee Break and Exhibition

11.05 STM32: Extending the reach.

Geoff Holmes, ST

In a few short years, Cortex-M has rapidly become the default core of choice in the general purpose microcontroller world. Now, with the latest products, even those users demanding high performance, advanced analogue features or robust touch-sensing can benefit from the Cortex-M architecture. This presentation looks at these new hardware features, and how to make the most of them in your applications.

11.40 0-60 in under 30 minutes:

Using DAVE™ 3 to accelerate XMC4000 project development time.

Markus Kroh, Infineon

Infineon have recently introduced the XMC4000 Cortex M4 processor along with the DAVE™ 3. DAVE™ 3 is a free toolset that makes it easy to develop software-based applications based on predefined and tested software components called DAVE™ Apps. DAVE™ Apps cover a wider range of use cases: from all kinds of peripheral drivers, like PWM, SPI, CAN or ADC Apps, middle-ware components like TCP/IP, USB, file system or GUI, application abstractions for motor control or automation up to complete configurable embedded applications. The presentation will demonstrate how easily the XMC4000's powerful peripherals can be configured and linked to create an application.

12.15 The ARM Cortex-M0+ core: a technical introduction.

Mark Dunnett, Freescale

ARM continue to invest in cost-effective cores suited to the low-end microcontroller space. In this technical presentation, Mark will introduce the differences between the well-known Cortex™ M3/M4 cores, and the recently-announced M0+ core suited to 8-bit replacement. The ARM Cortex-M0+ core offers improved performance, energy efficiency and ease-of-use in comparison to the Cortex-M0, but retains full compatibility with all other Cortex-M class cores enabling reuse of existing compiler and debug tools. The material will cover improvements in the GPIO handling capability, increases in performance over the existing M0 core, and the sophisticated Micro Trace Buffer trace capability. All this is achieved whilst extending ARM's industry-leading low power performance with a quoted dynamic power of 11uW/MHz.

12.50 Practical ways to 'Future-Proof' embedded C applications for ARM Cortex based microcontrollers.

Dave Hughes, HCC Embedded

The emergence of the new generation of powerful ARM Cortex MCUs has forced engineers to deal with more sophisticated and complex embedded programming challenges. In a stable environment where tools, hardware and peripherals don't change, this challenge requires a 'one-time' solution. In reality engineers frequently use hardware, software and tools from different sources over multiple projects. This should provide an opportunity to benefit from re-use and improvement but often a lack of foresight results in complexity, confusion and new projects fail to gain significantly from their predecessors.

Dave Hughes, CEO of HCC Embedded, will explain how a modest investment in developing a structured approach to developing source code will result in higher quality code and decreasing time and complexity required for each new project.

13.20 Lunch and Exhibition

14.30 An Overview of CMSIS-RTOS.

Niall Cooling, Feabhas

With the release of CMSIS v3.00 for the Cortex-M family of microcontrollers, ARM have pushed the boundary of abstraction of the Application Programming Interface (API) to include a generic Real-Time Operating System interface (CMSIS-RTOS). This presentation overviews the API and discussed the implications for application programmers and RTOS vendors alike.

15.05 Bridging the development gap from ARM Cortex-M to Cortex-A using simple low level libraries.

Chris Lande, Texas Instruments

TI has recently introduced a new range of low cost ARM Cortex-A8 devices (AM335x) in their Sitara range. These devices boast up to 720Mhz with a vast range of features including Graphics, Display, Serial and Analogue peripherals. Historically using these types of device required expensive evaluation platforms and high level operating systems such as Linux, Android or Windows CE. But not anymore thanks to the BeagleBone open source community evaluation board and StarterWare software libraries from TI. StarterWare provides C-based no-OS platform support for TI's ARM9™ and ARM® Cortex™ A8 based devices. StarterWare provides device abstraction layer libraries, peripheral programming examples such as Ethernet, graphics and USB, and board level example applications. StarterWare can be used stand-alone or with an RTOS. The BeagleBone is a low cost development platform that delivers bare bones hardware with access to interface signals for sensors and controls, while eliminating the need for additional equipment with a single cable development environment.

15.35 Coffee and Exhibition

15.55 Moving into ARM embedded Linux development

Joe Nicholson, Rufilla

For the embedded software engineer, starting embedded Linux application development can be a challenge. Conceptually things are very different to development using an RTOS or bare metal programming and Linux application development normally requires development tools that run under Linux...

Enter ARM DS5. DS5 is a self-contained package providing all the tools for embedded Linux development, integrated together into a single Windows installation. This presentation provides a bird's eye view of DS5, so that you will take away some clear paths to progress in your own embedded Linux projects.

16.30 Round-up

17.00 Close