18 November 2014
SELTECH Corporation

Works with MIPS M5150 CPU to enable a high level of security and reliability in embedded system applications

Security and reliability are becoming requirements in entry-level smart embedded applications, especially critical for connected systems. Mobile, automotive, IoT, M2M, cloud computing, home automation, and a broad range of emerging markets will benefit from the combination of high performance and low power provided by the MIPS M5150 and the secure management enabled by FEXEROX.

FEXEROX hypervisor software manages the processor, memory and system resources to set up independent virtual machines on a single CPU platform that can support multiple, unmodified, operating systems (OS) and applications in a secure environment that provides task isolation, IP protection and reliability.

Secure, virtual machines have to date been used in high end processors, but the MIPS M-class CPU IP cores announced by Imagination in February 2014 debuted as the world's first entry-level, MCU class processors with support for hardware virtualization technology.

SELTECH Corporation has successfully developed the hypervisor FEXEROX which runs on the MIPS M5150 core. With the hardware virtualization support in the MIPS M5150, combined with the new FEXEROX hypervisor, multiple OS such as RTOS and Linux can run independently, concurrently and safely on the same CPU, enabling multiple application domains secured by hardware virtualization. Collaboration is naturally also possible through secure inter-OS communication. We have realized an environment that both developers of diverse embedded applications as well as users have all been waiting for.

FEXEROX is a Type 1 (so-called 'bare-metal') hypervisor that directly executes on the processor core. It is a mere 32K bytes, extremely compact in size for a hypervisor that realizes full hardware virtualization. In addition, the hypervisor overhead uses about 1% of its native OS cycles, leaving plenty of processing power for applications.

Shoi EGAWA, CEO, SELTECH Corporation:

"I am pleased to be able to announce, with the positive and extensive technological support from Imagination, the release of FEXEROX, a full virtualization solution for the M5150 core, a microcontroller-class CPU with an advanced architecture. Full virtualization is recognized in the field of embedded systems as an essential technology in achieving Trusted Execution Environments (TEE) for access control in mobile phones, tablets, set-top boxes, automotive, and other devices. We are confident that ours is a powerful solution to achieve this.

As a company, our focus is on areas such as cars, printers, projectors, digital cameras and more. Cars, with their marked development towards increased electronic control, require high reliability, whereas devices such as printers require high precision control and extensive protocol stack support. Based on our excellent partnership with Imagination, a global company which provides leading CPU, multimedia and communications technologies, we work hard to support all our customers with lightweight, highly efficient and safe system architectures."

John Min, Director of Processor Technology Marketing, Imagination Technologies: "We congratulate SELTECH Corporation on the successful development of the FEXEROX hypervisor, which has been optimized for Imagination's award winning MIPS M-class core. We are pleased to work closely with SELTECH Corporation on development of this innovative technology. With hypervisors such as FEXEROX, the numerous companies that have adopted our M-class cores can take full advantage of the benefits of advanced multi-domain security provided by the built-in hardware virtualization support."

Release date:
1st December 2014

Exhibition presence:
Embedded Technology 2014
Imagination booth C-12
PACIFICO Yokohama, 19th-21st November 2014

About SELTECH:

SELTECH Corporation is a technology development firm focussing on virtualisation technologies/secure technologies and speech technologies. We will support your new business model working with the latest technologies in a variety of fields around hardware and software security technologies.

Contact details:

If you have any questions relating to this press release, please contact us using the email-address below.

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