Synopsys and jNet ThingX Optimize JavaCard OS for Synopsys' ARC SEM Security Processors

Combination of jNet ThingX JavaCard OS with Synopsys' Anti-Tamper ARC SEM Cores Eases Development of Common Criteria Certified SoCs

MOUNTAIN VIEW, Calif., and SAN JOSE, Calif., May 2, 2017 /PRNewswire/ --

Highlights:

- JavaCard/GlobalPlatform OS optimized for Synopsys' ARC SEM processors enables deployment of highly secure SoCs capable of thwarting malicious hardware and software attacks
- ARC SEM processors incorporate a variety of advanced anti-tamper security features to protect against side-channel attacks to build certified solutions
- JavaCard v3.0.4 OS includes JavaCard Virtual Machine, JavaCard Runtime Environment, JavaCard API class libraries, Crypto library and an implementation of the GlobalPlatform v2.2.1 standard
- Joint solution accelerates FIPS 140-2 Level 3 and Common Criteria EAL5+ certification and protects high-value targets such as mobile NFC payment, government ID, embedded Universal Integrated Circuit Card, embedded SIM and IoT edge devices

Synopsys, Inc. (Nasdaq: SNPS) and jNet ThingX today announced that jNet ThingX's JavaCard/GlobalPlatform OS has been ported and optimized for Synopsys' DesignWare® ARC® SEM security processors, creating a highly secure HW/SW platform for embedded applications. The JavaCard v3.0.4 and GlobalPlatform v2.2.1 specifications support Common Criteria (CC) certification up to Evaluation Assurance Level (EAL) 5+, a rating typically associated with smartcards and devices with similarly stringent security requirements. Synopsys' ARC SEM processors with SecureShield™ technology enable designers to separate secure and non-secure functions as part of a Trusted Execution Environment (TEE) and protect devices from evolving security threats, including side-channel attacks. By running JavaCard OS on ARC SEM processors, developers can create more secure SoCs for a broad spectrum of low-power mobile, industrial and IoT applications, including near-field communication (NFC) payment, government documents/IDs, smart cards, smart meters and over-the-air provisioning using embedded Universal Integrated Circuit Card (eUICC) and embedded SIM (eSIM).

"With the requirements for secure chips expanding beyond traditional smartcards and into a wide range of connected devices, the combination of the ARC SEM security processor with our JavaCard technology creates a compelling platform for security-critical applications," said Mikhail Friedland, CEO at jNet ThingX Corporation. "Synopsys' ARC SEM cores enable development of a secure, low-power and cost-effective processor-based solution, which is necessary for deploying resource-constrained SoCs that meet Common Criteria certification standards."

jNet ThingX develops the JavaCard OS, including GlobalPlatform support, for implementation in security-critical embedded applications such as payment cards, government ID and eUICC/eSIM. The JavaCard OS includes JavaCard Virtual Machine (JCVM), JavaCard Runtime Environment (JCRE), JavaCard API class libraries, Crypto library and GlobalPlatform support. Developing in Java is associated with fewer software defects, lower software maintenance costs and a reduction in time to market.

Synopsys' DesignWare ARC SEM110 and SEM120D security processors are optimized for area and power efficiency while integrating anti-tamper features, making them ideally suited for a wide range of low-power embedded security applications. The ARC SEM processor cores provide side-channel resistance through timing and power randomization, and uniform instruction timing capabilities that obfuscate critical operations from potential hackers. The available SecureShield runtime libraries simplify development of a TEE, ensuring that sensitive data is stored, processed and protected in an isolated environment. In addition, the ARC CryptoPack option accelerates common cryptographic algorithms such as AES, SHA-256, RSA and ECC by adding custom instructions to the ARC SEM processor.

"Concerns about physical security attacks such as differential power analysis are increasingly prevalent in embedded SIM and other security-critical applications," said John Koeter, vice president of marketing for IP at Synopsys. "The jNet ThingX JavaCard OS optimized for ARC SEM security processors enables embedded developers to deliver secure systems that are resistant to hardware and software attacks, while keeping area and power consumption to a minimum."

Availability & Resources

The jNet ThingX JavaCard OS for ARC SEM processors is available now from jNet. The DesignWare ARC SEM processors and licensable ARC CryptoPack option are available now from Synopsys.

- Learn more about jNet ThingX JavaCard OS
- Learn more about DesignWare ARC SEM processors
- Learn more about ARC SecureShield technology

About DesignWare IP

Synopsys is a leading provider of high-quality, silicon-proven IP solutions for SoC designs. The broad DesignWare IP portfolio includes logic libraries, embedded memories, embedded test, analog IP, wired and wireless interface IP, security IP, embedded processors and subsystems. To accelerate prototyping, software development and integration of IP into SoCs, Synopsys' IP Accelerated initiative offers IP prototyping kits, IP software development kits and IP subsystems. Synopsys' extensive investment in IP quality, comprehensive technical support and robust IP development methodology enables designers to reduce integration risk and accelerate time-to-market. For more information on DesignWare IP, visit www.synopsys.com/designware.

About jNet ThingX

jNet ThingX is a private "technology enabler" company in the business of licensing secure, connected, embedded operating system solutions for resource constrained devices like smartcards and IoT edge devices based on latest JavaCard & GlobalPlatform specifications under contract with silicon manufacturers and smart card integrators both foreign and domestic. More information on jNet ThingX can be found at www.jnet-thingx.com

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

Editorial Contact:
Monica Marmie
Synopsys, Inc.
650-584-2890
monical@synopsys.com

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