Synopsys' Virtualizer Speeds Software Development and Enhances Design Enablement for Systems Based on the Infineon AURIX Microcontroller Family

AURIX Virtual Prototype Enabled Automotive Software Developers to Start 12 Months Before Silicon Availability

MOUNTAIN VIEW, Calif., June 26, 2012 /PRNewswire/ --

Highlights:

- Synopsys' Virtualizer enabled rapid creation of virtual prototype for AURIX family of multicore automotive microcontrollers
- Infineon used AURIX virtual prototypes to develop the microcontroller abstraction layer and end-user software tool chain months ahead of silicon
- AURIX virtual prototypes deployed by Infineon's customers resulted in faster multicore software development and more efficient electronic control unit (ECU) testing
- Virtualizer-based prototypes are now an integral part of the AURIX development tool suite from Infineon

Synopsys, Inc. (Nasdaq: SNPS), a world leader in software and IP used in the design, verification and manufacture of electronic components and systems, today announced that Infineon Technologies AG has used Synopsys' Virtualizer™ tool set to deploy virtual prototypes of their AURIX microcontroller-based systems, enabling early software development and customer engagement prior to silicon availability. The AURIX virtual prototype, a fast, functional model of the AURIX multicore microcontrollers, is now an integral part of the suite of development tools provided by Infineon to accelerate its customers' development and deployment of real-time embedded software.

"Virtual prototypes are an important tool for addressing the increasing software complexity in automotive electronic systems, and partnering with Synopsys ensures that Infineon and our customers will have access to market-leading virtual prototyping technology," said Axel Hahn, senior director of the Microcontroller Powertrain Application Line at Infineon Technologies AG. "Using Synopsys' Virtualizer to create the AURIX virtual prototypes, we were not only able to accelerate our internal software development, but also provide an early target for our customers to begin their system development activities and provide early feedback on our new architecture. With access to virtual prototypes as part of the AURIX development tool suite, our customers can now rapidly integrate this technology into their current software development and testing processes."

The new Infineon AURIX family features a multicore architecture with support for up to three independent 32-bit TriCore processor cores, providing a scalable set of performance options. The high performance and embedded safety and security features of the AURIX microcontrollers enable them to be used for a wide range of software-rich automotive applications such as engine and transmission control, braking systems, power steering systems, chassis domain control, airbags and advanced driver assistance systems. Synopsys' Virtualizer was an enabling technology for Infineon, not only for the development of the microcontroller abstraction layer and the software tool chain for AURIX end users, but also to enable Infineon to engage customers early in their own product development cycles and receive valuable customer feedback. The Infineon-supplied AURIX virtual prototype greatly enhances the software debug and analysis capabilities available to software development teams at automotive Tier 1 and OEM companies, accelerating product design and test cycles. AURIX virtual prototypes can also be used to create virtual Hardware-in-the-Loop (HIL) testbenches. Virtual HIL simulation enables system validation teams to increase the scope of their testing through fault injection and extended code coverage, thereby reducing development costs, accelerating time-to-market and increasing product reliability.

"Our collaboration with Infineon enables automotive manufacturers and their Tier 1 suppliers to enhance their development, integration and validation activities associated with the growing software content in modern cars," said John Koeter, vice president of marketing for IP and systems at Synopsys. "Virtual prototypes based on Synopsys' Virtualizer solution offer unique

visibility into how the software behaves within the ECU, delivering unparalleled debug efficiency to AURIX MCU users."

Availability

The virtual prototype for the AURIX multicore microcontroller is available immediately from Infineon. To deploy AURIX virtual prototypes, licenses for Virtualizer and the Infineon TLM Library are available immediately from Synopsys.

About Synopsys

Synopsys, Inc. (Nasdaq:SNPS) is a world leader in electronic design automation (EDA), supplying the global electronics market with the software, intellectual property (IP) and services used in semiconductor design, verification and manufacturing. Synopsys' comprehensive, integrated portfolio of implementation, verification, IP, manufacturing and field-programmable gate array (FPGA) solutions helps address the key challenges designers and manufacturers face today, such as power and yield management, system-to-silicon verification and time-to-results. These technology-leading solutions help give Synopsys customers a competitive edge in bringing the best products to market quickly while reducing costs and schedule risk. Synopsys is headquartered in Mountain View, California, and has approximately 70 offices located throughout North America, Europe, Japan, Asia and India. Visit Synopsys online at https://www.synopsys.com.

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