Synopsys Expands Portfolio of Automotive VDKs with Support for Infineon's AURIX TC4xx 32-bit Microcontroller Family

Virtualizer Development Kit Accelerates Infineon's Hardware and Software Development from Concept to Validation

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Highlights

- Jointly developed VDK supports Infineon's next generation AURIX TC4xx 32-bit Microcontroller with Parallel Processing Unit for affordable and powerful implementation of Artificial Intelligence (AI) algorithms and high-speed control loops
- Internal deployment of VDK at Infineon accelerates concept studies, software development and hardware verification

Synopsys, Inc. (Nasdaq: SNPS) today announced the availability of aVirtualizer Development Kit (VDK) supporting the Infineon AURIX™ TC4xx Microcontroller Family. The availability of the VDK for TC4xx is the result of the Infineon and Synopsys Center of Excellence collaboration, a long-term close partnership focused on accelerating the development of automotive systems based on Infineon's AURIX microcontrollers. Infineon has also successfully deployed the VDK internally to accelerate hardware and software development from concept studies to validation activities resulting in a better qualified and proven TC4xx virtual prototype model.

Synopsys VDKs enable partners, automotive tier 1s and OEMs to start TC4xx software development months ahead of silicon availability and shift testing and evaluation of automotive systems from physical to virtual. The TC4xx virtual prototype supports a comprehensive set of models for the Tricore™ CPU subsystem, the Parallel Processing Unit (PPU), memories, communication, timer, analog to digital converters, security and safety. The PPU, based on Synopsys' DesignWare® ARC® EV7x Processor IP, is a powerful, scalable and easy to integrate single instruction-multiple data (SIMD) vector DSP for implementing affordable AI and high-speed control performance in AURIX TC4xx. The VDK enables early investigation and testing of innovative algorithm implementations for AI and deep learning solutions for predictive high-speed control loops required by future eMobility use cases. In addition, external communication, co-simulation and debug/test interfaces are provided to seamlessly bring the virtual prototype into automotive development flows for software debugging, virtual hardware-in-the-loop testing, and calibration and fault testing. From interactive development to regression deployment in high performance computing environment, the VDK for TC4xx accelerates time-to-market, improves quality and reduces development costs.

"eMobility, automated driving and new EE-architectures introducing domain and zone control units are resulting in increased software content and complexity. Automotive companies need and require virtual prototypes to improve time-to-market while maintaining control over quality, safety, and development costs," said Peter Schäfer, senior vice president and general manager, Automotive Microcontroller at Infineon. "Our long-term collaboration with Synopsys has resulted in a comprehensive, qualified and proven virtual prototyping solution for the AURIX TC4xx family that will help our customers start their development earlier and deliver better products faster."

The Synopsys VDK for Infineon's AURIX TC4xx family has been deployed internally at Infineon for a variety of use cases from concept to validation. Use cases include hardware and software concept studies for the suitability of new features in targeted applications, MCAL development with a methodology to seamlessly switch between virtual prototype and physical hardware in Infineon's validation environment, and co-verification of Infineon's low-level driver for hardware verification and validation. Infineon is also using the VDK for customer demonstrations and early preparation and verification of test patterns before hardware verification in emulation. Infineon's internal usage helps to accelerate virtual prototype development and ensures better quality and tight integration with Infineon's software.

"With increased electronic and software content, leading automotive tier 1 and OEM companies are transitioning from physical to a virtual development environment to meet tighter deadlines, higher quality and more stringent safety and security requirements," said Tom De Schutter, vice president of engineering at Synopsys. "With our comprehensive automotive virtual prototyping solutions, close collaboration with Infineon, and new VDK for Infineon AURIX TC4xx, we are jointly enabling automotive companies to start innovating and developing earlier, with higher reliability and at lower costs."

Availability

The Synopsys VDK for the Infineon AURIX TC4xx Microcontroller Family is availablenow. A demonstration of Synopsys's Virtualizer Development Kit (VDK) will be showcased at Infineon's 4th annual OktoberTech Technology Collaboration Forum, which will take place virtually on October 29.

The Synopsys VDK for AURIX TC4xx is enhanced with an ecosystem of solutions, including compilers, debuggers and new workflows, as well as software products like peripheral drivers, operating system and a wide span of automotive applications. The first elements are now available to enable users to start development immediately. As proof of concept, two automotive specific demonstrators developed by partners Elektrobit and Vector using the Synopsys VDK will be unveiled at electronica, an online event taking place, November 9-12.

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.

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