

Synopsys and Arm Strengthen Collaboration for Faster Bring-Up of Next-Generation Mobile SoC Designs on the Most Advanced Nodes

Synopsys Leading EDA and IP Solutions Combined with Arm Total Compute Solutions Help Ecosystem Tackle Multi-Die System Challenges

Highlights:

- Synopsys system-level solutions spanning design, verification, silicon lifecycle management and IP deliver maximum performance and energy efficiency
- Synopsys.ai full-stack AI-driven EDA suite and Synopsys Fusion QuickStart Implementation Kits speed development of SoCs down to 2nm using Arm Cortex-X4, Cortex-A720 and Cortex-A520 CPUs, and Arm Immortalis-G720 and Arm Mali-G720 GPUs
- Synopsys Verification Family, including virtual prototyping with Arm Fast Models, hardware-assisted verification and verification IP, speed software development
- Silicon-proven Synopsys Interface, Security and Silicon Lifecycle Management PVT IP are optimized for low-risk integration into Arm-based SoCs

MOUNTAIN VIEW, Calif., May 28, 2023 /PRNewswire/ -- Tackling extremely complex mobile chip designs on advanced nodes down to 2nm, [Synopsys, Inc.](#) (Nasdaq: [SNPS](#)) has strengthened its AI-enhanced design collaboration with Arm as the company announces Arm® Total Compute Solutions 2023 (TCS23) platform today at Computex. Comprehensive EDA and IP solutions optimized for the highest levels of performance and power for Arm's latest compute platform includes the Synopsys.ai full-stack AI-driven EDA suite, Synopsys Interface and Security IP and Synopsys Silicon Lifecycle Management PVT IP. These advancements build on decades of collaboration between the two companies to accelerate customers' delivery of high-performance, efficient Arm-based SoCs for high-end smartphones and virtual/augmented-reality applications.

"The opportunity to unlock new magic on advanced mobile devices while constantly pushing performance and power-efficiency means design challenges become exponentially harder," said Shankar Krishnamoorthy, GM of Synopsys EDA Group. "Collaborating with Arm to optimize our EDA and IP solutions enables mutual customers to tackle some of the toughest multi-die system integration challenges from design, IP integration and verification to software development. The addition of the Synopsys.ai EDA suite starts a new phase, where cooperative keystone companies, like Synopsys and Arm, align expertise to help mutual customers turbo-charge the delivery of their Arm-based SoC designs."

"The new TCS23 platform delivers a suite of segment-specific technology, designed with the system in mind, so that our customers can tap into the compute performance required for the next generation of visual computing experiences," said Chris Bergey, senior vice president and general manager, Client Line of Business, Arm. "Through our collaboration with Synopsys, and its full-stack AI-driven EDA suite and silicon-proven IP solutions, customers will now be able to push performance further than ever before and maximize the benefits of the most advanced nodes."

Enabling Higher Quality and Faster Turnaround Times

Synopsys addresses the complex, system-level challenges of hierarchical implementation for high-performance cores without performance, power and runtime compromises through advanced differentiated features such as multi-source clock tree synthesis, intelligent budgeting, timing driven pin assignment, seamless constraints push down and transparent hierarchy optimization.

The Synopsys system-level solutions for TCS23 include:

- [Synopsys.ai](#) full-stack AI-driven EDA suite, which taps into the power of AI from system architecture through manufacturing to optimize power, performance and area (PPA) and enhance time to market.
- Synopsys Verification Family, which accelerates architecture exploration, software development and verification throughput for Arm SoCs containing Arm Cortex®-X4, Cortex-A720 and Cortex-A520 CPUs and Immortalis™-G720 and Mali™-G720 GPUs. Early adopters of TCS23 are using Synopsys virtual prototypes with Arm Fast Models, Synopsys hardware-assisted verification and verification IP for the latest Arm® AMBA interconnect to deliver SoCs to market faster.
- Synopsys Interface and Security IP for [PCI Express® 6.0](#) with [Integrity and Data Encryption \(IDE\)](#), [CXL 3.0](#) with [IDE](#), [DDR5](#) with [Inline Memory Encryption \(IME\)](#) and [UCle](#), all of which are optimized for performance with Arm-specific features and for pre-silicon interoperability with Arm Cores to minimize risk and accelerate time to market.

- [Synopsys Silicon Lifecycle Management Family](#) PVT monitor IP, which can be integrated into Arm cores to monitor chip health from development to the field to measure and optimize performance.

Availability

Synopsys Fusion QuickStart Implementation Kits (QIKs) are tuned to extract maximum entitlement from the latest 5, 4 and 3nm process technologies. They provide the most efficient path to realizing optimally scaled compute architectures for the most demanding end-user applications.

Synopsys QIKs include implementation scripts and reference guides that enable early adopters of the newest Armv9.2 cores to accelerate time to market and achieve their demanding performance-per-Watt targets. These QIKs are available today by request through the [Arm support hub](#) or from [Synopsys SolvNet](#).

Synopsys also incorporates the latest Arm Fast Models for virtual prototypes and delivers verification IP for the latest Arm AMBA interconnect, emulation and prototyping hardware to accelerate hardware-software bring-up and power and performance validation, resulting in shorter time to market.

Synopsys IP for PCI Express 6.0 with IDE, CXL 3.0 with IDE, DDR5 with IME and UCle are available now.

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 an S&P 500 company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and offers the industry's broadest portfolio of application security testing tools and services. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing more secure, high-quality code, Synopsys has the solutions needed to deliver innovative products. Learn more at www.synopsys.com.

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