Synopsys and Arm Collaborate to Enable Tapeouts by Early Adopters of Arm's Latest Premium Mobile Processors

Synopsys Design and Verification Platforms and DesignWare Interface IP Enable Optimized PPA and Faster Time-to-Market for Smartphones, Laptops, and Other Mobile Devices

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Highlights:

- Synopsys' Fusion Design Platform enables faster implementation with optimized PPA for Arm processors
- QuickStart Implementation Kit (QIK) using Arm Artisan Physical IP and POP IP, including scripts and reference guide, available today from Synopsys for new Arm Cortex-A77 processor in 7nm process technology
- Tapeout success by early adopters of Arm Cortex-A77 CPU andMali-G77 GPU
- Synopsys' Verification Continuum Platform accelerates verification closure and quality for Arm-based designs
- DesignWare Interface IP, including controllers and PHY for USB, DDR, PCI Express, MIPI, and mobile storage, enables rapid development of mobile Arm-based SoCs

Synopsys, Inc. (Nasdaq: SNPS) today announced that Synopsys and Arm have collaborated to enable tapeouts of optimized system-on-chip (SoC) design and verification for early adopters of Arm's latest premium mobile processor IP, including the Arm® Cortex®-A77 CPU and Mali™-G77 GPU. Synopsys solutions enable optimized design of smartphones, laptops, other mobile devices, 5G, augmented reality (AR), and machine learning (ML) products using Arm's new processors including Synopsys' Fusion Design Platform™, Verification Continuum™ Platform, and DesignWare® Interface IP. In addition, Synopsys' QuickStart Implementation Kits (QIKs) for Cortex-A77 and Cortex-A55 in 7-nanometer (nm) process technology using Arm Artisan® Physical IP and POP™ IP are available today to accelerate time-to-market and achieve optimal power, performance, and area (PPA).

"For more than 25 years, our collaboration with Synopsys has enabled designers to bring innovative products to market quickly while meeting power, performance, and area targets," said Ian Smythe, vice president of marketing, Client Line of Business, Arm. "Building on the previous successes of the Cortex-A76 and the Neoverse N1 platform, early engagement with Synopsys on our new suite of IP has delivered complete solutions to enable the next generation of Arm-based mobile devices."

The QIKs for Cortex-A77 and Cortex-A55 leverage the collaboration that enabled successful early adopter tapeouts of products using the previous generation of Arm premium mobile processor IP. The QIKs, which include implementation scripts and reference guides, take advantage of new Fusion Technology to deliver enhanced PPA and faster turnaround. The QIKs were built using Arm POP technology optimized for these Arm-based mobile processors in 7nm process technology. To help designers achieve their targets quickly and confidently, Synopsys offers design services based on extensive experience hardening Arm processors; services available range from QuickStart implementation through turnkey core hardening.

Synopsys' Fusion Design Platform has been leveraged for optimized implementation of the new mobile cores:

- 7nm and below implementation in Fusion Compiler™ design, Design Compiler® Graphical synthesis, and IC Compiler™ II place-and-route system
- Higher performance with automatic density control and timing-driven placement
- Lower power with full-flow concurrent clock and datapath (CCD) optimization
- Signoff closure with PrimeTime® PBA-based ECO with power recovery and exhaustive PBA along with StarRC™ simultaneous multi-corner extraction
- Early, accelerated design optimization for power integrity and reliability with the RedHawk™ Analysis Fusion signoff-driven flow within IC Compiler II

Early adopters of Arm's new premium mobile platform are using Synopsys' Verification Continuum solutions extensively:

- Synopsys Virtualizer™ Development Kit (VDK) Family for Arm processors, with Arm Fast Models for Cortex-A77 and Cortex-A55, and Synopsys HAPS® FPGA-based prototypes
- Synopsys VCS® simulation with fine-grained parallelism technology for Arm Cortex-A processors
- Synopsys industry-first verification IP and test suites for the latest Arm AMBA® interconnect
- Synopsys ZeBu® emulation

Synopsys' high-quality DesignWare Interface IP enables rapid development of mobile Arm-based SoCs. DesignWare IP for mobile markets includes controllers and PHYs for USB, DDR, PCI Express®, MIPI, and mobile storage interfaces, and is shipping in billions of units today.

"Early adopters of Arm's latest premium mobile platform IP, including Cortex-A77 CPU and Mali-G77 GPU, benefit from our early and deep collaboration with Arm to co-optimize our design, verification, and interface IP solutions," said Deirdre Hanford, co-general manager, Synopsys Design Group. "Building on our collaboration on previous generations of Arm premium mobile IP, especially including Cortex-A76, the combination of Synopsys' Fusion Design Platform, Verification Continuum Platform, and DesignWare Interface IP delivers superior power, performance, and area with accelerated time-to-market for Arm-based products, enabling tapeout success for early adopters."

Availability

QIKs for the new Cortex-A77, Cortex-A55, and other key Arm processors are available today at https://www.synopsys.com/arm-opto.

More information about Synopsys' solutions for designing Arm-based products is available at:https://synopsys.com/Arm. You can view a video of the joint 2019 Arm/Synopsys SNUG Silicon Valley presentation on "Best Practices for Implementing the Latest Arm Processors," including Cortex-A77, at https://solvnet.synopsys.com/retrieve/3063262.html.

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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