ARM and Synopsys Expand Collaboration to Optimize Power and Performance, and Accelerate Design and Verification for ARM Technology-based SoCs

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Highlights:

- Industry leaders extend collaboration to benefit mutual customers across the broad ARM partner ecosystem
- Synopsys licenses broad range of energy-efficient, high-performance ARM IP in multi-year agreement
- Collaboration to deliver power and performance optimized methodologies for ARM® Cortex™ processors using Synopsys' Galaxy™ Implementation Platform and ARM Artisan® physical IP and POP™ technology
- Synopsys' next-generation Discovery™ Verification IP (VIP) integrates new tests, checks and verification features to speed verification of AMBA® 4 ACE™-based System-on-Chips (SoCs)

ARM (LON: ARM; Nasdaq: ARMH) and Synopsys, Inc. (Nasdaq: SNPS) have signed a multi-year agreement that expands Synopsys' access to a broad range of ARM intellectual property (IP). The two companies will broaden their collaboration to enable SoC designers to optimize the power and performance of ARM technology-based SoCs with Synopsys Galaxy Implementation Platform and Discovery VIP, while reducing cost and decreasing time to market. Building on previous EDA tools and ARM Cortex-A15 processor license agreements, this new agreement provides Synopsys with access to a range of Cortex processors, including technology needed to implement ARM big.LITTLE™ processing, ARM Artisan physical IP, POP technology optimized for Cortex processor implementation, as well as CoreLink™ interconnect and AMBA 4 ACE system IP.

By expanding their collaboration to include the latest ARM technology, Synopsys will be able to create and deliver optimized tools and methodologies for the implementation and verification of ARM processing subsystems, and ARM will be able to enhance its IP. The ongoing partnership aims to meet demand from designers for SoCs that feature both extreme energy efficiency and high performance. For example, ARM big.LITTLE processing combines Cortex-A15 MPCore™ and Cortex-A7 MPCore processors with ARM CoreLink CCI-400 cache coherent interconnect to allow software to be migrated seamlessly to the optimum processor for each task. This paradigm enables up to 70 percent processor energy savings on common workloads.

"In today's increasingly competitive market environment, optimized solutions from two industry leaders can make a big difference for our partners designing ARM technology-based SoCs by accelerating the design process and driving gains in power and performance," said Simon Segars, executive vice president and general manager, Processor and Physical IP Divisions at ARM. "By providing Synopsys with wider access to industry-leading ARM IP, we are enabling mutual customers to benefit from streamlined design and verification, ultimately, decreasing time to market."

Combining ARM and Synopsys expertise, the optimized implementation flows will use Synopsys Galaxy tools and methodologies as well as ARM Artisan physical IP and POP solutions to better enable designers to produce Cortex-A9, Cortex-A15 and Cortex-A7 processor-based designs faster and with improved performance and power results. This solution is complemented by Synopsys' Virtualizer™ Development Kit (VDK) for ARM big.LITTLE processing, as well as by Synopsys' Discovery Verification IP and Protocol Analyzer for the AMBA 4 ACE specification.

In addition to using the ARM processor-optimized methodologies with Synopsys' Galaxy tools, designers can also use Synopsys' Lynx Design System for additional productivity and predictability through a tapeout-validated, SoC-level implementation flow. Synopsys provides optimized processor implementation training and design assistance to help customers achieve their target performance and power in their chosen semiconductor process technology. Synopsys will also optimize the Discovery Verification Platform for ARM IP. Discovery VIP and Protocol Analyzer integrate additional tests, system monitor checks and other features to accelerate verification of AMBA 4 ACE interconnect-based designs.

"Synopsys tools are used in a significant portion of leading-edge implementations of ARM processor-based SoCs, and our customers are pushing for extreme performance and power efficiency," said Deirdre Hanford, senior vice president, global technical services at Synopsys. "This expanded collaboration enables Synopsys and ARM to deliver the optimized solutions that SoC designers need to meet the power and performance requirements for their ARM-powered designs."

About ARM

ARM designs the technology that is at the heart of advanced digital products, from wireless, networking and consumer

entertainment solutions to imaging, automotive, security and storage devices. ARM's comprehensive product offering includes RISC microprocessors, graphics processors, video engines, enabling software, cell libraries, embedded memories, high-speed connectivity products, peripherals and development tools. Combined with comprehensive design services, training, support and maintenance, and the company's broad Partner community, they provide a total system solution that offers a fast, reliable path to market for leading electronics companies. Find out more about ARM by following these links:

- ARM website: http://www.arm.com/
- ARM Connected Community: http://www.arm.com/community/
- ARM Blogs: http://blogs.arm.com/
- ARMFlix on YouTube: http://www.youtube.com/user/ARMflix
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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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Safe Harbor Statement

This press release contains forward-looking statements within the meaning of Section 27A of the United States Securities Act of 1933 and Section 21E of the United States Securities Exchange Act of 1934, including statements regarding the expected outcome and benefits of the agreement between Synopsys and ARM, including expected customer results with ARM and Synopsys solutions. These statements are based on current expectations and beliefs. Actual results could differ materially from those described by these statements due to risks and uncertainties including, but not limited to, technical or other difficulties in developing solutions, market acceptance of these solutions, unforeseen production or delivery delays, failure to perform as expected, product errors or defects and other risks as identified in the companies' respective filings with the U.S. Securities and Exchange Commission, including those described in the "Risk Factors" section of Synopsys' latest Quarterly Report on Form 10-Q.

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