ARM and Synopsys Announce Industry-First and Recommended Flow for ARM11 Family With Intelligent Energy Manager Technology

Galaxy™ Reference Flow Enables Faster Integration of ARM IEM Technology-Enabled IP for Low Power

PRNewswire-FirstCall
MOUNTAIN VIEW, Calif. and CAMBRIDGE, England

Synopsys, Inc. (NASDAQ: SNPS), a world leader in semiconductor design software, and ARM (LSE: ARM)(NASDAQ: ARMHY), announced the jointly developed low-power reference methodology (RM) for implementing ARM® Intelligent Energy Manager (IEM) technology in silicon. The two companies have proven that IEM technology, when used with the ARM Artisan® low-power library, can reduce the ARM processor energy consumption by up to 60 percent. The ARM-Synopsys Galaxy RM for IEM (IEM RM), co-developed by ARM and its Physical IP group (formerly Artisan) and Synopsys Professional Services, is an industry first and is built on Synopsys' Galaxy Design Platform. The IEM RM is part of a multi-year collaboration between the companies for the development and delivery of ARM processors and Intellectual Property (IP).

"Our close collaboration with ARM and Synopsys will speed the design of our next-generation low power devices for mobile applications based on the ARM1176JZF-S™ processor with IEM technology," said Sung Bae Park, vice president of Processor Architecture Lab at Samsung Electronics. "Early access to the advanced low-power techniques such as IEM can give us the potential of significant power reduction with increased design productivity."

The need for low power is not just limited to mobile and wireless devices, but extends to many different forms of electronic applications. The IEM RM is an extension of the standard ARM-Synopsys Galaxy RM, and includes an enhanced methodology guide and scripts as "best practices" for IEM technology-enabled cores and multi-voltage design techniques in Synopsys' Galaxy Design Platform and the Artisan Metro™ low-power libraries.

ARM and Synopsys proved out the IEM technology in system-on-chips (SoCs) through multiple foundries and, in the past few months, demonstrated the results to more than 1500 designers who attended ARM-Synopsys events worldwide. For a demonstration of these advanced low power techniques, visit the Synopsys booth (D8000) at the Design, Automation and Test in Europe (DATE) exhibition, March 7-11. Register for a suite demonstration at: http://www.synopsys.com/news/events/date2005/date05.html . For more information regarding the ARM-Synopsys Galaxy RM, visit http://www.synopsys.com/arm or http://www.arm.com/products/CPUs/synopsys.html .

"Our ongoing partnership with Synopsys has spanned several years and produced comprehensive reference methodologies, protocol standards and IP to address our joint customers demands for ways to speed innovation," said Mike Inglis, EVP, Marketing, ARM. "Synopsys provides a complete front-to back silicon-proven flow in low-power design, and is a standard in our development and delivery of ARM IP. With the Artisan Physical IP now a part of the total ARM product offering, we can offer our partners a comprehensive low-power IP solution for the entire SoC not just the ARM processor."

Synopsys Galaxy Design Platform offers a customer-proven solution for low power design in RTL synthesis, physical implementation and sign-off. The Galaxy platform delivers dynamic and leakage power optimization, advanced power planning, and power integrity sign-off for multi-voltage designs. This gives designers predictable 130-, 90- and 65-nanometer (nm) design flows to rapidly achieve the best low-power quality of results.

The Artisan Metro low-power platform provides physical IP specifically designed to significantly reduce power while lowering costs through increased density and yield. The Metro platform incorporates new architectures, circuit designs and low-power features enabling IC designers to implement dynamic voltage scaling and other advanced chip-level power management techniques. These techniques are already being used by the IEM technology-enabled ARM processor cores such as the ARM1176JZF-S processor and the ARM1176JZ-S processor.

"Power management and the ability to dynamically manage power within a system are some of the key requirements of today's designers," said Rich Goldman, vice president of Strategic Alliances at Synopsys. "ARM is unique in being able to provide this technology as an integral part of its processor technology. Our success with ARM on these low-power reference methodologies demonstrates how the Galaxy platform continues to enable market leaders to speed design convergence and bring innovations quickly to market."

Availability

The ARM-Synopsys Galaxy Reference Methodology is available today and is delivered by ARM with all ARM synthesizable

processor cores. The IEM RM for the ARM1176JZ-S processor and the ARM1176JZF-S processor will be available end Q1 2005 from ARM. The IEM RM will be applied in the future to other IEM technology-enabled ARM processors including the ARM11 MPCore™ multiprocessor. In addition to the Reference Methodologies, Synopsys provides ARM partners with complementary IP, including AMBA™ 2 IP and Verification IP(VIP) and AMBA 3 AXI VIP, through its DesignWare® Library tools. Additionally, Synopsys Professional Services provides design and consulting services for hardening and integrating both non-IEM and IEM technology-enabled ARM cores. Synopsys Professional Services is a global member of the ARM Design Center Program (ADC).

About ARM

ARM designs the technology that lies 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 16/32-bit RISC microprocessors, data engines, 3D processors, digital libraries, embedded memories, peripherals, software and development tools, as well as analog functions and high-speed connectivity products. Combined with the company's broad Partner community, they provide a total system solution that offers a fast, reliable path to market for leading electronics companies. More information on ARM is available at http://www.arm.com/ .

About Synopsys

Synopsys, Inc. is a world leader in EDA software for semiconductor design. The company delivers technology-leading semiconductor design and verification platforms and IC manufacturing software products to the global electronics market, enabling the development and production of complex systems-on-chips (SoCs). Synopsys also provides intellectual property and design services to simplify the design process and accelerate time-to-market for its customers. Synopsys is headquartered in Mountain View, California and has offices in more than 60 locations throughout North America, Europe, Japan and Asia. Visit Synopsys online at http://www.synopsys.com/ .

Safe Harbor Statement

This press release contains forward-looking statements, as defined in section 102 of the Private Securities Litigation Reform Act of 1995, including statements regarding ARM's introduction of the Intelligent Energy Manager Reference Methodology at the end of the first quarter of 2005 and the impact of this technology on integrated circuit design and performance. These statements are subject to various risk factors including, without limitation, risk factors associated with the semiconductor and intellectual property businesses, technical or other difficulties in the introduction, release and use of the Intelligent Energy Manager Reference Methodology, the performance of semiconductors designed using the Intelligent Energy Manager Reference Methodology, market acceptance of the Intelligent Energy Manager Reference Methodology and products designed using it and risks and uncertainties attendant to any new product offering. It is believed that the expectations reflected in these statements are reasonable, but they may be affected by a variety of variables, many of which are beyond our control. More information about potential factors that could affect ARM's business and financial results is included in ARM's Annual Report on Form 20-F for the fiscal year ended December 31, 2003 including (without limitation) under the captions, "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," which is on file with the Securities and Exchange Commission (the "SEC") and available at the SEC's website at www.sec.gov.

SOURCE: Synopsys, Inc.

CONTACT: editorial, Pierre Golde of Synopsys, Inc., +1-650-584-4194, or golde@synopsys.com; or Michelle Spencer of ARM, +44 1628 427780, or michelle.spencer@arm.com; or Melissa Chanslor of Edelman Public Relations, +1-650-968-4033, or melissa.chanslor@edelman.com, for Synopsys, Inc.

Web site: http://www.synopsys.com/