Synopsys Announces Industry-Wide Support for Liberty™ Composite Current Source (CCS) Library Models

ARM, TSMC, Virage Logic and Library Technologies Gear Up to Support CCS-enabled 90nm Libraries

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Synopsys, Inc. (NASDAQ: SNPS), a world leader in semiconductor design software, today announced ARM, TMSC, Virage Logic, and Library Technologies support of Synopsys open source Liberty™ Composite Current Source (CCS) models in their intellectual property (IP) for semiconductor design. CCS enables high-accuracy delay calculation to within two percent of HSPICE® circuit simulator, improving design quality of results and time to results within the Synopsys Galaxy™ Design Platform.

"ARM's long-standing strategic relationship with Synopsys focuses on making available to our mutual customers advanced, joint design solutions," said Neal Carney, vice president of Marketing, Physical IP, ARM. "ARM provides Liberty models for its products supporting a large number of semiconductor foundries and processes, and has enhanced its characterization infrastructure to generate Liberty CCS models. These models enable higher accuracy and more efficient voltage scaling capabilities in support of advanced process demands and new design styles, like the ARM® Intelligent Energy Manager (IEM) technology. CCS models for the ARM Artisan® SAGE-X™ standard cell library on TSMC's 90-nanometer GT process are immediately available for download to beta customers."

"Current-source modeling efficiently depicts first-order nanometer effects," said Edward Wan, senior director of design service marketing at TSMC. "Our evaluation of CCS does show this technique is more accurate in dealing with Miller capacitance and interconnect effects. Our library team is working closely with Synopsys to improve and take advantage of this technology, to enhance design quality and accelerate implementation and sign-off."

TSMC Nexsys 90-nm libraries that allow the CCS model will be available starting third quarter 2005.

To account for first-order nanometer effects, customers typically add margins to their designs. This approach, however, becomes prohibitively expensive in designs applying today's advanced process geometries and design styles. CCS is a breakthrough approach for accurate gate-level delay calculation with detailed RC parasitics. CCS patent-pending technology includes efficient representation of transistor-level driver and receiver characteristics for each library cell. CCS provides highest accuracy relative to circuit simulation, and is designed to provide a unified foundation model for cell delay, noise, power and variation. Using CCS technology, designers can scale back on design margins and produce higher performance designs with smaller areas.

"CCS models provide the accuracy and flexibility needed for our IPrima Foundation™ and IPrima Mobile™ Semiconductor Intellectual Property (IP) platforms," said Brani Buric, senior director of business development and platform product marketing at Virage Logic. "We are pleased to collaborate with Synopsys to provide integrated solutions to our mutual customers to address the complex features of nanometer designs and will have CCS-enabled 90-nm libraries available starting in the third quarter of this year."

"CAD organizations today require library characterization tools that deliver high-accuracy models efficiently," said Mehmet Cirit chief executive officer of Library Technologies Inc. "We are very pleased to partner with Synopsys to support the Liberty open source CCS model because it enables highly accurate models to within two percent of HSPICE without increasing characterization runtime. Our library characterization solution LibChar has already been updated to support full set of CCS features."

"The Liberty open source library standard is widely supported in the industry today. CCS extends the capabilities in Liberty to enable higher-accuracy modeling of nanometer effects essential in the delivery of today's designs at 90-nanometer and below," said Antun Domic, senior vice president and general manager, Synopsys Implementation Group. "Our collaboration with industry-leading foundry, IP providers, and characterization suppliers such as ARM, TSMC, Virage Logic and Library Technologies will give our mutual customers access to the most advanced tools, flows and proven libraries."

About Synopsys

Synopsys, Inc. is a world leader in electronic design automation (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/.

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Editorial Contacts:
Nancy Renzullo
Synopsys, Inc.
(650) 584-1669
renzullo@synopsys.com

Sarah Seifert
Edelman Public Relations
(650) 429-2776
Sarah.seifert@edelman.com

SOURCE: Synopsys, Inc.

CONTACT: Nancy Renzullo of Synopsys, Inc., +1-650-584-1669, or renzullo@synopsys.com; or Sarah Seifert of Edelman Public Relations, +1-650-429-2776, or Sarah.seifert@edelman.com, for Synopsys

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