Synopsys Awarded Multi-Year IARPA SuperTools Contract to Develop EDA Tool Flows for Superconducting Electronics

Program's Goal is to Advance Superconductor Design and Propel Electronics Beyond CMOS

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Highlights:

- Synopsys will enhance its state-of-the-art EDA tool flow to support ultra-low temperature superconducting technology
- Increasing the scale, efficiency, and quality of Superconducting Electronics (SCE) design is critical to realizing its potential in applications such as supercomputers, enabling them to operate at exascale speed, perform 10^{18} calculations per second, and use less power than today's petascale machines
- Partnerships and collaboration with leading industry and academic experts will foster the development of a comprehensive solution for SCE that will benefit Synopsys' customers in government and commercial high-performance computing

Synopsys, Inc. (Nasdaq: SNPS) today announced that the Intelligence Advanced Research Projects Activity (IARPA) has awarded Synopsys a significant multi-year research and development contract to advance EDA tool flows for Superconducting Electronics (SCE). As part of the IARPA SuperTools program, Synopsys will collaborate with experts in the field of SCE to develop a comprehensive set of tools that increase the scale, efficiency, and manufacturability of these designs. SCE technology promises to enable advanced high-end computing applications, cryogenically operated low noise sensors and imagers, space applications, and communication links. SCE technology has the potential to propel the electronics industry beyond CMOS, enabling a major leap in processing speeds and power efficiency.

"The goal of the SuperTools program is to help make the same design and TCAD tools and quality libraries that drove the semiconductor industry's growth available for the emerging superconductor industry," said Dr. Mark Heiligman, manager of the IARPA SuperTools program. "As a long-time leader in design and TCAD, and the largest EDA company, Synopsys is an outstanding company to lead the development of this tool flow."

IARPA estimates that SCE operating in a cryogenic environment would allow a supercomputer to operate at 100 petaflops of performance for about 200 kilowatts. Today, supercomputers run at 20 petaflops and 10 megawatts.

"For over thirty years, Synopsys has developed EDA tools that have enabled the semiconductor industry to keep pace with semiconductor scaling and enabled Moore's Law," said Antun Domic, chief technology officer of Synopsys. "IARPA's investment in superconducting technology, as evidenced by the C3 supercomputer and now SuperTools programs, can help SCE evolve and become accessible for more designs. We look forward to our collaboration with IARPA to expand the technical success and enable commercial customers to take advantage of this technology as it evolves."

Partnering for Success

Synopsys has partnered with leading superconducting industry and academic experts. HYPRES Inc., a leading SCE company, will consult on developing libraries, circuits, IP processing and testing. Academic experts from Stony Brook University, Yokohama National University, and the University of Rochester will play key roles in the guidance and development of the project. As Richard Hitt, president of HYPRES, explains, "Conventional semiconductor design is highly automated and circuits that can contain more than one billion gates are created with automated design tools. Superconductor circuits today can operate at clock speeds in excess of 100Ghz but are limited to thousands of gates that must be hand-crafted by experts. We're very excited to help IARPA and Synopsys enable broader use of this technology by bringing to bear our years of SCE design, testing and manufacturing expertise to this program." For more information on HYPRES, visit http://hypres.com/.

Availability

Deliverables resulting from the program will be available over the next two to five years. For updates on the progress of this program, please email sce-interest@synopsys.com to be added to our mailing list.

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.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, including statements regarding the expected release and benefits of enhancement of EDA software in support of Superconducting Electronics. Any statements that are not statements of historical fact may be deemed to be forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that could cause actual results, time frames or achievements to differ materially from those expressed or implied in the forward-looking statements. Other risks and uncertainties that may apply are set forth in the "Risk Factors" section of Synopsys' most recently filed Quarterly Report on Form 10-Q. Synopsys undertakes no obligation to update publicly any forward-looking statements, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

Editorial Contact:
Monica Marmie
Synopsys, Inc.
650-584-2890
monical@synopsys.com

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