NEWS RELEASE

Editorial Contacts:
James Watts
Synopsys, Inc.
650-584-1625
jwatts@synopsys.com

Benedicte Robin
CEA
+33 7 86 35 69 88
benedicte.robin@cea.fr

Synopsys and CEA Announce Partnership to Develop Emulation Solutions for Automotive Applications

Partnership Enables Advancement of ZeBu Server as the Leading SoC Emulation Tool for the Automotive Industry

MOUNTAIN VIEW, Calif., Nov. 13, 2017 –

Synopsys, Inc. (Nasdaq: SNPS) and the French Alternative Energies and Atomic Energy Commission (CEA), a key player in technology research, today announced their new partnership based on Synopsys ZeBu® Server-3 emulation solution for advancing their initiatives in automotive SoC and system design. With its high performance, capacity, scalability, and support for standard-based connectivity protocols, ZeBu Server enables full system verification of complex automotive SoCs and research of fault detection and fault recovery mechanisms. The partnership aims to shorten automotive system design cycles and increase design quality compliant with industry standards using ZeBu Server.

Systems are becoming increasingly complex, particularly in the automotive industry. This is creating new challenges in terms of validation, whether it is for cyber-physical systems, smart power management, or electronic component safety. CEA List researchers are already using Synopsys ZeBu, the industry's fastest emulation system. However, more powerful emulation systems will be needed to respond to the demands of next-generation cyber-physical systems, especially for automotive applications. The new joint lab between the CEA and Synopsys will respond to this need through a relevant and strategic industrial partnership that will maintain a sharp focus on verification and hybrid emulation with the

integration of ZeBu Server in a multi-physics automotive simulation environment. It will also enable large-scale hybrid co-simulation for ADAS applications with the combination of ZeBu Server-3 and the Synopsys Virtualizer™ and Platform Architect™ virtual prototyping solutions.

"The CEA will research how high-performance emulation technology can enhance advanced fault injection techniques as well as standard methods," said Philippe Watteau, director, CEA List. "Working with Synopsys positions us to more effectively address our automotive-industry partners' electronics development needs through state-of-the art emulation capabilities."

The joint lab will focus on three challenges.

- Validation of complex automotive systems that combine physical components (sensors and actuators) and cyber components (electronic systems and their software), and require the composition of multiple simulation domain tools leading to complex hybrid co-emulation.
- Performing online power consumption estimation without hampering emulation speed. It will factor in the energy budget and the temperature dissipation as required in modern E/E automotive architectures.
- Characterizing and improving design reliability through the development of a new methodology that leverages the speed and functional accuracy offered by emulation.

"We are working with leading automotive semiconductor manufacturers, Tier 1 automotive suppliers and OEMs to advance verification and software teams using innovative verification technologies to meet aggressive time-to-market timelines," said Eshel Haritan, vice president of R&D in the Synopsys Verification Group. "We are excited to support an important automotive research partner to expand emulation use cases for automotive into new areas."

The partnership aims to shorten automotive system design cycles and increase design quality compliant with industry standards. Addressing emerging needs in verification on key advanced driver assistance systems (ADAS) applications, the partnership also aims to create new opportunities in the transportation industry as a whole.

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.

About the CEA

A leader in research, development and innovation, the French Alternative Energies and Atomic Energy Commission (CEA) works in four major fields: defense and security, nuclear and renewable energies, technological research for industry, and fundamental research in the physical sciences and life sciences. For more information visit: www.cea.fr.

The List, an institute of CEA Tech, the CEA Technological Research Division, carries out research on smart digital systems. Working on major economic and social challenges, its R&D programs focus on advanced manufacturing, embedded systems, data intelligence and technologies for digital patient applications. By developing advanced technologies, CEA List enhances the industrial competitiveness of its partners through innovation and technology transfer initiatives. Thanks to the quality of its joint research programs, CEA List joined the Carnot Institutes network in 2006. For more information visit: www-list.cea.fr.

###