SIEMENS

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Siemens' breakthrough Veloce CS transforms emulation and prototyping with three novel products

- **Innovative Veloce CS architecture unifies hardware emulation, enterprise prototyping and software prototyping to accelerate verification and validation cycles by 10x and helps to reduce total cost of ownership by up to 5x**
- **The Veloce CS software is reusable across all platforms, helping to eliminate new learning requirements and accelerating full system workload execution and debug times by 10x**
- **Innovative, modular and scalable interconnectable blade footprint eliminates fixed-size chassis, delivering hardware-assisted tools for all size designs – from small to very large**

Siemens Digital Industries Software launched today the Veloce™ CS hardware-assisted verification and validation system. In a first for the EDA (Electronic Design Automation) industry, Veloce CS incorporates hardware emulation, enterprise prototyping and software prototyping and is built on two highly advanced integrated circuits (ICs) – Siemens' new, purpose-built Crystal accelerator chip for emulation and the AMD Versal™ Premium VP1902 FPGA adaptive SoC (System-on-a-chip) for enterprise and software prototyping.

The solution encompasses three new offerings:

- Veloce™ Strato CS hardware for emulation.
- Veloce™ Primo CS hardware for enterprise prototyping.
- Veloce™ proFPGA CS hardware for software prototyping.

Architected for congruency, speed, and modularity across all three platforms, the Veloce CS system supports design sizes from 40 million gates, up to designs integrating more than 40+ billion gates. In addition, Veloce CS executes full system workloads with superior visibility and congruency by selecting the right tool for the task, as each task has unique requirements. This enables much faster time to project completion and assists in decreasing cost per verification cycle.

To achieve this milestone, Siemens has worked with key customers and partners to develop innovative hardware and a new, fully unified software architecture:

- Veloce Strato CS delivers significant emulation performance improvement over Veloce Strato, up to 5x maintaining full visibility and it scales from 40 million gates (MG) to 40+ billion gates (BG).
- Veloce Primo CS, based on AMD's latest Versal Premium VP1902 FPGA, is the industry's most congruent enterprise prototyping system, and it also scales from 40MG to 40+BG.
- Both the Veloce Strato CS and Veloce Primo CS solutions run on the same operating system, which delivers exceptional congruency while providing the freedom to seamlessly move between platforms. This can dramatically accelerate ramp up, setup time, debug, and workload execution.
- Veloce proFPGA CS, which also leverages the AMD Versal Premium VP1902 FPGA-based adaptive SoC, which delivers a fast and comprehensive software prototyping solution, scaling from one FPGA to hundreds. This exceptional performance, together with its highly flexible and modular design, can help customers dramatically accelerate firmware, operating system, application development and system integration tasks.

The entire Veloce CS system is available in a modular blade configuration that is fully compliant with modern datacenter requirements for easy installation, low power, superior cooling, and compact footprints. Further, the Veloce proFPGA CS solution provides a desktop lab version for additional user flexibility.

Veloce CS is qualified to run with the latest AMD EPYC™ CPU-powered HP DL385g11 servers.

"The evolution of SoC and system level design has brought about many changes in the last ten years that have made the use of hardware-assisted verification more necessary than ever," said Alex Starr, Corporate Fellow, AMD. "We have been working closely with Siemens to incorporate AMD's leading Versal Premium VP1902 device into the heart of the Veloce Primo CS and Veloce proFPGA CS systems for increased performance and scalability, as well as qualifying the AMD EPYC CPU-powered HP DL385 gen11 servers for use with the entire Veloce CS system. The Veloce CS system, including the Veloce Strato CS emulation platform, shows how Siemens responds to customer needs and showcases the innovation happening in the Veloce group."

Customers have access to the industry's most comprehensive portfolio of apps and solutions, common across all three new Veloce CS system offerings.

"Time to market is critical to the entire Arm partner ecosystem, emphasizing a need for tools that offer modularity, granularity and speed for IP and SoC verification," said Tran Nguyen, senior director of design services, Arm. "Siemens' Veloce platforms have become an integral part of the Arm development process and we continue to see benefits of the new Veloce Strato CS system for hardware design acceleration and software development."

"Veloce CS provides the industry's only fully congruent, high-speed, modular hardware-assisted system with three systems," said Jean-Marie Brunet, vice president and general manager, Hardware-Assisted Verification, Siemens Digital Industries Software. "With the Veloce CS system, we are addressing the specific needs of hardware, software, and system engineers who all play an essential part in delivering the world's most advanced electronic products. By providing the right tool for the task, Veloce CS innovations speed up the entire verification process, and lower total cost of ownership, which can boost profitability."

Availability

The Veloce Strato CS system is available now for selected partner customers. General availability of the three hardware platforms is planned for summer 2024. The Veloce CS system is planned to be cloud ready with general availability. To learn more about how Siemens is enabling the semiconductor and electronic

systems industry to deliver to market the world's most advanced SoCs and systems, visit: https://eda.sw.siemens.com

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Contact for journalists

Siemens Digital Industries Software PR Team
Email: press.software.sisw@siemens.com

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Siemens AG (Berlin and Munich) is a leading technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers. By combining the real and the digital worlds, Siemens empowers its customers to transform their industries and markets, helping them to transform the everyday for billions of people.

In fiscal 2023, which ended on September 30, 2023, the Siemens Group generated revenue of €77.8 billion and net income of €8.5 billion. As of September 30, 2023, the company employed around 320,000 people worldwide. Further information is available on the Internet at www.siemens.com.

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