

Synopsys Introduces Integrated Electric Vehicle Virtual Prototyping Solution

Multi-Discipline Solution Enables Earlier, More Productive and Scalable Development Across Power Electronics to Software Development and Test

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Highlights:

- Virtual prototyping enables development teams to start earlier, be more productive and rapidly scale verification and validation of electric vehicle electronic systems
- Integrated solution leverages Synopsys virtual prototyping technologies, including SaberRD, Virtualizer, Silver and TestWeaver tailored for the needs of electric vehicles
- Solution supports the broadest set of development tasks from control systems, firmware and application development to functional safety, system integration and calibration

[Synopsys, Inc.](#) (Nasdaq: [SNPS](#)) today announced the industry's most comprehensive virtual prototyping solution for the development of electric vehicle (EV) electronics hardware and software. The [integrated solution](#) leverages Synopsys' best-in-class virtual prototyping technologies, including [Virtualizer™](#), [Silver](#), [TestWeaver®](#) and [SaberRD](#), enhanced for the specific needs of electric vehicle system development. From power electronics through software development and test, the multi-discipline integrated solution enables earlier and more productive development, and rapid scaling of test activities by removing the dependency on a physical hardware set up.

According to [Bloomberg New Energy Finance](#), the global electric car market will reach 60 million electric vehicles by 2040. As competition increases, efficiency defined by the traveling range at a given speed and watt-hours consumption is a key success metric. Automotive companies are focusing on electronics hardware and software to enable a more intelligent solution using fewer electromechanical parts to improve efficiency. In this race, developers are faced with hardware design, software development and system testing challenges, such as early design space exploration, electrical component selection, expensive prototypes, model availability, complex software development and integration, functional safety testing and large-scale high bandwidth secure multi-protocol verification.

"Electronics plays a significant role in improving the efficiency of electric vehicle systems," said Burkhard Huhnke, Chief Technology Officer at Fisker Inc. "Reducing development cost and time, and increasing time-to-market requires deploying new development tools. Virtual prototyping tools allow for earlier, more productive and broadly scalable development. Synopsys' integrated virtual prototyping solution for electric vehicle development is a great step forward, enabling multi-discipline development and collaboration."

Synopsys' integrated multi-discipline solution based on industry-proven virtual prototyping technologies have been enhanced to support the specific needs of EV design including:

- EV model libraries for power electronic, microcontrollers and AUTOSAR components
- Multi-level fast simulation from abstract to high fidelity for detailed analysis
- Debug, analysis and test functionality to support functional safety, HW/SW debug, variation analysis, coverage analysis and calibration design tasks
- APIs for integration into additional automotive flows and tools including support for the Functional Mockup Interface (FMI).

"Optimizing battery management systems, handling complexity of software, and ensuring functional safety are some of the key EV development challenges our customers are facing today," said Tom De Schutter, vice president of Engineering at Synopsys. "Our continuous investment in virtual prototyping technologies provides our automotive customers a more comprehensive application focused solution, enabling them to reduce development cost and deliver better products."

Availability

Synopsys [electric vehicle virtual prototyping solution](#) is available now.

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.

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