Synopsys Showcases Vision For AI-Driven, Software-Defined Automotive Engineering at CES 2026

Synopsys solutions accelerate innovation from systems to silicon, enabling more than 90% of the top 100 automotive suppliers to boost engineering productivity, predict system performance, and deliver safer, more sustainable mobility

Key Highlights

- Synopsys will support the Fédération Internationale de l'Automobile (FIA), the global governing body for motorsport and the federation for mobility organizations worldwide, to enhance single-seater safety standards
- Ansys AVxcelerate Sensors™ software now includes the Samsung ISOCELL Auto 1H1 automotive image sensor to simulate performance with high fidelity under real-life conditions
- Synopsys Virtualizer™ Developer Kits for customers' latest automotive SoCs enable system bring-up within days of silicon availability and accelerate vehicle time to market by up to 12 months

SUNNYVALE, Calif., Jan. 6, 2026 /PRNewswire/ -- Synopsys, Inc. (NASDAQ: SNPS) is showcasing AI-driven and software-defined engineering solutions this week at CES that tackle one of the industry's biggest challenges: accelerating automotive engineering innovation in the age of AI while reducing cost and complexity. From intelligent system-level simulation to semiconductor design at the atomic scale, Synopsys enables automakers and suppliers to virtualize silicon and software development, predict system performance, and optimize reliability, cutting prototyping costs and shortening release cycles.

"The rise of software-defined mobility and the introduction of AI into the car necessitate a foundational shift in automotive engineering," said Ravi Subramanian, Chief Product Management Officer, Synopsys. "Synopsys is empowering automakers to innovate at the pace that software-defined, intelligent platforms demand. By virtualizing design, integration, and prototyping, we are helping automotive customers accelerate development, reduce costs and time to SOP (Start of Production), and deliver next-generation performance and safety."

Enable New Industry Economics Through Virtualization and Intelligent Engineering

Automotive profitability is increasingly driven by software, making R&D efficiency a critical differentiator. As OEMs tackle electrification, autonomy, and sustainability, traditional metrics like design-to-cost can't keep pace, leading to hundreds of millions spent annually on testing. Virtualizing vehicle electronics for design, integration, testing, and validation can cut costs by 20–60% and accelerate time-to-market. This software-first approach empowers automakers to unlock new revenue streams through connected experiences, OTA updates, and lifecycle services, creating a foundation for sustainable growth in the era of software-defined mobility.

Synopsys empowers automotive innovators across the entire ecosystem, including Arbe Robotics, Audi, and Samsung, to compete and win in this new paradigm.

"Delivering radar technology that transforms automotive safety requires innovation from antenna design to AI-driven perception," said Dr. Noam Arkind, CTO at Arbe. "With Synopsys' engineering IP and leading simulation, we can validate complex architectures, adhere to ISO 26262 safety standards, and accelerate development without costly hardware iterations. Synopsys' systems-to-silicon expertise enables us to bridge hardware and software seamlessly, helping OEMs and Tier 1 suppliers bring next-generation ADAS and autonomous features to market faster and with greater confidence."

"Audi is advancing the in-vehicle experience by putting the customer at the center of development," said Geoffrey Bouquot, CTO at Audi. "Virtual methods allow us to address this focus at the earliest stages of the process. With Synopsys' simulation solutions, our teams leverage AI-driven models to accelerate design exploration and scale virtual validation across programs. This approach reduces physical prototyping and shortens development cycles while ensuring greater reliability and customer benefit — paving the way for safer, smarter, and more intuitive mobility experiences."

"At Samsung, we envision a future where automotive systems deliver greater safety and intelligence through advanced imaging," said Haechang Lee, EVP and head of the system LSI sensor business team at Samsung Electronics. "By integrating the Samsung ISOCELL Auto 1H1 into Ansys AVxcelerate Sensors, we are enabling OEMs and suppliers to virtually experience real-world driving conditions with predictive accuracy — long before hardware integration. This collaboration represents an important step toward accelerating autonomous vehicle development, reducing risk, and helping shape a smarter, safer mobility ecosystem."

Amplify Engineering Performance with Integrated Simulation

Synopsys announced the following news this week, showcasing how the company is driving innovation across automotive and motorsport through strategic partnerships and cutting-edge simulation technologies that accelerate development and enhance safety.

- Ansys AVxcelerate Sensors now includes the Samsung ISOCELL Auto 1H1 automotive image sensor to simulate performance with high fidelity under real-life conditions. This critically enables OEMs and suppliers to directly implement results early in the design cycle without hardware.
- Synopsys will support the Fédération Internationale de l'Automobile (FIA) to enhance single-seater safety standards
- Today's single-seater cockpits are already highly refined for safety. Synopsys will support the FIA to unlock the next safety advancements using state-of-the-art design optimization and predictively accurate digital human body models to process thousands of parameters.

Accelerate Vehicle Time to Market: "Shift Left" Electronics System Verification and Validation

Synopsys is accelerating the development of software-defined vehicles through industry-leading virtualization solutions that enable electronics digital twins. These capabilities combined with partner solutions and expertise support system vehicle development, testing, and validation before silicon production, helping to reduce integration risk, shorten release cycles, and enable earlier and more reliable SOP. Synopsys news at CES 2026 with automotive ecosystem partners, includes:

- **Arm:** Synopsys introduced a new Virtualizer Development Kit (VDK) for Arm® Zena™ Compute Subsystems (CSS), enabling automotive teams to rapidly build, integrate, and validate systems on a standardized, safety-capable compute platform — on-prem or in the cloud. The VDK provides a SOAFEE blueprint showcasing the OpenAD autonomous driving stack, providing a reference implementation to jump-start development. This solution supports scalable virtual development with multi-ECU, multi-vendor integration as well as CI/CD pipelines from concept through silicon for continuous updates throughout the vehicle lifecycle. Learn more here.

- **IPG Automotive:** Synopsys and IPG Automotive are demonstrating an expanded multi-ECU prototype with multi-fidelity, multi-ECU electronics simulation integrating IPG CarMaker and Synopsys virtualization technologies via SIL Kit. The prototype aims to accelerate the development of SoC-based electronics and system software; enable rapid, reliable SDV validation; and establish a continuous test strategy that together help improve software quality, reduce development and post-sale warranty costs, and enable faster time to market. Learn more here.

- **SiMa.ai:** SiMa.ai announced the first integrated capability with Synopsys resulting from the companies' strategic collaboration. The joint solution provides a blueprint to accelerate architecture exploration and early virtual software development for AI-ready, next-generation automotive SoCs that support applications such as Advanced Driver Assistance Systems (ADAS) and In-vehicle-Infotainment (IVI). Learn more here.

In addition, automotive engineers rely on Synopsys VDKs to begin software development using virtual prototypes of SoCs months before silicon is available, enabling full system bring-up within days of silicon availability and accelerating vehicle time to market by up to 12 months. During CES 2026, Synopsys announced the following new VDKs:

- **Synopsys and NXP® Semiconductors** are expanding their collaboration with Synopsys VDKs supporting the new S32N7 family of high-performance computers for AI-powered, next-generation vehicle cores. Learn more here.

- **Texas Instruments:** To simplify complex vehicle software management, TI is collaborating with Synopsys to provide a VDK for its TDA5 SoC family. The Synopsys VDK enables electronics digital twin capabilities that help engineers significantly accelerate time-to-market for SDVs. Learn more here.

Join Synopsys' CEO Discussion with Six Five Media

Synopsys CEO Sassine Ghazi will join the hosts of the Six Five Podcast,Patrick Moorhead, Chief Analyst and CEO of Moor Insights & Strategy, and Daniel Newman, Chief Analyst and CEO of the Futurum Group, for a conversation on the future of automotive engineering. This includes how technology advancements from AI to digital prototyping promise to re-engineer how cars are engineered.

- When: Wednesday, January 7 from 1:00–1:30 PM PT

- Where: Synopsys Booth #6701 West Hall

Find the full lineup of Synopsys executive sessions at CES on the Synopsys website and visit Synopsys during CES 2026 at the Las Vegas Convention Center, West Hall, Booth #6701 to learn more about the company's automotive engineering solutions. Follow online for updates via the Newsroom, on LinkedIn, and on X.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the leader in engineering solutions from silicon to systems, enabling customers to rapidly

innovate AI-powered products. We deliver industry-leading silicon design, IP, simulation and analysis solutions, and design services. We partner closely with our customers across a wide range of industries to maximize their R&D capability and productivity, powering innovation today that ignites the ingenuity of tomorrow. Learn more at www.synopsys.com.

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