Synopsys Convenes Industry Leaders to Discuss Future of Automotive Engineering for Software-Defined Vehicles

What's New: Synopsys hosted a series of events with automotive ecosystem leaders to discuss the trends, technologies, and engineering capabilities needed to advance the development of AI-powered, software-defined vehicles (SDVs).

The events took place throughout September and October in key global markets and gathered more than 900 automotive executives and engineers to discuss advancements in digital engineering as critical enablers to reduce development costs, accelerate time to market, and improve vehicle quality and safety. Representatives from customers and partners such as Arm, AUMOVIO, BMW, Daimler Truck, Hyundai, IPG, Rivian and Volkswagen Group Technologies, Stellantis, and Volvo, among others participated to share their insights regarding hardware/software co-design best practices; de-risking start of production (SOP) timelines; and accelerating software development, system integration, and test.

Why it Matters: R&D efficiency is emerging as the key driver of profitability for automotive OEMs and suppliers that must balance pressure to improve cost optimization, innovation, and differentiation while reducing integration risks, shortening release cycles, and enabling earlier, more reliable SOP. Traditional metrics like design-to-cost or hours-per-vehicle no longer reflect the complexity or pace of modern automotive development. The financial implications are staggering considering that large OEMs often spend hundreds of millions annually on test vehicles, with more than half of that tied to software and electronics.[1] The virtualization of vehicle electronics for design, integration, and test can reduce these costs by 20–60%, while also slashing the risk of SOP delays, which can cost up to $1 billion for a six-month slip.[2]

A Closer Look: Forums hosted by Synopsys with automotive industry leaders in key regions, include:

- **Ansys Transportation Summit:** Hosted at BMW Welt in Munich, the Transportation Summit featured keynotes from leading OEMs such as Hyundai and Stellantis, alongside Porsche Motorsport and Synopsys technology partners, on topics including electrification and autonomous systems to digital twins and advanced simulation. In addition, technical presentations and workshops offered attendees access to cutting-edge digital engineering innovations spanning crash analysis, human body models, battery development, SDVs and electronics, ADAS sensor development, systems and safety analysis, noise, vibration, and harshness (NVH), optimization, and AI-powered simulation.

- **Synopsys and AWS Automotive Innovation Day:** Hosted at the AWS Prototyping & Innovation Lab in Silicon Valley, Synopsys and AWS discussed their latest collaborations to advance the development of SDVs with automotive executives. Attendees observed the power of electronics digital twins used for the verification and validation of automotive systems, from control functions and ADAS and IVI to multi-ECU vehicle systems. With AWS, the teams demonstrated the ability to scale and execute many tests in parallel using the cloud and CI/CD without expensive and rigid physical test benches. The event also featured a talk from Rivian and Volkswagen Group Technologies regarding their internal shift-left methodology to identify and mitigate embedded software issues early.

- **Synopsys China Automotive Technology Day:** Automotive OEMs and Tier 1 suppliers joined the event in Shanghai to discuss emerging software and silicon ecosystems that are helping accelerate SDV development as well as reduce related costs. Sessions explored the silicon value chain including advanced design capabilities that enable a deeper integration of electronics. Presentations from Synopsys, customers, and partners provided attendees first-hand insights regarding the use of virtual system integration and test processes to speed time-to-market.

- **Synopsys Automotive Virtual Prototyping Day:** Automotive executives attended the event in Munich to gather best practices and insights during talks from Arm, AGSOTEC with BMW, Daimler Truck, IPG, Volvo, and more as these companies effectively shift-left their automotive software and system verification and validation using electronics digital twins that improve test automation, software-in-the-loop, and virtual hardware-in-the-loop capabilities.

- **Ansys Simulation World:** The global series recently featured events in Detroit and Japan where industry leaders showcased the latest advancements in simulation technology. Major automotive brands and suppliers shared insights on deploying advanced digital engineering solutions to accelerate product development, from AI accelerating simulation cycles by 10x to virtual design validation for automotive electronics.

Synopsys will next showcase its latest collaborations and capabilities that advance automotive engineering from silicon to systems during CES 2026, January 6-9, 2026, in the Las Vegas Convention Center. Stay tuned for more details to join our team onsite at our booth, attend event sessions featuring Synopsys executives, and receive our news. Follow Synopsys online for updates via our Newsroom, on LinkedIn, and on X.

Resources:

- **eBook:** Automotive Executive Guide 2025
- **eBook:** Navigating Vehicle Engineering in a Software-Defined World
- **Docuseries:** Driven by Simulation
- **Blog:** Automotive Reckoning: Industry Leaders Discuss the Race to Redefine Car Development, featuring Mercedes-Benz R&D North America
- **Webinar:** Shaping the Future of Software-Driven Mobility Platforms, featuring Bosch Global Software Technologies
- **Webinar:** Digital Engineering Technology for Software-Defined Vehicles

[1, 2] Based on Synopsys analysis, Synopsys Automotive Executive Guide, 2025.

Additional assets available online: