Synopsys Launches Ansys 2026 R1 to Re-Engineer Engineering with Joint Solutions and AI-Powered Products

Release combines AI, multiphysics simulation, and real-world digital twin technology to transform how teams explore designs, validate earlier, and engineer smarter, more resilient systems

Key Highlights

- Delivers unified Synopsys-Ansys workflows that bring together previously separate engineering processes to create more cohesive and efficient product development
- Advances generative AI and first agentic engineering capabilities that speed design exploration, automate preprocessing, and enable faster, system-level insight
- Enhances system-level engineering with expanded digital twin capabilities and connected modeling workflows that deliver deeper real-world insight across complex systems

SUNNYVALE, Calif., March 11, 2026 /PRNewswire/ -- Synopsys, Inc. (NASDAQ: SNPS) today launched Ansys 2026 R1, delivering the first wave of integrated Synopsys-Ansys capabilities built on nearly a century of combined engineering expertise. The release also expands the Ansys simulation AI portfolio with a new, AI-enhanced training offering designed to make learning more effective and efficient, along with advanced AI features that help engineering teams gain earlier system-level insight, reduce reliance on physical testing, and optimize performance across increasingly complex, software-defined products.

"The transition to intelligent, interconnected systems is driving the need for faster, physics-first, system-level design," said Ravi Subramanian, Chief Product Management Officer at Synopsys. "By bringing Synopsys and Ansys technologies together, we're moving beyond point-to-point connections to create a unified fabric that links materials, physics, electronics, and software into a seamlessly orchestrated design environment. Synopsys enables organizations to move from concept to reality with extreme speed, empowering engineering teams and customers to innovate with confidence."

Joint Solutions Accelerating the Future of Systems-Aware Engineering

Ansys 2026 R1 marks the beginning of a new era for engineering shaped by rising system complexity, AI-driven product demands, and the industry's shift to early validation. To meet these pressures, Synopsys introduces targeted, system-aware integrations between select Synopsys and Ansys technologies, delivering high-impact workflows that accelerate early exploration, improve cross-domain collaboration, and provide deeper insight across key industries.

New Synopsys-Ansys joint solutions delivered in the Ansys 2026 R1 release include:

- **Synopsys VC Functional Safety Manager (VC FSM)** and **Ansys medini® analyze™** software are now connected by an end-to-end safety workflow that links system-level and silicon-level safety analysis. The integration streamlines collaboration among system safety and chip safety verification engineers by automating traceability from systems to chip. The workflow also eliminates manual data sharing processes between tools, saving time for critical applications in automotive and aerospace safety.
- **Synopsys QuantumATK®** and the **Ansys Granta MI®** platform are integrated for an atomic-scale-to-enterprise materials workflow that supports material discovery, novel material development, and manufacturing process improvement. The integration streamlines collaboration among materials scientists and design engineers by enabling direct export of simulation-ready, validated material properties into Granta MI. This repeatable workflow creates curated, consistent materials records that help teams predict performance earlier and make more data-driven decisions.
- **Synopsys OptoCompiler™** and **Ansys Lumerical FDTD™** software are integrated to create a design workflow connecting device-level photonic design with advanced system-level optical simulation. The integration improves collaboration between device designers and system-level photonic engineers by automating Verilog-A model generation and ensuring consistent optical behavior across tools. The workflow also eliminates manual data translation between design and simulation environments, saving time and improving reliability for advanced photonic applications.
- In addition to the **Ansys SCADE®** model-based software development solution, Synopsys offers **TPT,** a robust test automation solution for control software. Together, these synergistic technologies help customers strengthen their development workflows, streamline verification, and accelerate the delivery of high-quality, reliable embedded systems. SCADE delivers a rigorous, safety-critical software development environment, and TPT enables automated test generation, execution, and analysis — empowering teams to accelerate iteration, strengthen early validation, and improve the quality of complex control software. Both solutions combined can reduce manual verification effort and increase automation for customers building mission-critical control systems across domains, including advanced driver assistance, electrified powertrains, flight control, engine control, and avionics systems.

"Modern automotive microcontrollers and processors integrate increasing levels of functionality, safety mechanisms, and configurability," said Tina Lamers, VP Global Safety at NXP Semiconductors. "Their contribution to system safety can only be fully understood when device-level safety analysis is seamlessly integrated into ECU and vehicle-level safety concepts. This makes functional safety a shared responsibility across silicon vendors, tier 1 suppliers, and original equipment manufacturers (OEMs)."

Drive Earlier, Smarter Design Iteration with AI-Powered Digital Engineering

Ansys 2026 R1 introduces generative AI and the portfolio's first agentic capabilities, bolstering an AI-enhanced portfolio that accelerates validation, speeds design exploration, and automates complex workflows — empowering engineering teams with smarter, faster insight at every stage of development.

Ansys GeomAI platform for geometry introduces a generative AI-driven approach to conceptual design exploration, enabling engineering teams to rapidly generate, evaluate, and refine geometry concepts with greater creativity and efficiency. By learning directly from reference designs, GeomAI helps engineers accelerate early-stage innovation while preserving engineering intent to ensure AI-generated concepts remain predictable, reliable, and ready for downstream validation.

In addition, **Mesh Agent,** a new feature in Ansys Mechanical™ software available for exploratory use, helps engineers debug and resolve meshing failures during model pre-processing. The agentic feature guides engineers with proven, validated remediation steps to increase confidence in automated pre-processing.

Now advancing through early customer evaluations, the **Discovery Validation Agent** in Ansys Discovery™ software applies agentic AI grounded in decades of engineering expertise to proactively identify setup issues using contextual intelligence and industry best practices, empowering engineers to confidently move faster, avoid costly mistakes, and achieve higher-performing designs from the start.

More AI updates in Ansys 2026 R1 include:

- The **Ansys SimAI™** platform for simulation now features two offerings: the original product, **Ansys SimAI Premium SaaS**, and **Ansys SimAI Pro**, built for desktop access for projects that require local data storage.
- **Ansys SimAI** connectors in **Ansys optiSLang®** software allow an end-to-end workflow, from training data generation, AI training, and AI use for optimization and design studies.
- **Ansys Engineering Copilot™** is now available in **Ansys medini analyze, Ansys ModelCenter®, and Ansys Rocky™** software, delivering intelligent, AI-guided assistance directly within the user interface.
- A new integration between **optiSLang and Discovery** creates a streamlined, AI-ready workflow for rapid sensitivity analysis and one-click optimization, helping engineers explore design alternatives early before validating concepts in Mechanical, Fluent, or Ansys Icepak® software.

"Ansys simulation metamodeling is transforming the way we approach power-grid design," said Venu Kondapalli, Vice President, Silicon Design Engineering at Altera. "Altera is always pathfinding on latest AI models. By combining machine-learning insights on optiSLang with fast, guided optimization, we can quickly pinpoint the right balance of metal resources while maintaining power-grid integrity and reliability. This lets us converge place-and-route faster, reduce costly design iterations, and move to closure with far greater confidence."

Connect Systems and Optimize Performance with Real World Digital Twins

R1's expanded digital twin innovations give organizations deeper real-world insight before physical prototyping. **Ansys TwinAI™** software introduces new fusion modeling methods that better align simulation data with sensor and test information, along with a temporal fusion transformer that strengthens large-scale time-series modeling and training efficiency. A new **TwinAI** reduced-order model (ROM) wizard guides teams through the creation and deployment of high-fidelity ROMs, accelerating the delivery of real-time digital twins. In addition, enhancements to **Ansys AVxcelerate Sensors™** software, including a new GPU-accelerated multispectral light-propagation engine and expanded NVIDIA Omniverse integration, create a unified, 3D digital twin pipeline, more physically accurate camera behavior, surface reflections, and edge-case realism across scenarios.

"Ansys reduced-order modeling techniques — including linear time-invariant (LTI) and linear parameter-varying (LPV) methods — are essential to building our digital twin," said Dr. Bogdan C. Ionescu, Senior Principal Key Expert in the Power Electronics Group at Innomotics. "This digital twin runs extremely fast and gives us critical insight into quantities we cannot measure directly, such as the internal temperatures of insulated gate bipolar transistors inside power cells. By delivering these results in real time, the digital twin can provide the drive controller with the information needed to operate safely and efficiently."

Additional digital twin, model-based systems engineering (MBSE), and digital engineering updates include:

- **Ansys CoSim,** a new distributed co-simulation product, connects multiple system-level tools in a coordinated workflow that lets each subsystem run in its native environment while exchanging data seamlessly. Its synchronization algorithms enable independent timesteps for fast, accurate multiphysics validation, improving interoperability and accelerating

system-level analysis across system simulation, MBSE, and autonomous development.

- **Ansys HFSS-PI** introduces a new broadband 3D power integrity simulation capability with the performance required to overcome today's IC, package, and board power-delivery challenges. Purpose-built for next-generation chip-package integration, higher-density layouts, and advanced 3D packaging, HFSS-PI enables large-scale 3D power integrity analysis with deep insight into complex coupling mechanisms and return-path behavior.
- An enhanced connection between **Ansys System Architecture Modeler (SAM)™,** a SysML v2 web platform, and **Ansys ModelCenter** automates execution of SysML v2 model expressions alongside external analysis tools — eliminating the need to manually translate hundreds of expressions into scripts and allowing teams to accelerate requirement verification and design-space exploration.
- Embedded software development teams can now import **Ansys SCADE Display®** design tool models directly into **Ansys Systems Tool Kit® (STK®)** software, enabling display behavior to relate to mission-level elements for high-fidelity, system-in-the-loop assessment.
- Updates to **Ansys HFSS-IC™** platform include a Synopsys user interface that replaces legacy workflows and delivers the speed and capacity needed to import die-scale and interposer-level designs. The modern UI also enables direct OpenAccess-based design import for single- and multi-die simulations, streamlining interoperability and boosting IC-designer productivity.
- **Ansys FreeFlow™** software expands its capabilities with a powerful meshless computational fluid dynamics approach that delivers fast, robust performance without the need for traditional meshing for complex free-surface flows, spray behavior, and dynamic liquid interactions.
- **Antenna Wizard**, a new feature in STK available for early adoption, streamlines antenna modeling with fast, automated setup. It can quickly generate high-fidelity antenna representations to guide early mission analysis and provide antenna engineers with a strong starting point for detailed Ansys HFSS™ software design.

Follow Synopsys Converge 2026 News and Updates
Synopsys Converge is taking place March 11-12, 2026, at the Santa Clara Convention Center. Follow news and updates as well as keynote details and replays via the Synopsys Converge 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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