

Washington, D.C., USA,
October 28, 2025

Siemens and NVIDIA Preview Industrial Tech Stack for AI-Era Manufacturing

- **Siemens and NVIDIA showcase advanced digital twin capability**
- **New AI-era Tech Stack for factories of the future**
- **Integrates Siemens Xcelerator and NVIDIA Omniverse**
- **Siemens full chip-to-grid value chain supports scalable, energy-efficient, and AI-optimized operations**

At the NVIDIA GTC (GPU Technology Conference) in Washington, D.C., Siemens and NVIDIA demonstrated a new technology stack currently in development for the Siemens Xcelerator portfolio. This demo showed how engineers will soon be able to rapidly design, optimize, and manage the most advanced and accurate digital twins for future factories. Utilizing the integration between Siemens Xcelerator and NVIDIA Omniverse, this technology will support a new highly realistic digital twin offering that will bring together 3D visualization, simulation, and factory data into one unified, immersive environment. This milestone marks a key step toward realizing the industrial metaverse—Siemens' vision of seamlessly combining the real and digital worlds to unlock new levels of innovation, collaboration, and sustainable value creation for industry.

Today, the manufacturing industry is undergoing a global transformation, driven by significant investment and rapid adoption of advanced technologies. In support of this shift, Siemens and NVIDIA are strengthening their partnership to accelerate the industrial AI revolution—enabling the development of smarter, more energy-efficient factories around the world.

This advanced digital twin software, still in development, will be one part of a new Siemens tech stack, purpose built for the AI-era. It will empower manufacturers not

only to build but also to continuously optimize the world's most advanced factories. This technology will be utilized to accelerate planning, engineering, and operations. – enabling large-scale simulation, AI-driven workflows, and trusted, data-driven decisions throughout every stage of design and operation.

The demo at GTC, Siemens showcased how this new tech stack can support customers from the design phase all the way through to the operations of their advanced factories. A key function of this new technology is how customers can bring together their building infrastructure and their production lines in one engineering environment. This includes using AI to simulate hundreds of potential factory layouts to find the most efficient design. Using this new tech stack, engineers will be able to do this design and simulation in hours, not days or weeks. Then after this process, customers can render photorealistic and physics-based models of their factories.

This joint effort combines Siemens' deep expertise in manufacturing and industrial technology with NVIDIA's leading technology in graphical processing to help customers design smarter, more efficient factories, products, and AI data centers.

"Industrial innovation is accelerating at an unprecedented pace. Together Siemens and NVIDIA are leading the way," said Peter Koerte, Member of the Managing Board, Chief Technology Officer and Chief Strategy Officer at Siemens. "By combining our strengths in industrial AI, digital twins, automation, and building technologies, we are enabling the industrial metaverse—and with it the next generation of factories and AI data centers – delivering the efficiency, power, scalability, and intelligence needed to meet growing global demand and shape the future of industry."

"Digital twins have become essential in the age of industrial AI, enabling the simulation and optimization of entire production lines and training robotics virtually before a single piece of hardware is installed," said Rev Lebaredian, Vice President of Omniverse and Simulation Technology at NVIDIA. "Our collaboration with Siemens brings NVIDIA Omniverse to the heart of manufacturing, providing the critical platform capabilities to accelerate the entire factory lifecycle, from concept to operation."

Today's manufacturers face unprecedented challenges in mastering complexity, accelerating production, and improving energy efficiency. This new technology will address these issues by providing a streamlined, intuitive environment for building and interacting with a factory's digital twin. For example, a semiconductor manufacturer may need to set up a new factory line to boost production while managing a highly complex manufacturing process in an existing facility. With this new tool, engineers can quickly simulate different layouts within the current factory building, helping them identify the most efficient configuration and accelerate their path to increasing production.

Siemens has the expertise to connect every link in the chip-to-grid infrastructure value chain—from manufacturing to intelligent operations to the building environment. This end-to-end capability enables Siemens and NVIDIA to bring their portfolios together to deliver truly integrated solutions that drive efficiency, scalability, and innovation for industrial customers.

Siemens technology ensures that—whether building a greenfield facility or retrofitting an existing site—power, cooling, compute, and building systems operate as a unified whole. Using simulation and AI-enabled automation, operators can optimize and scale facilities in months, not years—raising performance, boosting energy efficiency, and future-proofing capacity.

This approach is aligned with the recently announced NVIDIA Omniverse DSX Blueprint for multi generation, gigawatt scale AI Factory build outs that will set a new standard of excellence for AI infrastructure from accelerated compute and smart storage to energy-efficient cooling options. Siemens and NVIDIA are also collaborating to advance both GPU manufacturing and the optimization of AI data center infrastructure, delivering scalable, efficient solutions for the future of industrial intelligence.

From electronic design automation and factory automation controllers to white space cooling optimization and resilient building systems, Siemens equips GPU and AI data center partners to:

- Bring new AI factories online rapidly.
- Reconfigure operations for any GPU upgrades.

- Optimize power and cooling with advanced simulation.
- Anticipate and resolve threats to uptime, increase energy efficiency, and bolster supply chain resilience.

By empowering manufacturers and data center operators with advanced, energy-efficient infrastructure, Siemens and NVIDIA are accelerating the evolution of AI capabilities. This collaboration is building a smarter, stronger digital foundation, enabling innovation, fostering economic opportunities, and ensuring the benefits of AI can be harnessed to improve lives and communities across the globe.

This press release is available at <https://sie.ag/2eefck>

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Siemens AG (Berlin and Munich) is a leading technology company focused on industry, infrastructure, mobility, and healthcare. The company's purpose is to create technology to transform the everyday, for everyone. By combining the real and the digital worlds, Siemens empowers customers to accelerate their digital and sustainability transformations, making factories more efficient, cities more livable, and transportation more sustainable. A leader in industrial AI, Siemens leverages its deep domain know-how to apply AI – including generative AI – to real-world applications, making AI accessible and impactful for customers across diverse industries. Siemens also owns a majority stake in the publicly listed company Siemens Healthineers, a leading global medical technology provider pioneering breakthroughs in healthcare. For everyone. Everywhere. Sustainably.

In fiscal 2024, which ended on September 30, 2024, the Siemens Group generated revenue of €75.9 billion and net income of €9.0 billion. As of September 30, 2024, the company employed around 312,000 people worldwide on the basis of continuing operations. Further information is available on the Internet at www.siemens.com.