SIEMENS

Press

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Siemens and Audi are taking the shop floor to the next level with AI and IT-empowered automation at scale

- **Siemens and Audi are enabling virtual shop floor automation with Siemens Xcelerator to scale production processes**
- **New fail-safe virtual controllers and AI vision inspection empower Audi to improve production safety, flexibility, and efficiency**
- **Siemens' virtual controllers and Industrial AI Suite run on the Industrial Edge system**

Siemens and Audi are revolutionizing manufacturing processes with software-defined automation and artificial intelligence (AI). The long-standing partnership is accelerating innovation for the automotive industry by focusing on integrating virtual and hardware controllers, enhancing safety functions, and streamlining production processes. Audi has also implemented AI-driven automation for optical inspection based on the Siemens portfolio. The goal is to automate detection and removal of weld spatter on vehicle bodies using a customer-trained AI algorithm and high-resolution images. As a result, Audi has realized a higher car body quality and more efficient manufacturing processes.

Virtualizing the shop floor with software-defined automation

Audi is using Siemens' automation portfolio to standardize and optimize its shop floor operations, creating a more agile, flexible, and safe production environment. To speed up the transition from automated to highly adaptable production, the IT and OT levels are merged by successively virtualizing the shop floor. As software-defined factory

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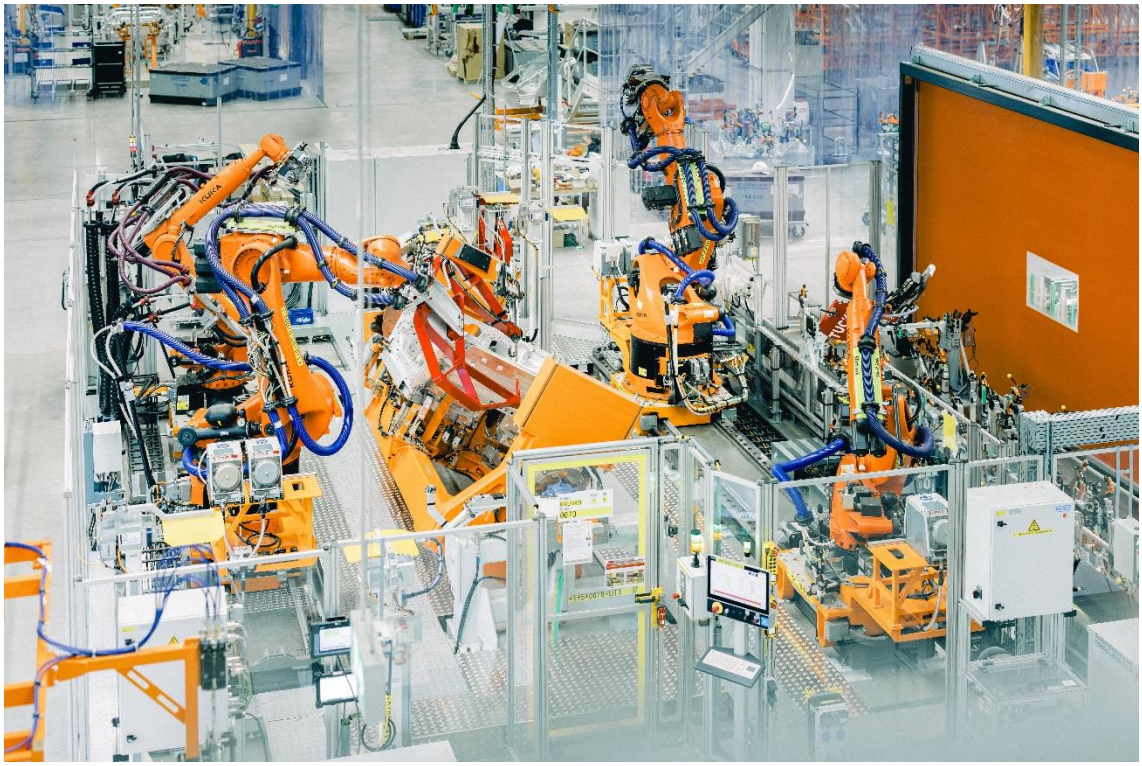
automation is only feasible with a corresponding controller solution, Audi is using the Simatic S7-1500V – Siemens' first entirely virtual controller – for their car body assembly line at Audi's Böllinger Höfe factory in Neckarsulm, Germany. The automotive manufacturer has started integrating the virtual programmable logic controllers (PLCs), which are compatible with Audi's cloud infrastructure platform Edge Cloud 4 Production. Audi is planning to roll out the virtual PLCs in their body shop at the Neckarsulm factory this year.



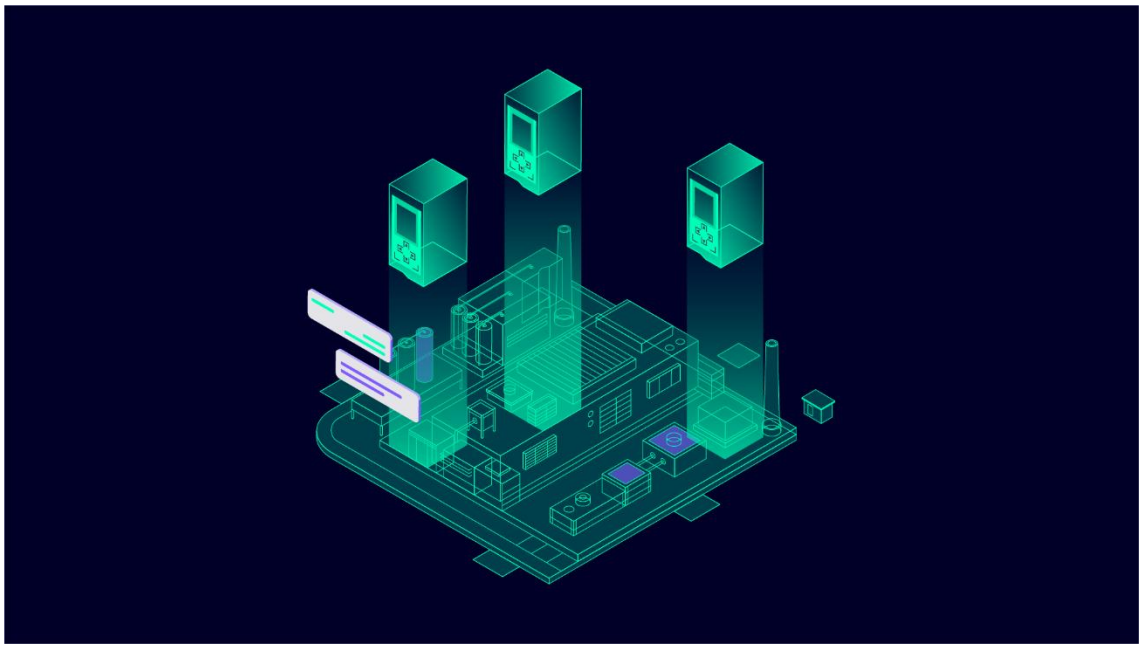
Source: AUDI AG. Audi is using Siemens' virtual controller for their car body assembly line

"A virtualized shop floor is a key enabler for a flexible production," said Gerd Walker, AUDI AG Board Member for Production and Logistics. "Siemens' software-defined automation portfolio empowers us to rapidly respond to market changes and optimize our manufacturing for more efficiency and flexibility."

"Controllers are the 'brains' of machines and factories. Now we are virtualizing these brains and bringing them to the cloud. This accelerates Audi's digital transformation and increases agility, efficiency, and safety in production – for more flexible, future-proof manufacturing. Together, we're taking automotive production to a new level and

significantly strengthening competitiveness", said Cedrik Neike, CEO of Digital Industries and Member of the Managing Board of Siemens AG.

The Simatic S7-1500V, part of the Siemens Xcelerator portfolio, is designed to integrate IT and software capabilities in the automation world. As a hardware-independent solution, this virtual controller provides the same functionalities as a Siemens hardware controller. It's fully compatible with Siemens' Totally Integrated Automation (TIA) portfolio and can be engineered via TIA Portal. Users gain access to all the functions, interfaces, and tools they're familiar with from previous hardware PLC use. The controller is available via Industrial Edge, and it can be directly integrated into the IT infrastructure. This allows Audi to centrally manage the virtual PLC and adapt it flexibly to meet specific needs. This makes PLC projects easier to scale, and open data interfaces mean they can be readily combined with other IT offerings.



Source: Siemens AG. The Simatic S7-1500V is hardware-independent and fully compatible with the TIA portfolio

Siemens has reached another milestone with the TÜV safety certification for its virtual PLC: The Simatic S7-1500V F is the first fail-safe virtual controller on the market. Implementing robust fail-safe functionalities in automation technologies is critical to safeguarding production workers and ensuring reliable machine operation. In the past, fail-safe components have required specialized hardware to provide the necessary functional safety. With the fail-safe virtual PLC, Siemens has now implemented safety

mechanisms in an industrial edge environment. These advanced safety features allow users to migrate safety-sensitive applications to software-defined automation environments.

AI vision inspection for detecting weld spatters

Siemens has supplied Audi with the infrastructure to deploy and manage an AI-driven system for real-time quality control in car body construction, which has helped Audi make their production processes AI-ready. By utilizing the Siemens Industrial AI Suite and the Simatic industrial PC BX-59A as an edge device, the solution enables Audi to conduct complex AI-based quality inspections, meeting the requirements for automated removal of weld spatters. Consequently, Audi is significantly increasing its production rates and improving occupational safety.

Panel talk at Hannover Messe 2025

At this year's Hannover Messe, Siemens and Audi will hold a joint panel on enhancing car manufacturing with IT-driven automation. Henning Löser, Head of Production Lab at AUDI AG, Sven Müller, Project Lead Edge Cloud 4 Production at AUDI AG, and Rainer Brehm, CEO of Factory Automation at Siemens AG, will explore the benefits and impacts of software-defined automation and industrial AI solutions. The session will take place at the Siemens booth on Monday, March 31, at 4:40 p.m. CEST.

This press release and press images are available at https://sie.ag/45c3u7
You can find more information on Siemens at Hannover Messe 2025 at www.siemens.com/press/hm25 and www.siemens.com/hannover-messe
For more information on the Hannover Messe panel featuring Siemens and Audi, visit hm.virtualevent.siemens.com

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Siemens Digital Industries (DI) empowers companies of all sizes within the process and discrete manufacturing industries to accelerate their digital and sustainability transformation across the entire value chain. Siemens' cutting-edge automation and software portfolio revolutionizes the design, realization and optimization of products and production. And with Siemens Xcelerator – the open digital business platform – this process is made even easier, faster, and scalable. Together with our partners and ecosystem, Siemens Digital Industries enables customers to become a sustainable Digital Enterprise. Siemens Digital Industries has a workforce of around 70,000 people worldwide.

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. 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 siemens.com www.siemens.com.