Important notes

This meeting will be recorded.

We will have a Q&A session at the end.

For your questions, please raise your virtual hand or use the Q&A function.
Hannover Messe 2024
Siemens footprint

1. SIEMENS
   Main booth
   Hall 9 booth D53

2. SIEMENS
   Hydrogen booth
   Hall 13 booth C36

3. Norway National Pavilion
   Hall 12

Other SIEMENS contributions e.g. with Partners
- YOUR FUTURE
- PROFIBUS & PROFINET International (PI)
  Joint Presentation
- ZVEI / AES Arena
- 5G and Industrial Wireless Arena
- CampusOS
- Femworks

Opening Hours:
Daily 9.00 a.m. to 6.00 p.m.
Hannover Messe 2024
Infrastructure – Where is what?

- Info desk
- Guided Tours
- VIP area/
  Entrance meeting rooms
- Staircase to press office
Motto of HM 24: “Accelerate transformation”
This is the Digital Enterprise

Combining the real and the digital worlds makes it possible to seamlessly integrate the entire value chain from design to realization, while optimizing with a continuous flow of data, both for the product and the production lifecycle.
Achieving a Sustainable Digital Enterprise Lifecycle through Digital Transformation

- Sustainable Product
- Sustainable Supply Chain
- Sustainable Production
- Sustainable Electrification and Buildings

- Decarbonization and Energy Efficiency
- Resource Efficiency and Circularity
- People Centricity and Societal Impact
Booth Overview
Innovation Hub

Key topics for the Sustainable Digital Enterprise
Innovation Hub – the key topics for the Sustainable Digital Enterprise

- FOOD & BEVERAGE
- CHEMICALS
- SEMICONDUCTORS
- AUTOMOTIVE

TECHNOLOGY DEEP-DIVE
- Smart Manufacturing
- Accelerated Prod. Dev.

entry point ROBO SHOW

Innovation Hub
### Siemens Xcelerator

**Open Digital Business Platform:** Facilitating Digital Transformation  
**Speed of Software:** Enabling Swift Value Generation  
**Three Key Elements:**  
- Digital Portfolio  
- Open Ecosystem  
- Evolving Marketplace

### Artificial Intelligence

**Industrial AI:** Tailored for demanding Industrial Environments  
**Supercharging Transformation:** Harnessing Big Data for Speed and Scale  
**Quality Assurance:** Reliable, Secure, and Trustworthy Solutions for Industrial Customers

### Industrial Metaverse

**Immersive Experience:** Engaging with Digital Twins in Interactive Environments  
**Collaborative Ecosystem:** Partnering with Diverse Technology Experts  
**Key Components:** Digital Twin, Software Defined Automation, Data & AI, Integrated within Siemens Xcelerator

### Sustainability

**Trusted Sustainability Partner:** Guiding Your Path to a Sustainable Digital Enterprise  
**Lead by Example:** Making Ambitious Commitments Towards Carbon Neutrality by 2030  
**Technology-Driven Approach:** Integrating Digital and Real-World Solutions to Drive Sustainability Across Products, Factories, and Offerings

### Cybersecurity

**Cybersecurity Assurance:** Safeguarding Data from Shop Floor to Top Floor  
**Multilayer Defense:** Implementing Defense in Depth with Zero Trust Principles  
**Reliable Protection:** Ensuring Always Up-to-Date Security Across All Levels

### IT/OT Convergence

**Convergence of IT and OT:** Facilitating Vertical Data Flow from Field Devices to Software  
**Systemic Value Generation:** Leveraging Data Across Shop-Floor-to-Top-Floor  
**Modular, Flexible, Secure, Sustainable:** Realizing the Potential of Production through OT/IT Integration

### Digital Twin

**Digital Twin:** Bridging the Physical and Digital Realms for Assets and Processes  
**Time-Travel Capabilities:** Analyzing Past, Reflecting Present, Predicting Future States  
**Enhanced Interaction:** Tight Integration of Hardware and Software for Seamless Engineering Workflows
### Siemens Xcelerator: The means to become a Sustainable Digital Enterprise

**Goal** of the digital transformation

**Digital business platform** to accelerate the digital transformation

**Siemens Xcelerator portfolio** exemplary from *Digital Industries*

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#### Sustainable Digital Enterprise

#### Siemens Xcelerator

<table>
<thead>
<tr>
<th>Marketplace</th>
<th>Portfolio</th>
<th>Ecosystem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software for product design, engineering and verification</td>
<td>Production engineering, automation and operations</td>
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</tr>
<tr>
<td>Teamcenter X</td>
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<tr>
<td>Others</td>
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</table>

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**Marketplace**

- Software for product design, engineering and verification
  - Teamcenter X
  - NX X
  - Others

**Portfolio**

- Production engineering, automation and operations
  - Industrial Operations X
  - TIA

**Ecosystem**

- Siemens Xcelerator portfolio exemplary from *Digital Industries*
Deep-dive Siemens Xcelerator

**Target**
- Showcase **tangible customer value** for Siemens Xcelerator via concrete examples and tools
- Focus on the **enabling power** of SX for digital transformation
- **Spread awareness** around newly launched marketplace features

**Business Cases**
- The benefits and value of the Siemens Xcelerator Ecosystem
- Finding solutions and becoming a seller at the Siemens Xcelerator Marketplace, highlighting the newly launched Seller Portal, set up to simplify onboarding and management of operations for sellers via self-service
- Accessing Siemens’ API catalogue at the Siemens Xcelerator Developer Portal

**Messaging**

Siemens Xcelerator is an open digital business platform that accelerates digital transformation enabling customers to unlock value faster.

Now, more than ever, speed matters and Siemens Xcelerator enables customers to move at the speed of software. It entails three elements: a curated, modular portfolio of IoT enabled hardware, software and digital services, based on the design principles: interoperable, flexible, open, as-a-Service and cybersecure, an open ecosystem of partners and an evolving marketplace.
**Industrial AI in a Nutshell:**
Supercharging digital and sustainable transformation with speed and scale

**‘Industrial-grade AI’ is our quality mission:**
Reliable, secure, and trustworthy AI

**Democratize AI for everyone**
We make Industrial AI accessible to everybody. Anywhere and anytime.

**Siemens Xcelerator** provides significant portfolio of Industrial AI within our products and solutions to become sustainable Digital Enterprises.

<table>
<thead>
<tr>
<th>Industrial AI</th>
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<tbody>
<tr>
<td>refers to the application of AI in an industrial context designed to meet the rigorous requirements and standards of the most demanding industrial environments.</td>
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</table>

<table>
<thead>
<tr>
<th>Along the value chain</th>
<th>Our vision: Siemens Industrial Copilot from design to services.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Real-time Collaboration</strong></td>
<td>Collaboration with partners, academia and customers to advance AI until it meets industry’s requirements for reliability and robustness.</td>
</tr>
<tr>
<td><strong>Lever for sustainability</strong></td>
<td>Digital Twins of product and production and accelerating simulation helps companies achieving sustainably goals.</td>
</tr>
<tr>
<td><strong>Industrial know-how</strong></td>
<td>Decade-long expertise in the discrete and process industries, domain know-how in our own factories.</td>
</tr>
</tbody>
</table>
Democratize AI-Enabled Machine Vision:
• Groundbreaking AI-enabled machine vision
• Perform quality inspections without the complexities of extensive projects or specialized integrators.
• Make Industrial AI accessible to every engineer, anytime and anywhere.

Democratize AI-infused app development with Mendix and other 3rd party AI services
• Simplify software development by integrating 3rd party AI services for generative AI with our Mendix low-code platform.

Industrial Copilot:
A generative AI-powered assistant on example of Schaeffler machine (joined use case with Microsoft) along the entire value chain
• Design (Copilot for NX); Planning (Copilot for plant simulation), Engineering (Copilot for TIA Portal); Copilot for Operations, Services (Senseye Predictive Maintenance).
• Together with Microsoft, Siemens aims to revolutionize the way companies design, plan, develop, engineer and work.

Messaging
Supercharging digital and sustainable transformation with Industrial AI
• Industrial context designed to meet the rigorous requirements and standards of the most demanding industrial environments.
• Quality promise to our industrial customers: reliable, industrial-grade, secure, and trustworthy.

Siemens Partner
SCHAEFFLER
**Industrial Metaverse in a Nutshell:** Industrial Metaverse is the next step in digital transformation: evolution not revolution

**Immersive digital world** where fast engineering decisions are made using robust data – Real and Digital

**Place for customers** to collaborate, experience and interact with the comprehensive Digital Twin

**Siemens Xcelerator** contains the 3 main building blocks of the Industrial Metaverse

<table>
<thead>
<tr>
<th><strong>Industrial Metaverse</strong></th>
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<tbody>
<tr>
<td><strong>Break Down Silos</strong></td>
<td>Connect disparate simulation data and systems, metadata, analytics, 3D, 2D, mechanical, electronics, automation</td>
</tr>
<tr>
<td><strong>Real-time Collaboration</strong></td>
<td>Real-time collaboration with colleagues, partners and customers, in context of product and production environment</td>
</tr>
<tr>
<td><strong>Single Pane of Glass</strong></td>
<td>Single data view, experience the real and digital worlds across the lifecycle of digital twin; integrated IT and OT data</td>
</tr>
<tr>
<td><strong>Industrial know-how</strong></td>
<td>Deep industrial domain knowledge across product and production lifecycles</td>
</tr>
<tr>
<td><strong>Digital Twin</strong></td>
<td></td>
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<tr>
<td><strong>Software Defined Automation</strong></td>
<td></td>
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<tr>
<td><strong>Data &amp; AI</strong></td>
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</tbody>
</table>
**Industrial Metaverse**

The Industrial Metaverse is a collaborative effort with a broad ecosystem of technology partners.

The most important building blocks are the Digital Twin, Software Defined Everything (automation/product) and Data & AI – all part of Siemens Xcelerator, our open digital business platform.

**GWE/F80 IMV**

Learn more about the Industrial Metaverse and GWE (Siemens Electronics Factory Erlangen) and how we enter the next level of manufacturing to support our customers on their way to the next industrial evolution.

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**SONY XR Head Mounted Display**

The next generation of product engineering is immersive. Move beyond today’s limitations to collaborate, create and manipulate across teams in a borderless immersive workspace – from anywhere in the world.

**NX Immersive Designer**

Designed by Sony in NX, exclusively for NX. Combine the real and digital worlds with the all-new NX Immersive Designer software, featuring precise 3D interaction, stunning visual fidelity and seamless collaboration. Our immersive engineering solutions are changing the game in the CAD space.
Industry Verticals
Siemens offers you the roadmap for your digital journey to become a sustainable Digital Enterprise in Automotive

**Customer challenges**

- Managing higher complexity in design - placing a focus on sustainability while balancing quality, speed, efficiency, safety
- Pursuing a net zero strategy - implementing modern approaches and technologies in running facilities
- Enhancing adaptability and sustainability in production – ensuring quality and cost-efficiency even with new production practices
- Increasing transparency – enabling traceability across the entire value chain
### Sustainable Digital Enterprise

<table>
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<th>Sustainable Supply Chain</th>
<th>Electrification and Buildings</th>
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**Become a sustainable Digital Enterprise now and drive sustainable transformation in Automotive**

**Sustainable Product**

Break through the barriers of innovation, while delivering quality, cost efficiency, sustainability, and performance.

**Highlights:**
- Software Defined Vehicle

**Sustainable Production**

Transform your operations with cutting-edge manufacturing solutions to deliver sustainable high-quality products on time, all the time. Reduce energy consumption with smart power distribution solutions.

**Highlights:**
- VirtualPLC
- Battery Passport
Battery Passport
Going beyond regulatory compliance, helping stakeholders adopt sustainable practices that align with Siemens’ sustainability objectives

Enablement for regulatory compliance according to battery regulation

Increase scalability and versatility by utilizing open architecture with Digital Product Pass 4.0 and Industrial Digital Twin Association (IDTA) submodules

Built on certified development with a comprehensive PLM process

Interoperability with open APIs and common data spaces e.g. Catena-X EDC(3), IDTA

Smooth integration into supply chain allowing data exchange with suppliers and customers

Challenge
• Upcoming EU battery passport regulations require flexible and scalable battery passports
• These passports need data on sustainability and circularity from entire value chains

Solution
• Utilizing open architecture with DPP(1) 4.0 and IDTA(2) submodules for scalability and versatility
• Interoperability with open APIs and common data spaces
• Built on certified development with a comprehensive PLM process
• Supply chain integration, allowing data exchange with suppliers and customers

Value
• Enablement for regulatory compliance according to battery regulation
• Siemens Xcelerator ready via open APIs
• Smooth integration into supply chains with Catena-X (EDC)

Products and services
• Battery Passport
• IT/OT Connectivity
• Energy Management
• Cloud
• Data Analytic
Industry Verticals

Food & Beverage

Chemicals

Semiconductors

Automotive

Technology Deep-Dive

Accelerated Prod. Dev.

Adv. Mach. Engineering

Smart Manufacturing

Innovation Hub

entry point ROBO SHOW

373

376
Industry Verticals

- Food & Beverages
- Chemicals
- Semiconductors
- Automotive

Technology Deep-Dive
- Accelerated Prod. Dev.
- Smart Manufacturing
Become a sustainable Digital Enterprise to drive sustainability transformation in Chemicals

**Customer challenges**

- Gaining transparency across the entire value chain to determine, monitor & optimize carbon footprint
- Reducing energy consumption and emissions by optimizing energy-intensive processes and leveraging CO2 capture
- De-fossilizing energy supply by incorporating green energy
- Striving for circularity by redesigning processes to incorporate recycled feedstock
## Become a sustainable Digital Enterprise now and drive sustainable transformation in Chemicals

### Sustainable Digital Enterprise

<table>
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<tr>
<td>Intelligent Materials Design</td>
<td>Electrification and Buildings</td>
</tr>
<tr>
<td>Digital Plant and Integrated Process Engineering</td>
<td>Sustainable Supply Chain</td>
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</tbody>
</table>

### Highlights:

- **Sustainable Product**
  - Develop formulations efficiently based on each material's characteristic. Multiple formulations can be created, compared and assessed against regulations to find candidates for commercialization.

- **Sustainable Production**
  - Reduce risk of trial-and-error during engineering, commissioning, and operation with virtual process design of a plant and virtual validation of optimal operation using simulation on several levels.

- **Sustainable Supply Chain**
  - Create plant and process transparency by connecting the Digital Twin with operational information from connected assets to optimize process and performance.

- **Operational Excellence**
  - Fully connect your assets, projects, and operational information to make better decisions that will transform your chemicals business.

**Highlights:**

- Simcenter Culgi
- Digital Process Twin
- Virtual Sensing
- Integrated Maintenance
Challenge
End customers demand more sustainable products. Companies are facing new safety and sustainability regulations. Not only is there a need to replace “forever chemicals” but also to reduce energy consumption. However, finding the right ingredients, formulas, and process conditions via traditional experiments and performance tests is time consuming, costly and difficult.

Solution
Culgi uses Computational Chemistry combined with AI and material informatics to virtually screen and develop new and sustainable chemistries and materials. The method can predict various relevant material properties, conditions for production of new materials.

Value
• Develop new materials and formulations more efficiently
• Accelerate design and testing of new materials or ingredients
• Immense speed up of innovation cycle, reduced time-to-market
• Reach sustainability goals faster and more easily

Products and services
Simcenter Culgi

Simcenter Culgi
Simulate from atom to plant scale: with its multiscale chemistry simulation, Simcenter Culgi is a leader in accurately modeling formulation properties.

Engineer novel and sustainable materials in an early stage of product development with multiscale computational chemistry simulations

Simulate the most complex systems faster and build better products with lower carbon impact

Predict chemical and physical properties for real-life applications and accelerate materials development
Industrial Operations X

From automated to adaptive production
Innovations and Highlights at HM 2024
Siemens Xcelerator @ Digital Industries
Portfolio Update: **Industrial Operations X**

**Goal** of the digital transformation

**Digital business platform**
to accelerate the digital transformation

**Siemens Xcelerator portfolio**
contains these building blocks from **Digital Industries**

---

**Siemens Xcelerator**

**Marketplace**
- Software for product design, engineering and verification
  - Teamcenter X
  - NX X
  - Others

**Portfolio**
- Production engineering, automation and operations
  - Industrial Operations X

**Ecosystem**
- TIA
Extending our leading automation ecosystem – making the Siemens Xcelerator promise real for the automation world

Industrial Operations X
IT-empowered automation

- Open Ecosystem
- Flexible Modular and scalable capabilities
- Totally integrated automation
- Interoperable Seamless holistic production value chains
- Shopfloor ecosystem
- Efficient automation systems
- Easy OT focus
- Easy OT with integrated IT

Totally Integrated Automation
We will expand our leading TIA ecosystem with Industrial Operations X

Totally Integrated Automation

- Management
  - PLM
  - ERP
  - SCM

- Operations
  - HMI

- Control
  - Sense & Act

Industrial Operations X

- Software-defined automation
  - from hardware-based automation devices to software-driven automation functionalities.

- Data-driven production
  - from hard-coded production processes to data-driven production and operations.

- Modular operations
  - from monolithic and inflexible operation systems to flexible modular industrial operations.

- Industrial ecosystem
  - from one-vendor automation ecosystems to an open ecosystem with frictionless interoperability between multiple vendors for all levels of industrial operations.
Industrial Operations X: Portfolio & Industrial Ecosystem as part of Siemens Xcelerator

1. Software-defined automation
   - Industrial Edge
   - SIMATIC vPLC
   - SIMATIC AX
   - ...

2. Data-driven production
   - Industrial Information Hub
   - Digital Drive Train
   - Insights Hub
   - Trusted Traceability
   - Predictive Maintenance
   - ...

3. Modular operations
   - gPROMS
   - SIMATIC PCS neo
   - Opcenter X
   - Machinum
   - Virtual Training Solutions
   - ...

4. Industrial ecosystem
   - 3rd party offerings
   - Developer Communities: Industrial Edge, Mendix, Insights Hub, etc.
What`s in for our customers?

Benefits of Industrial Operations X
Industrial Operations X use case touch points at the booth
Innovation hub, vertical showcases, technology deep-dives
**Challenge**
- **TIA:** Cost pressure & Efficiency, Quality and faster Innovation cycles
- **Industrial Operations X:** Lack of talent, Sustainability, Supply Chain

**Solution**
In today’s rapidly evolving industrial landscape, the shift from automated to adaptive production is essential for businesses to remain competitive. Adaptive production systems, collaborating in industrial ecosystems, based on software-defined automation, as well as by data-driven production and enhanced by modular operations, offer flexibility to meet the changing demands and market conditions. This works in a distributed system over distributed over the whole booth.

**Customer value**
- **TIA:** Reuse and extend your existing automation portfolio to make it even more efficient.
- **Industrial Operations X:** Automate mundane tasks that have flexible needs and could only be carried out by humans before to

**Products & Services**
- **TIA Portal V19, SINAMICS Drive, SIMATIC S7-1500, SIMATIC AX, SIMATIC S7-1500V, Field Data Enablement Gateway, Performance Insights, Energy Meter, Energy Management, SIMATIC Robot Pick AI, SIMATIC Motion Planner, WinCC Unified on Industrial Edge and online engineering, Industrial Edge Management, Industrial Information Hub, Mendix, AWS IoT Sitewise Edge, Industrial CoPilot for Operations**
What you can expect at Hannover Messe 2024?
HM2024 Highlight – Summary

130+ Use-Cases for Siemens Xcelerator (48 last year)

100+ Use-Cases for Industrial Operations X (44 last year)

40+ Product Innovations & new Highlights

150+ Stage Presentations and Panels
Hannover Faire: Stage presentation highlights and guided tours

Numerous stage presentations

Hannover stage presentations

VIRTUAL ON-SITE

All information can be found on:

www.siemens.com/hm

QR code agenda

Example Sessions

Monday: Industrial Metaverse
• 12:00 – 12:30 Roland Busch and Rev Lebaredian (NVIDIA)

Monday: AI for everyone and Industrial Co-Pilot
• 13:00 – 13:35 Peter Koert, Uli Homann (Microsoft), Rainer Brehm

Monday: With Semiconductors to Net Zero
• 15:30 – 15:50 Katharina Westrich, Jackie Sturm (Intel), Mousimu Bhat (SEMI)

Tuesday: Siemens Highlight at HM24
• 11:50 – 12:15 Cedrik Neike and Tony Hemmelgarn

Guided tours for analysts

Innovation Hub tours for analysts only

• Tuesday 4:45 – 5:30 pm CEST
• Wednesday 9:15 – 10:00 am CEST
• Wednesday 3:15 – 4:00 pm CEST

Please arrive on time to get headsets at the Guided Tours Info Desk

Please contact to book, confirm or change time slots:
Heike.k.hofmann@siemens.com

Press Conference and Highlight Tour

• Monday 5:30 – 6:30 pm CEST (followed by networking opportunity)

For bookings please contact:
christoph.kroesmann@siemens.com