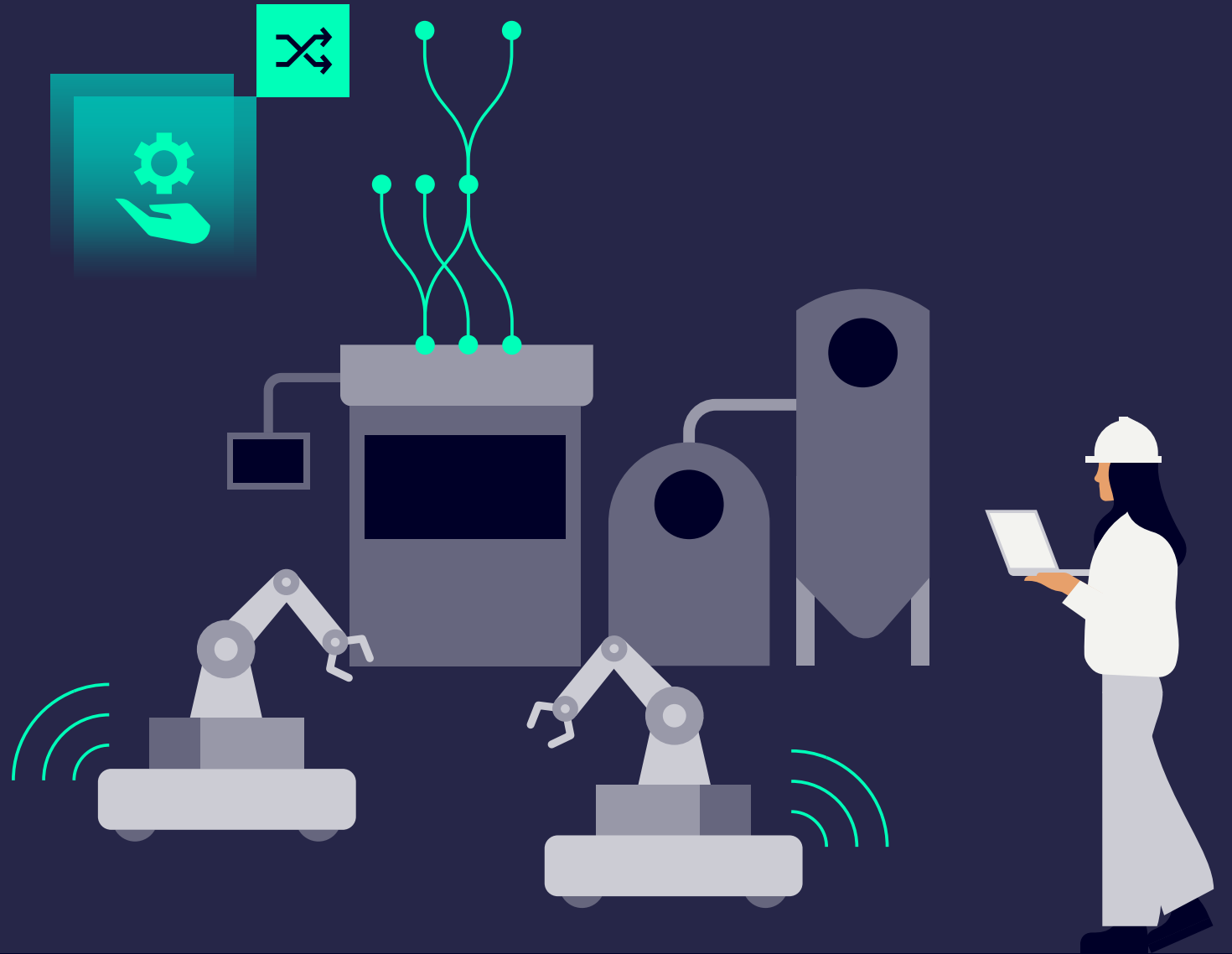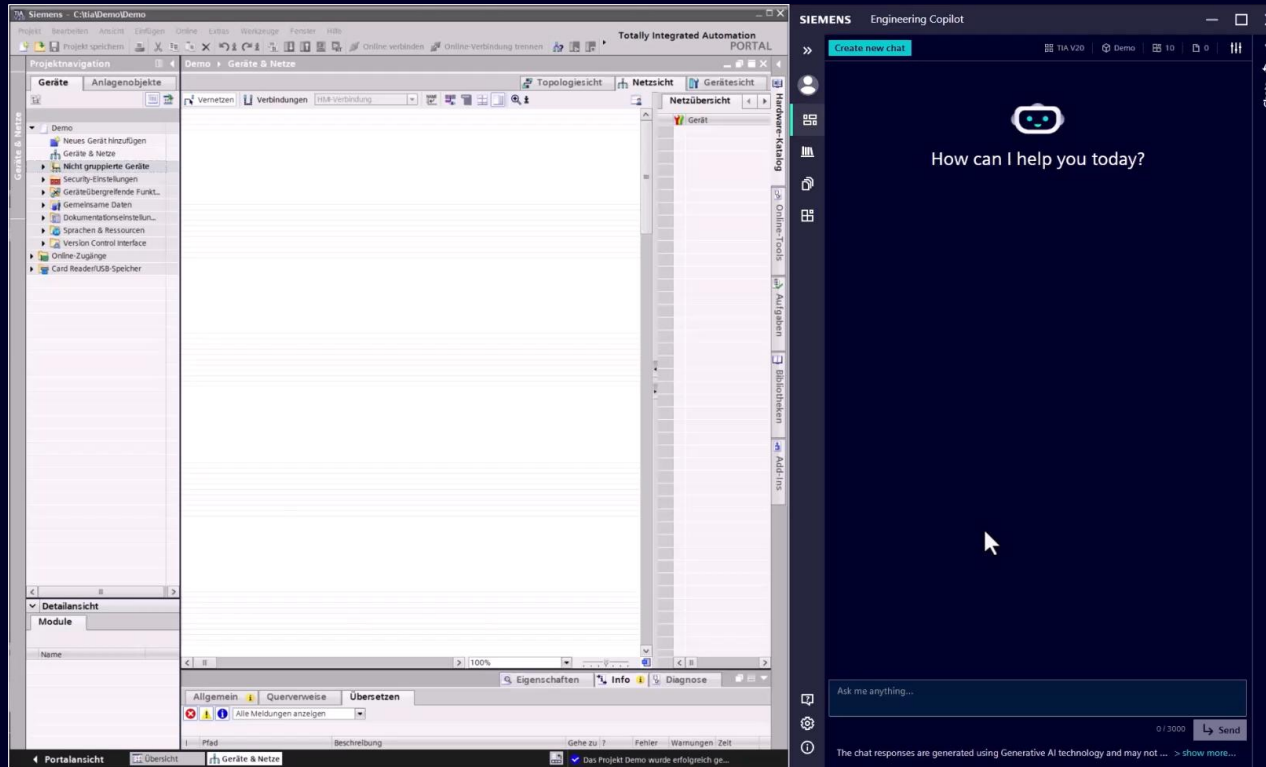# Industrial AI:
Transform the entire value chain

Deep dive: Realize

SIEMENS

Generative AI today

Generative AI-powered automation engineering with the Engineering Copilot TIA

Challenge
- Shortage of skilled labor
- Shorter innovation cycles
- Rising complexity and competitive pressure

Solution
The Engineering Copilot TIA - Your genAI-powered assistant for Engineering within the TIA Portal. It generates HMI visualizations, PLC code, test cases, and JavaScript code, and provides quick answers to your engineering questions.
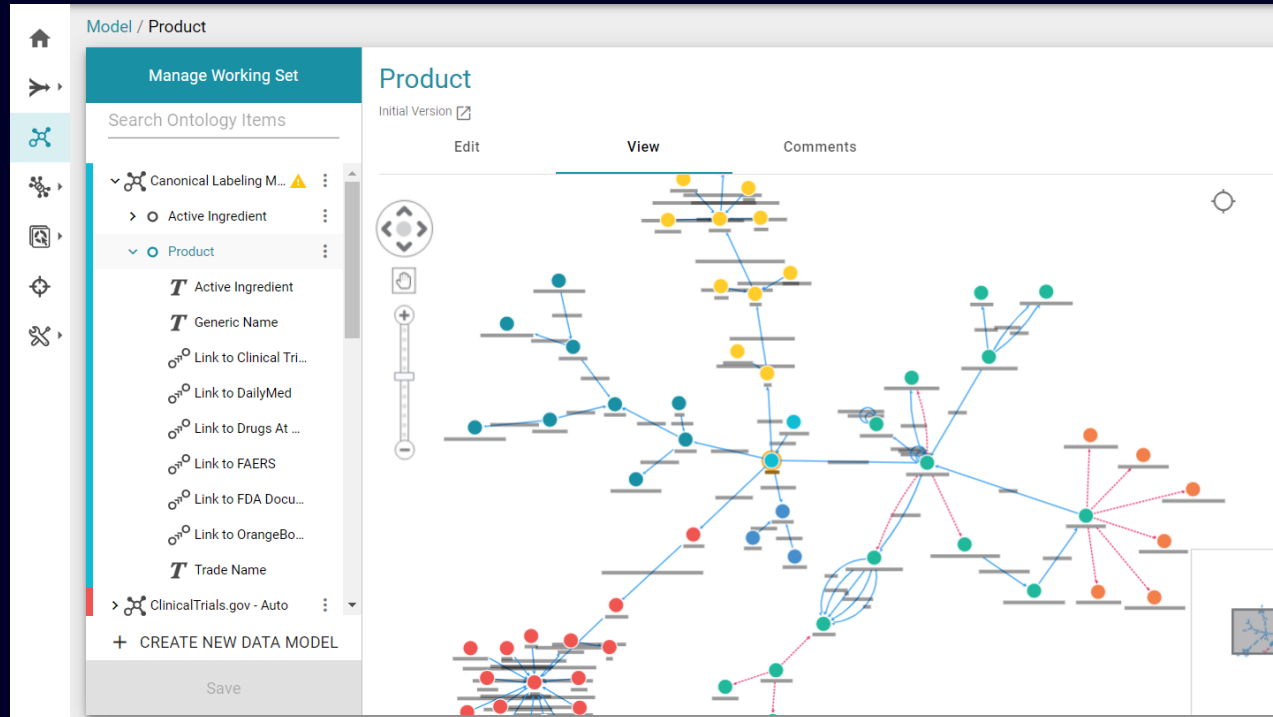
Value
- Intuitive Interaction & Guidance in Natural Language
- Intelligent Error Analysis & Troubleshooting
- Accelerated Project Start & Guidance

Products and services
- TIA Portal V19 and V20
- Engineering Copilot TIA

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Industrial AI today

Unified data foundation for AI in manufacturing

Challenge
Manufacturers increasingly want to deploy cross-domain AI agents and copilots that can move seamlessly across plants, supply chains, and operations. But without a unified data layer, these agents remain stuck in silos, limited to domain-specific tasks.

Solution
A knowledge graph on your cloud data platform integrates machine, sensor, supply chain, and business data into one connected view. This foundation delivers deeper insights, greater agility, and readiness for the latest AI and automation technologies.
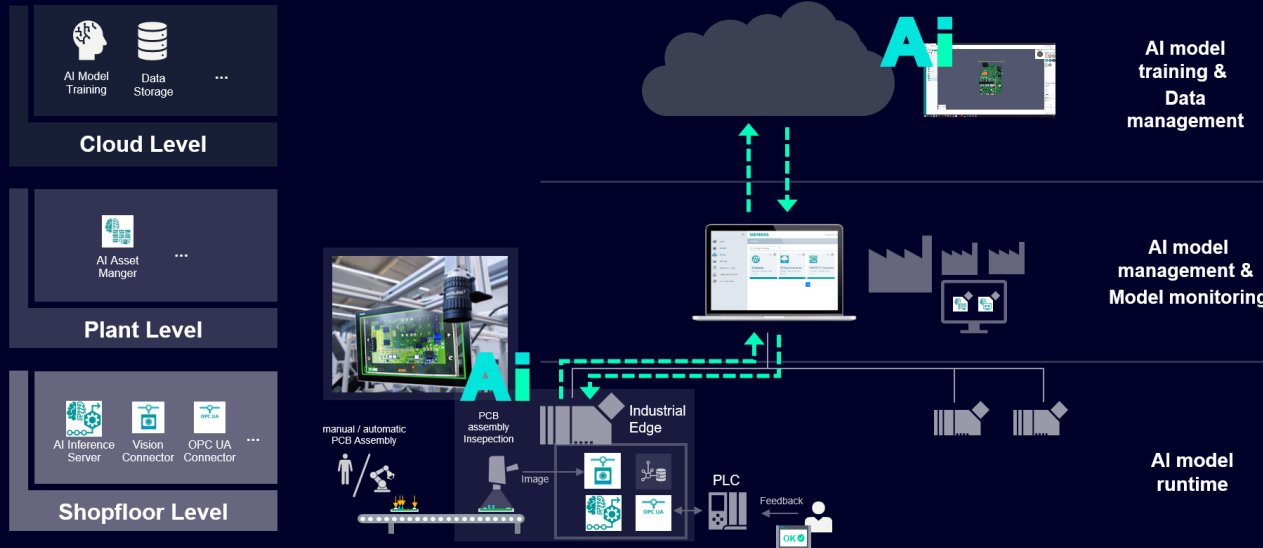
Value
- End-to-end visibility
- Operational agility
- Scalable, future proof foundation for AI

Products and services
- RapidMiner Graph Studio

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Physical AI today

Cloud Level
AI Model Training · Data Storage · ...

Plant Level
AI Asset Manger · ...

Shopfloor Level
AI Inference Server · Vision Connector · OPC UA Connector · ...

AI model training & Data management

AI model management & Model monitoring

AI model runtime

manual / automatic PCB Assembly
PCB assembly Inspection
Industrial Edge
Image
PLC
Feedback
OK

Automated vision-based PCB assembly inspection

Challenge
In industries with high production complexity due to a big number of product variants, faulty PCB assemblies are of higher risk, leading to high manual efforts, rework and scrapping.

Solution
AI-based vision inspection detects missing or misplaced components, preventing non-conformance costs before they occur. Leveraging Siemens Industrial Edge and Xcelerator Partner Basler (Camera) for real-time detection, combined with the Industrial AI Suite for Deployment & Operations, enables efficient rollout, monitoring, and lifecycle management of AI models on the shopfloor. Optional cloud integration supports large-scale training or synthetic data generation, ensuring scalable Industrial-grade AI operations.
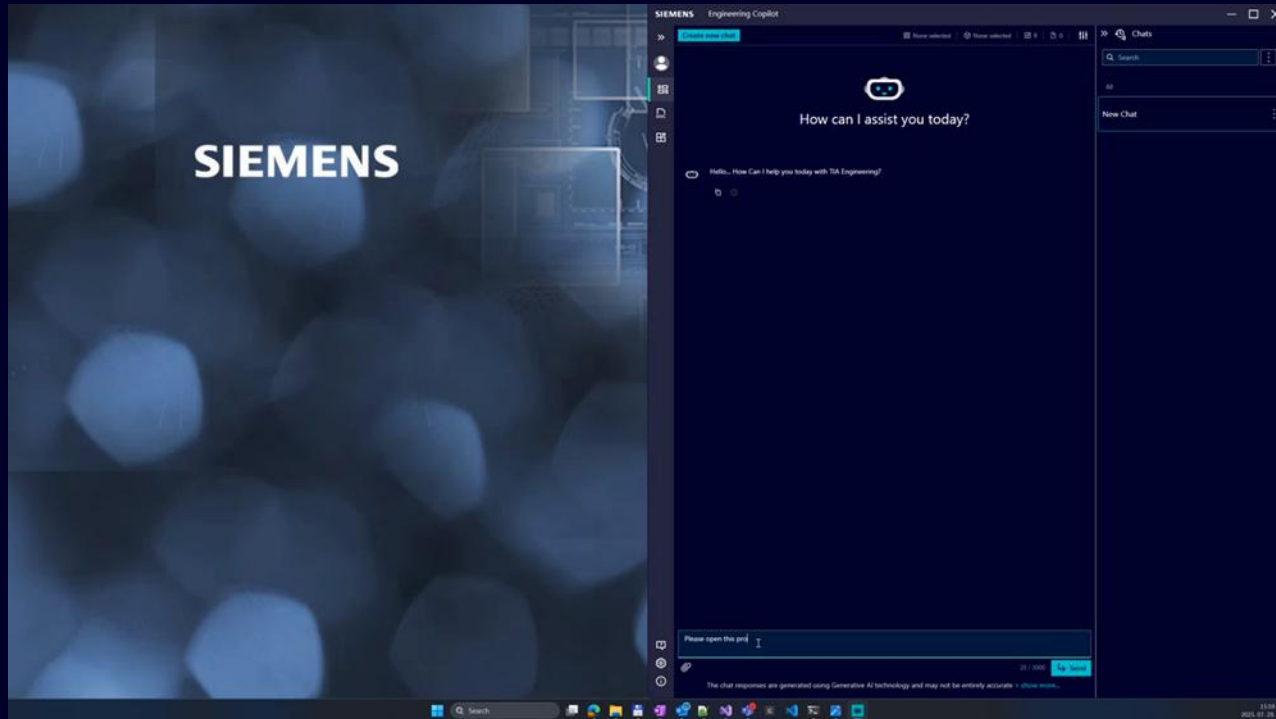
Value
- Resource and cost savings of up to 60%
- Improved quality and productivity in production
- First-pass yield rate of 90% in more than 100 product variants

Products and services
- Industrial Edge
- Siemens AI Inference Server
- AWS
- Siemens AI Asset Manager
- Siemens Vision Connector

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Generative AI today

Engineering Copilot TIA for SINUMERIK

Challenge
Engineering machine tools with SINUMERIK CNC controls can be complex and time-consuming. Engineers face challenges in programming and configuring CNC machines efficiently while ensuring accuracy and reliability.

Solution
Engineering Copilot TIA – an AI assistant integrated into Siemens' TIA Portal. It supports engineers by providing intelligent suggestions and automation for programming and configuration tasks making it faster, easier, and more accurate.

Value
- Increased efficiency: Accelerates engineering tasks and reduces development time.
- Improved quality: Helps prevent errors and ensures more reliable machine configurations.
- Simplified complexity: Makes working with complex SINUMERIK functionalities

Products and services
- SINUMERIK CNC controls
- Engineering Copilot TIA
- TIA Portal

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