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Innovation Forum

AHK

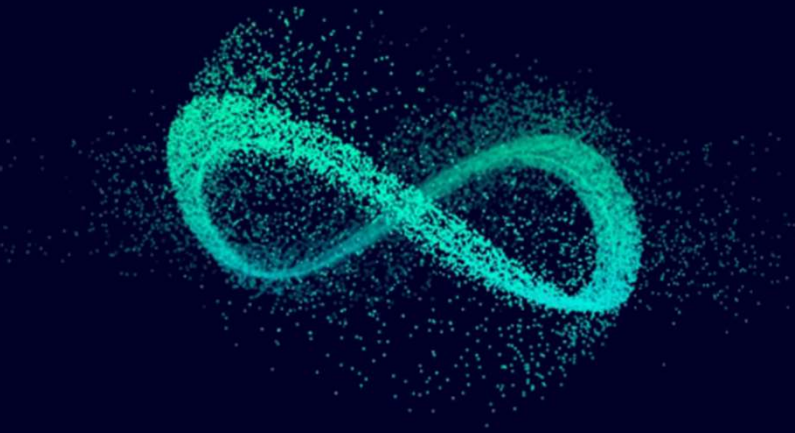
PEOPLE • TECHNOLOGY • SUSTAINABILITY

Global Tech Company

Vertical Markets

Automotive Manufacturing
Airports
Electronics Industry
Water and wastewater Industry
Data Centers
Machinery and Plant Production
Food and Beverage
Chemical Industry
Municipalities and DSOs
Cranes
Intralogistics
Aerospace
Battery Manufacturing

Real world



Digital world

Glass Production
Pharmaceutical Industry
Campus
Tire Industry
Mining Industry
Cement
Transportation and Logistics
Panel Building
Wind Energy
Pulp and Paper
Life Science
Healthcare
Oil and Gas Industry

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Ideas alone have little worth.
The value of an invention lies
in its practical implementation …

Werner von Siemens, 1865
Founder

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Innovation is the basis for our success

€6.2 bn
R&D expenditures[1]

50,000
R&D employees[2]

5,400
inventions[1]

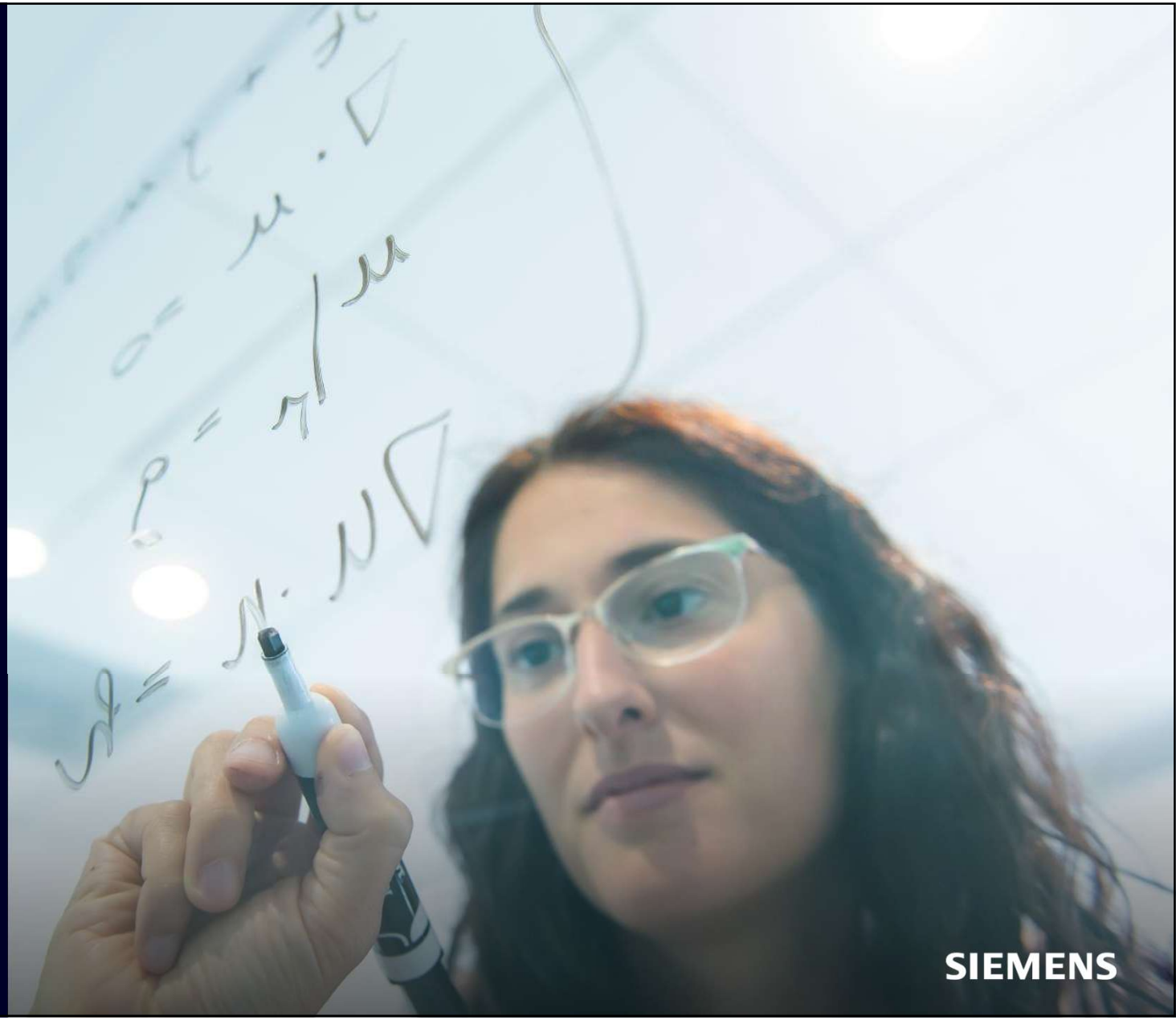
2,900
patent applications[1]

AI
#1 Europe
Patent Applications

Neural
#1 Worldwide
Patent Applications

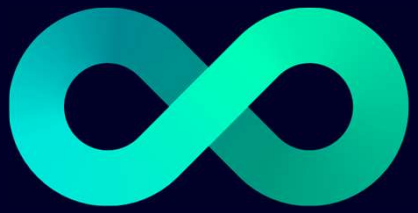
Cooperation
with universities, research institutes, and start-ups

1 In fiscal 2023 | **2** On average during fiscal year 2023



THE NEXT ERA OF GENERATIVE AI

Integrating the real and digital worlds to accelerate the adoption of industrial AI solutions

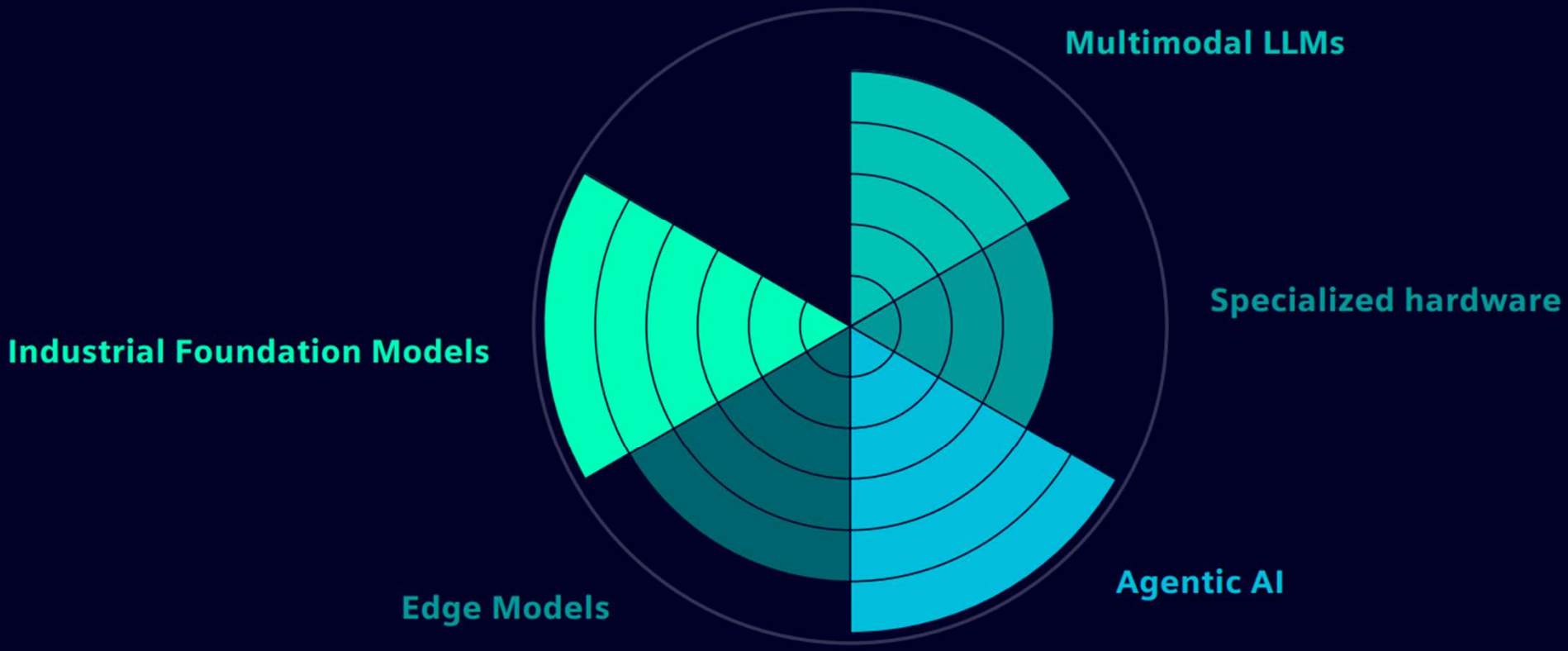


Combining operational and information technology (real and digital worlds) to empower customers and partners to scale up their operations and drive innovation

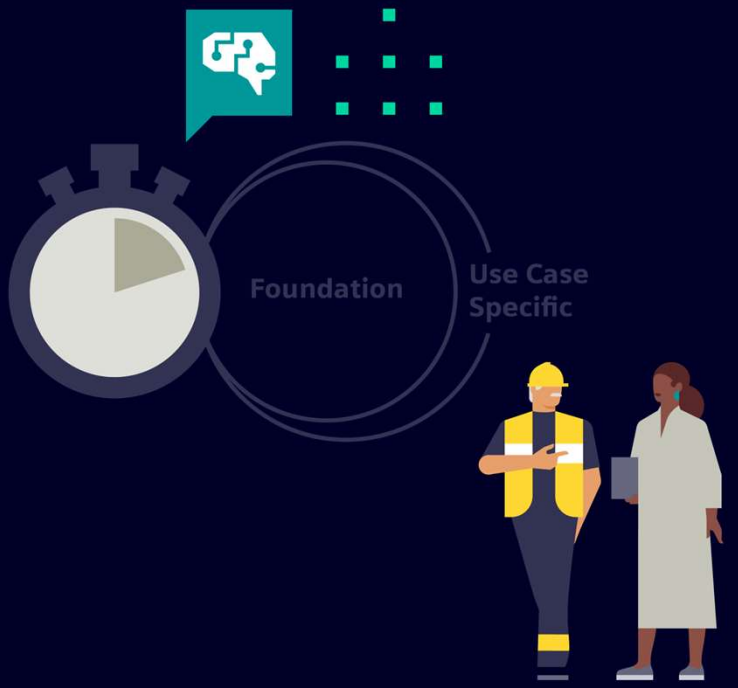
A digital and IoT enabled portfolio with offerings from **Siemens and certified partners form an open ecosystem** accessible through the Xcelerator marketplace

Our **AI framework provides hardware, software, and services** enabling to create, operate and scale AI solutions

Key Industrial AI Trends



Industrial Foundation Models



Pre-trained:

Vertical-specific

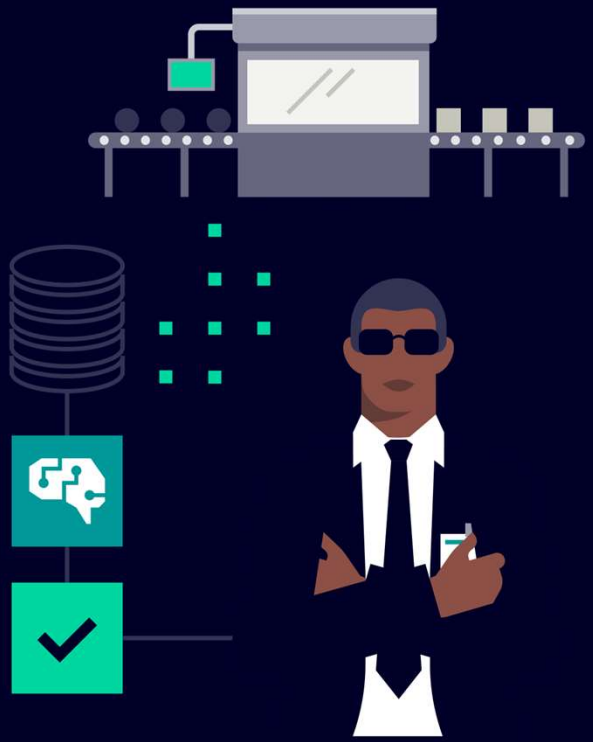
Multi-modal data:

Text, Audio, Video, 3D models, 2D drawings, time-series data

Outcomes:

Faster, more accurate AI deployment
Enhanced decision-making w/ industry-specific knowledge
Cross-sector knowledge transfer

Agentic AI



AI Agency:

Systems with autonomy and decision-making capabilities

Agent marketplaces:

Networked enabled agent orchestrated by "master agents”

Outcomes:

Autonomous decision making in applications such as:

- Predictive maintenance
- Quality control
- Production process optimization
- Engineering and design automation

Multimodal LLMs

Multi-faceted data:

Combine language understanding with, auditory, visual and other sensorial perception

Outcomes:

Enhanced object recognition
Improved scene understanding
Following complex instructions
Processing diverse industrial data types simultaneously

Edge Models

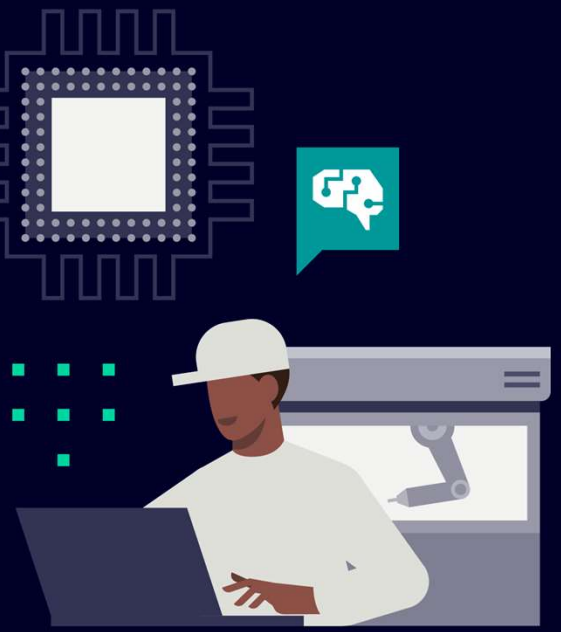
Decentralized local computing:

AI deployment at industrial network edges

Outcomes:

Real-time data analysis and decision-making
Reduced latency and bandwidth limitations
Enhanced cybersecurity by keeping data local
Cost savings from reduced cloud dependency

Specialized Hardware



Edge-acceleration:

High-performance computing at the edge (GPUs, LPUs)

Outcomes:

Real-time processing of advanced AI models
Parallel processing and accelerated performance
Reduced cloud infrastructure dependency
Support for time-sensitive applications


Innovative ideas
come to life faster –
even in harsh
environments
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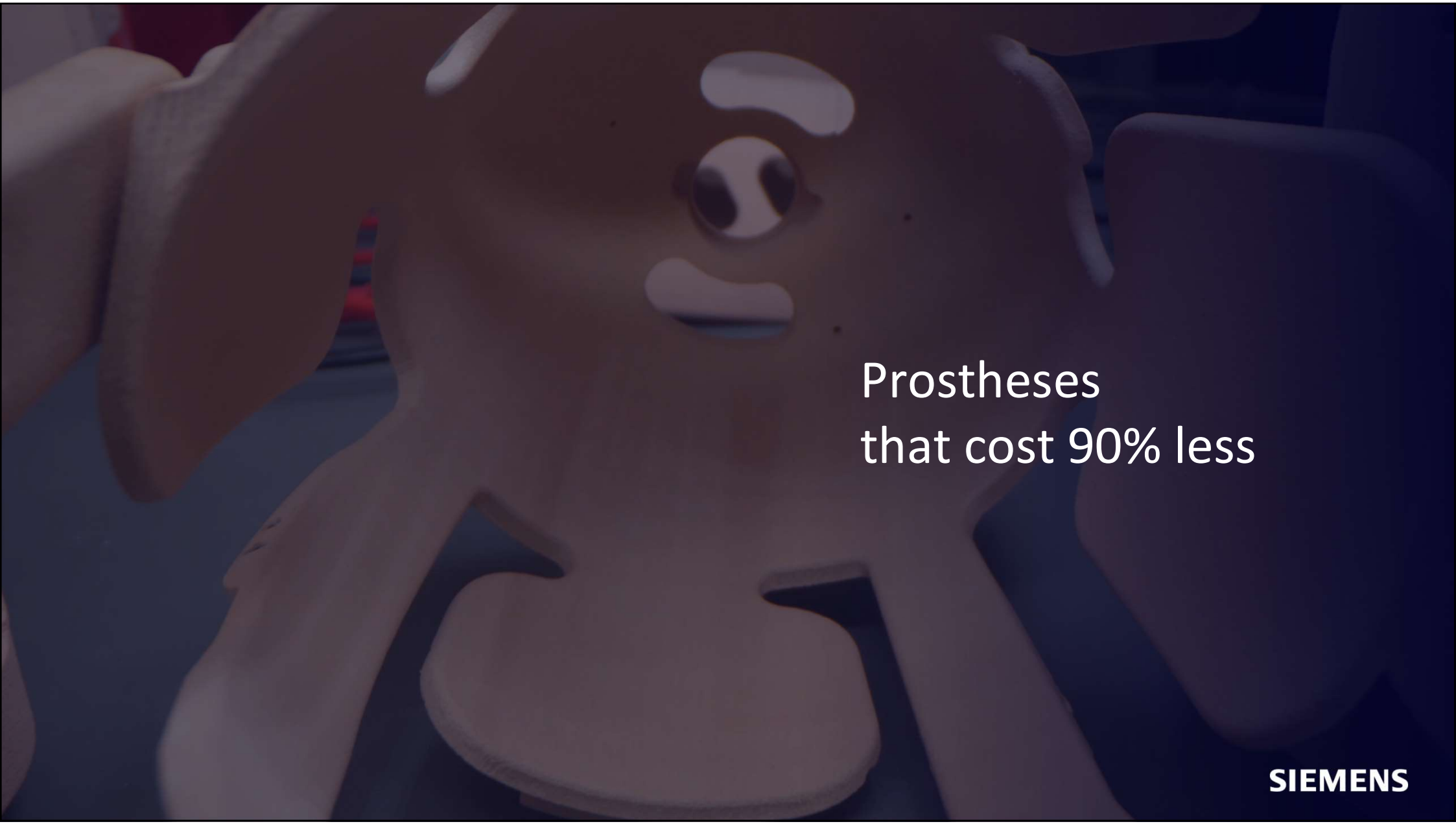
Prostheses
that cost 90% less
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Digital twins and simulation in industry

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Entire city
districts become
carbon neutral
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Preserving
biodiversity
with a Digital Twin
of a coral reef
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Evolution,
not a revolution

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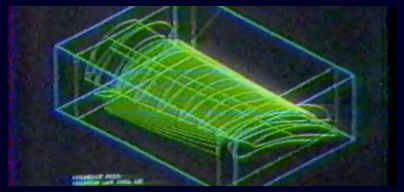
The evolution path towards the Industrial Metaverse

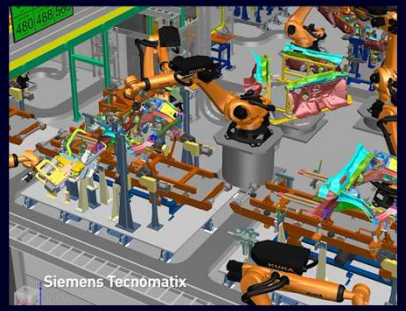
Model pioneers

CAx sunrise



PLM pervasion

Digital Twin era



Industrial Metaverse

~1985 ~2000 ~2015 ~2022

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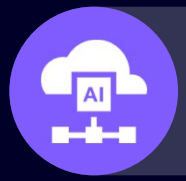

Artificial Intelligence and Machine Learning

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Hi Simcenter

Hi Simcenter, create an example of a chassis7dof model using the most popular components from past projects. Step by step. Connect the components that are currently unconnected. Follow the Amesim workflow to complete the task and ensure that the simulation can be initiated.

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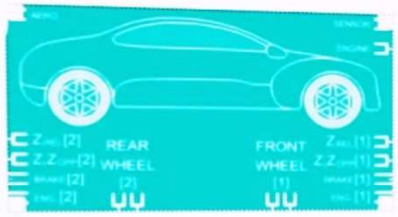
Hi Simcenter, create an example of a chassis7dof model using the most popular components from past projects. Step by step. Connect the components that are currently unconnected. Follow the Amesim workflow to complete the task and ensure that the simulation can be initiated.

Using Simcenter... LOCALHOST




60
Line 1
61
Line 2
70
Line 3
Last Shift
488
Line 2
Last Shift
560
Line 3
KUKA
SIEMENS

Industrial AI

Accelerate the implementation and scaling of safe AI in production.

Assess current **AI readiness** across processes

Prioritize **industrial-grade AI** with robust **cybersecurity** and **compliance** standards

Balance data **sovereignty,** with a clear data **governance** frameworks with **strategic sharing** for mutual benefit

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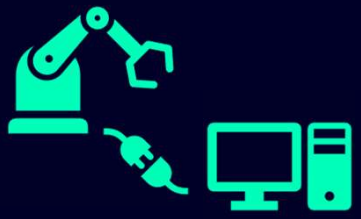
Key take-aways

The **open Siemens ecosystem** covering hardware, software and services **enables flexibility and seamless integration**



A **standardized infrastructure** is key for efficient integration, operation and scaling of AI solutions

Moving beyond experimentation and operating AI efficiently at scale **improves productivity and quality while reducing cost**

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Evolution, not a revolution

Hélio Jesus
Chief Technology and Innovation Officer
Siemens S.A.

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