Mit physischer KI die Fabrik von morgen gestalten

Horst J. Kayser
CEO Factory Automation, Siemens AG

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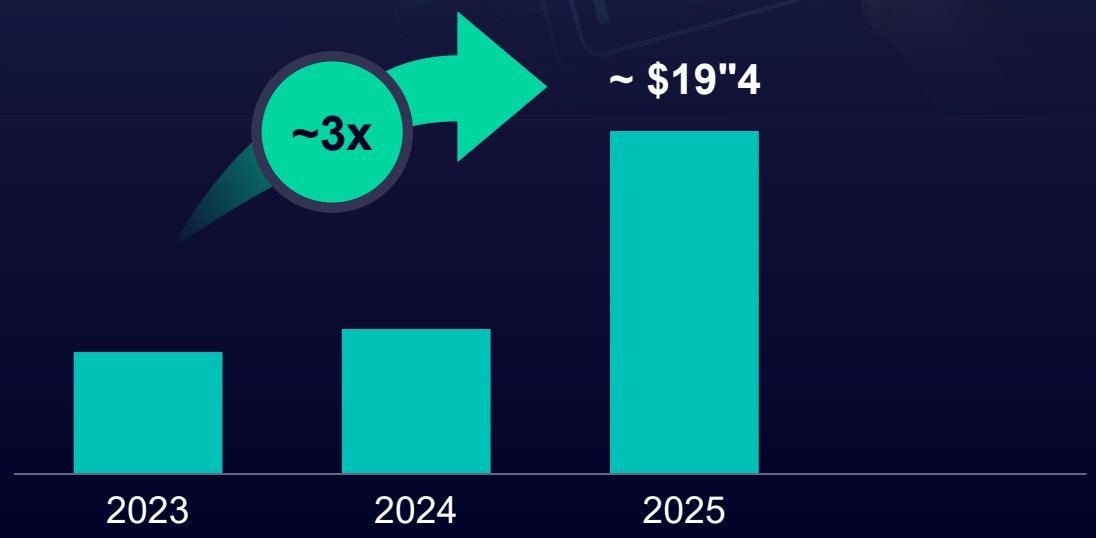
Physical AI combines robotics with the power of artificial intelligence

Investments in robotics are surging to record highs

Global capital inflow into robotics nearly 3x from 2023 to 2025



Source: Crunchbase, Pitchbook, UBS, Reuter, Morgen Stanley

Country Ranking On Skills and Digital Infrastructure Readiness

SCORING FROM 1 (VERY LOW) TO 10 (VERY HIGH)

Ranking		Total	Skills	Digital infrastructure
1	US	8.4	9.0	7.9
2	Germany	8.2	9.0	7.4
3	Japan	7.6	8.0	7.1
4	South Korea	7.6	8.0	7.1
5	UK	7.5	9.0	6.0
6	Canada	7.2	8.0	6.4
7	France	7.1	7.0	7.1
8	China	6.6	7.0	6.1
9	Italy	6.3	6.0	6.6
10	Poland	5.9	7.0	4.9
11	Spain	5.8	5.0	6.6
12	Hungary	5.4	6.0	4.9
13	Brazil	5.0	6.0	4.0
14	UAE	5.0	6.0	4.0
15	India	5.0	7.0	3.0
16	Mexico	4.6	6.0	3.3
17	Türkiye	4.1	5.0	3.1
18	KSA	4.0	4.0	4.0
19	Morocco	3.1	4.0	2.3

Sources: UNESCO; OECD; national educational statistics; Portulans Institute; IFR; BCG Institute analysis.
Note: Composite index scoring from 1 to 10 based on the unweighted average scoring of two criteria: skills (based on mean years of schooling and yearly number of STEM graduates) and digital infrastructure (based on network readiness index measuring countries' digital maturity across technology, people and governance, and industrial robotic density deployment).

Source: BCG

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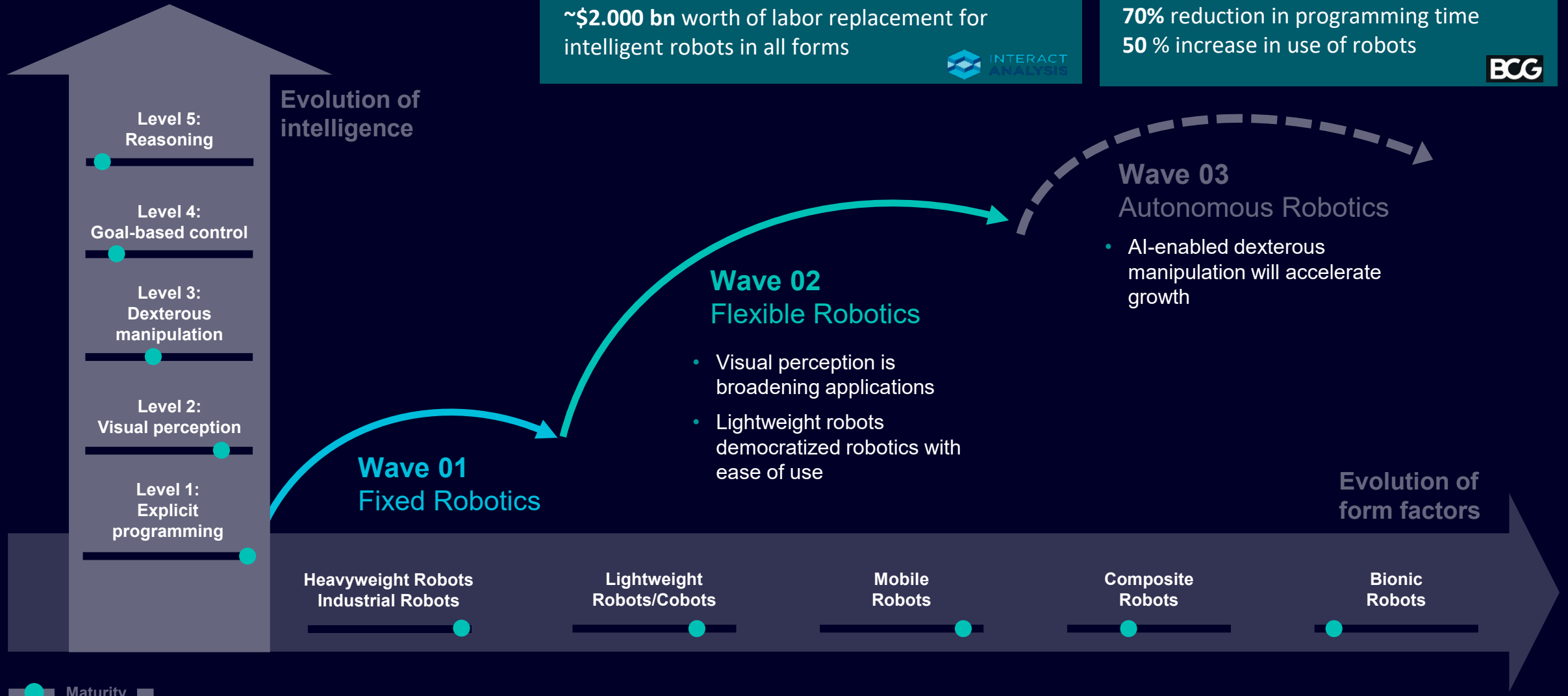
Robotics market expanding along two dimensions: intelligence & form factors

~$2.000 bn worth of labor replacement for intelligent robots in all forms

INTERACT ANALYSIS

70% reduction in programming time
50 % increase in use of robots

BCG



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Industry requires flexibility and adaptability

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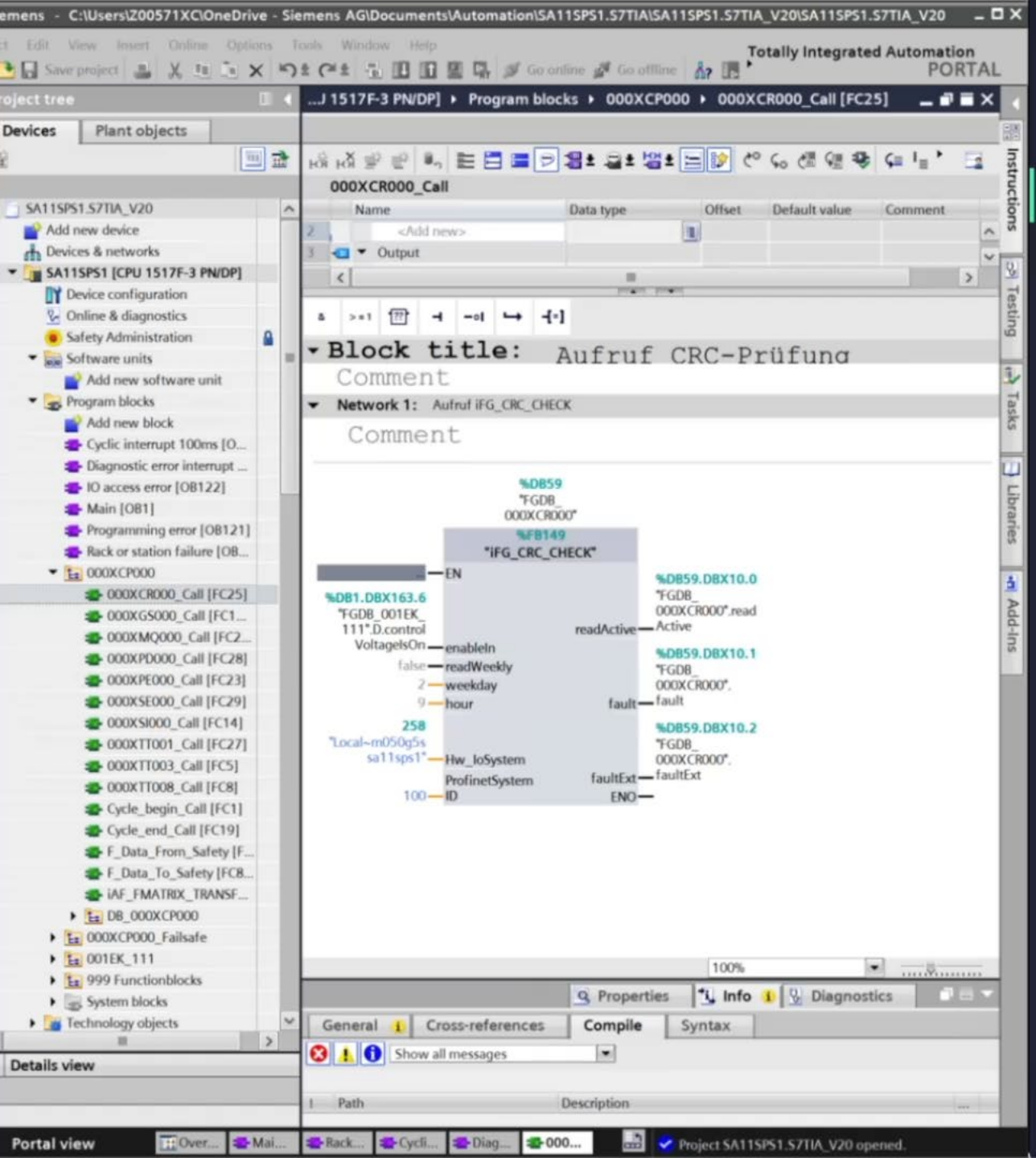
Eigen Engineering Agent



SIEMENS Eigen Engineering Agent

- Siemens PN/PN Couplers (2 units)
- RFID readers (Siemens RF68xR, 12 units)
- Ident systems (MV4xx, 2 units)
- Markator marking devices (2 units)

PLC Program Structure

Category	Count	Description
Failsafe Blocks	~50	Safety functions (ESTOP, Robot safety, Gate, Lenze)
Standard Functions	~100	Basic software, General functions, System blocks
Subsystems	~150	Robots, TCP communication, MQTT, RFID, Valves
Station Calls	~400	Individual station control blocks
Data Blocks	~200	Instance DBs, System DBs, User data

Key Programming Languages: FBD, F_FBD, SCL, GRAPH, STL

Network Features

- PROFINET IO (real-time communication)
- PROFIsafe (safety communication)
- OPC UA
- MQTT/TCP/IP communication
- IoT Publisher functionality

This appears to be a large-scale **automated manufacturing/assembly system** with multiple robots, conveyor systems, safety functions, and comprehensive monitoring/control infrastructure.

Would you like me to dive deeper into any specific aspect (hardware details, specific PLC blocks, network configuration, etc.)?

Let's start by generating an SCL function block for a body-in-white station controller. I need it to handle a full welding cycle — clamping the workpiece, verifying clamp position, running the weld sequence, unclamping, and signaling that the station is ready for transfer.

0% till compaction

This content is AI-generated.

“You’re not going to lose your job to an AI, but you’re going to lose your job to somebody who uses AI.”

Jensen Huang, CEO NVIDIA

Source: https://www.cnbc.com/2025/05/28/nvidia-ceo-jensen-huang-youll-lose-your-job-to-somebody-who-uses-ai.html

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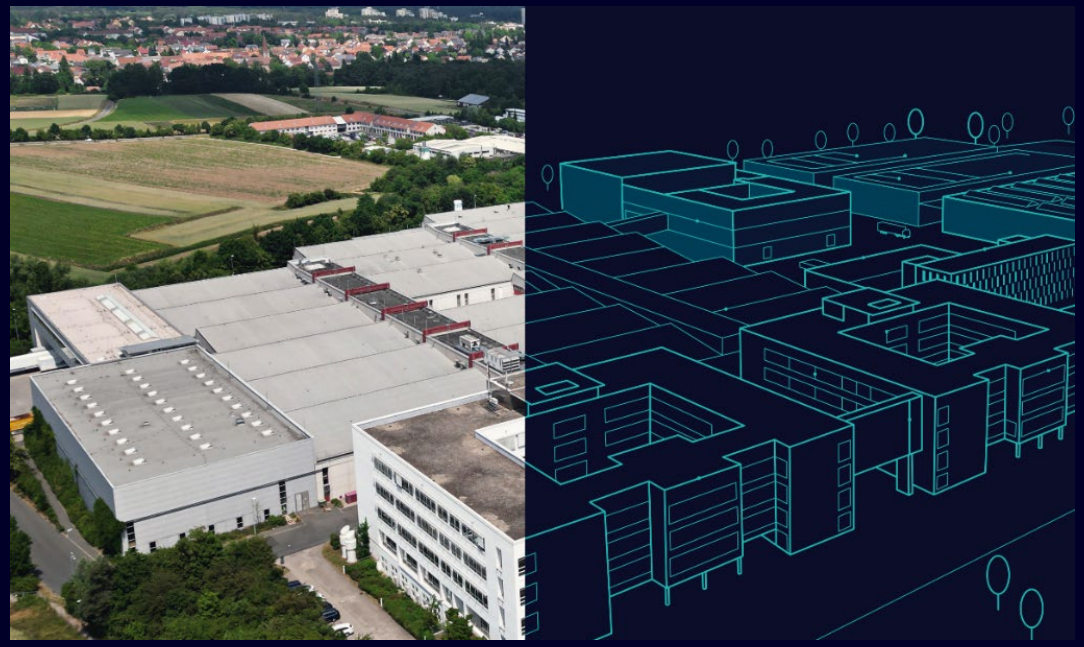
The future of industry is being built now!



Siemens Elektronik Werk Erlangen

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