

# Digital Industries

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Siemens Capital Market Day | Munich, May 8, 2019

# Notes and forward-looking statements



This document contains statements related to our future business and financial performance and future events or developments involving Siemens that may constitute forward-looking statements. These statements may be identified by words such as “expect,” “look forward to,” “anticipate” “intend,” “plan,” “believe,” “seek,” “estimate,” “will,” “project” or words of similar meaning. We may also make forward-looking statements in other reports, in presentations, in material delivered to shareholders and in press releases. In addition, our representatives may from time to time make oral forward-looking statements. Such statements are based on the current expectations and certain assumptions of Siemens’ management, of which many are beyond Siemens’ control. These are subject to a number of risks, uncertainties and factors, including, but not limited to those described in disclosures, in particular in the chapter Risks in the Annual Report. Should one or more of these risks or uncertainties materialize, should decisions, assessments or requirements of regulatory authorities deviate from our expectations, or should underlying expectations not occur or assumptions prove incorrect, actual results, performance or achievements of Siemens may (negatively or positively) vary materially from those described explicitly or implicitly in the relevant forward-looking statement. Siemens neither intends, nor assumes any obligation, to update or revise these forward-looking statements in light of developments which differ from those anticipated.

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Due to rounding, numbers presented throughout this and other documents may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.



Rosendahl Nextrom

Customer needs drive our business – We support them in leveraging unique growth and profit opportunities

**SIEMENS**  
*Ingenuity for life*

**Flexibility**

**Time to market**

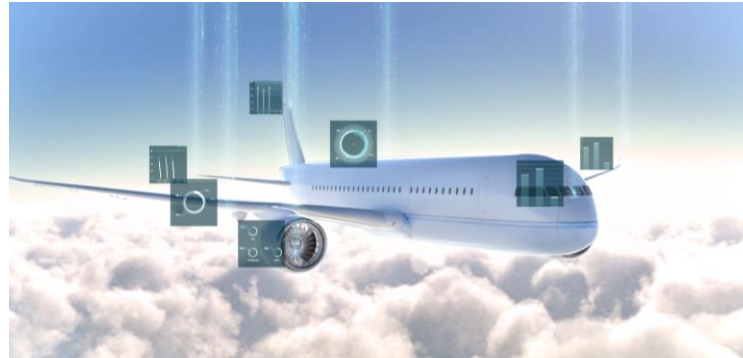
**Productivity**

**Our comprehensive end-to-end portfolio meets core customer demands**



**Example Chemicals**

Individualized color batches of 100 liters instead of 5,000+ liters



**Example Aerospace**

2.5 instead of six years development time for airplanes



**Example Machine Building**

Up to 25 percent shorter machine commissioning times

# Market-leading Business Units focus on customer needs – with software, automation and services



## Software (industrial)

### #1 market position

- Integrated portfolio of industrial software
- Cloud-based, open IoT operating system
- Rapid application development platforms



## Factory Automation

### #1 market position

- Automation products
- Engineering software
- SCADA software
- Systems for production machines
- Industrial Edge



## Motion Control

### #1 market position

- Drives
- Motors
- Machine Tool Systems
- Additive Manufacturing
- Digitalization and Edge Computing for machine tools and drive technology



## Process Automation

### #3 market position

- Automation systems & software for process industries
- Process instrumentation & analytics
- Industrial communication & identification
- Power supply systems



## Customer Services

- Lifecycle services
- Digital services
- Digital Enterprise consulting and integration

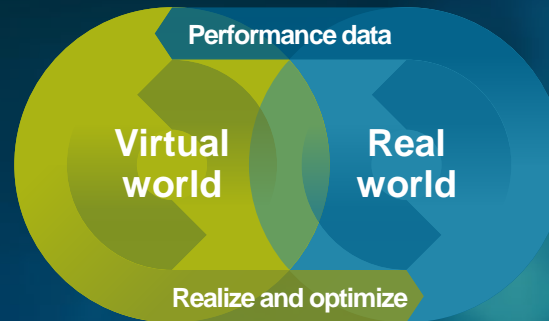
## Solutions for focus Industry Verticals

Digital Enterprise offering integrates virtual and real worlds –  
leading to unique competitive advantage of our customers



## Digital Enterprise

Digital end-to-end solutions for industry



MindSphere

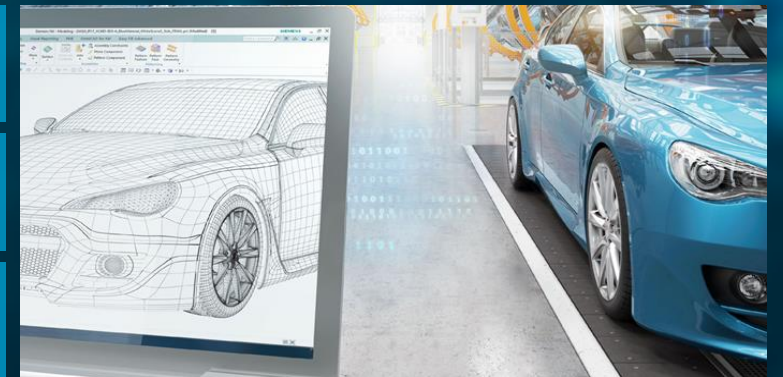
Automation and industrial software for process and discrete industries



Industrial communication

Industrial security

Industrial services



# Digital Industries is uniquely positioned – with automation and software driving digital transformation



Dedicated sales channel approach has widened customer reach from small and medium enterprises to global corporations



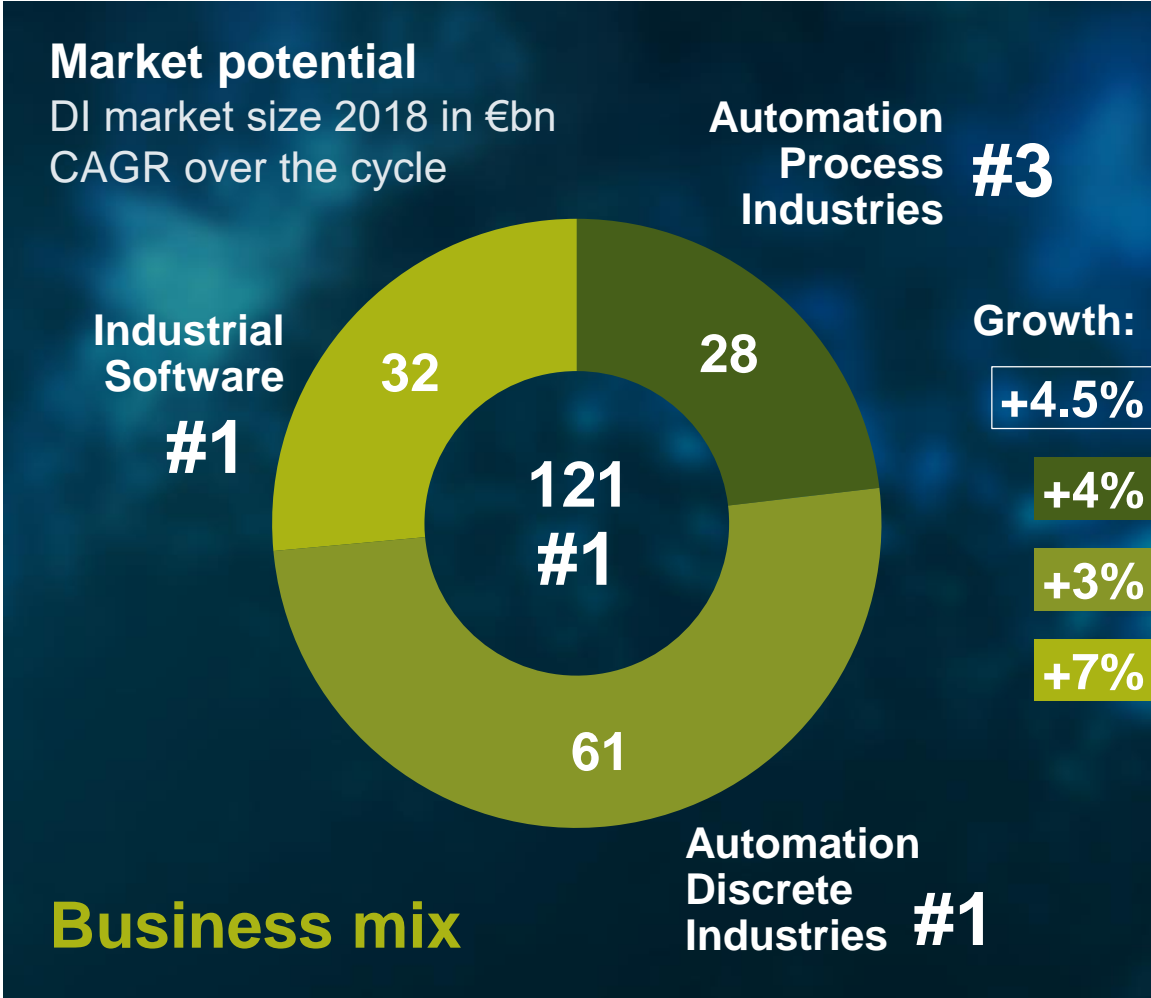
## Close to customers around the globe

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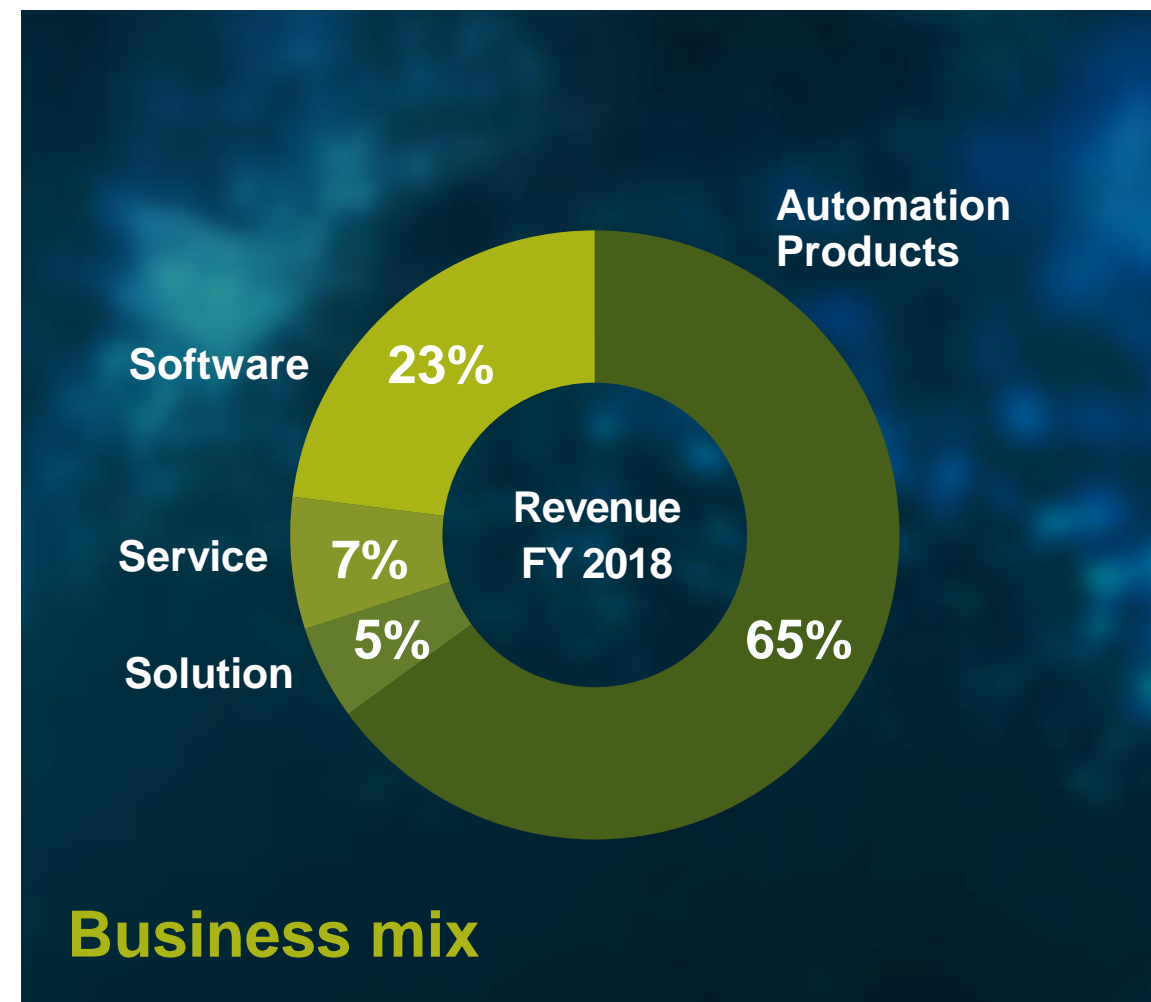
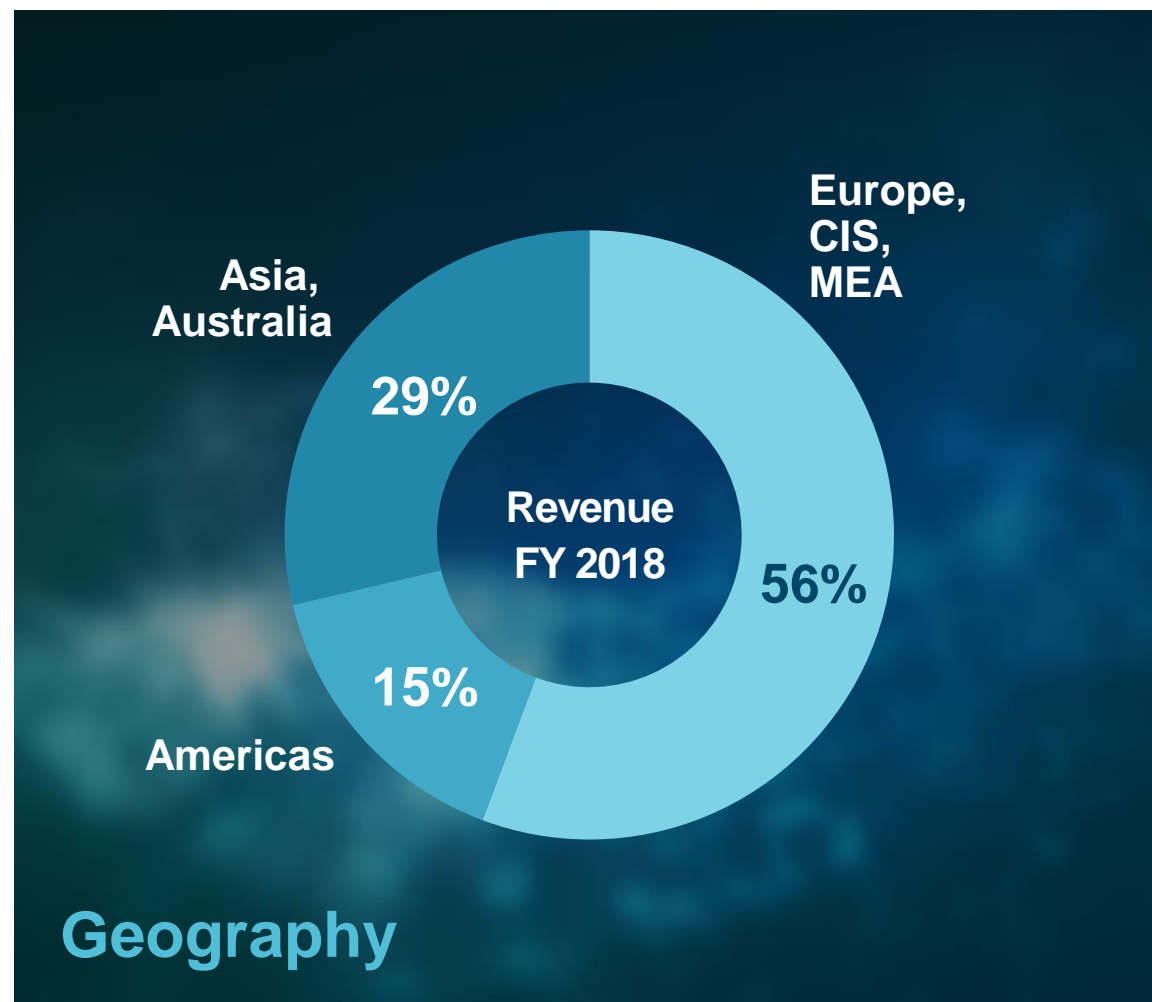
Revenue<sup>1</sup> **€15.6bn**      Employees **~75,000**



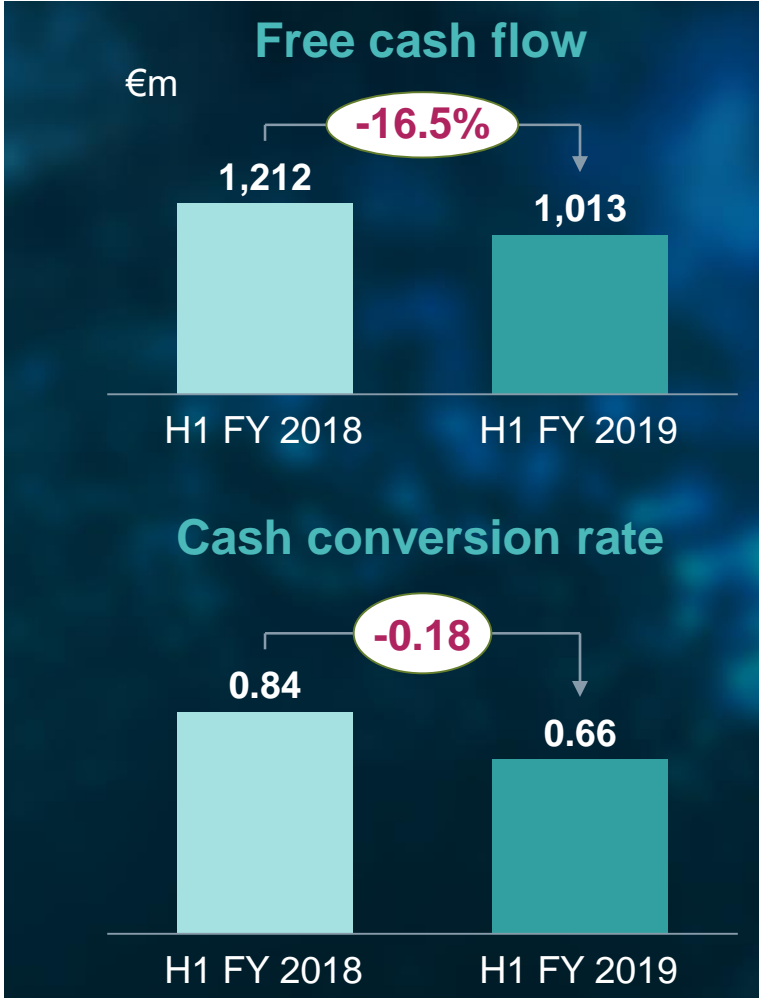
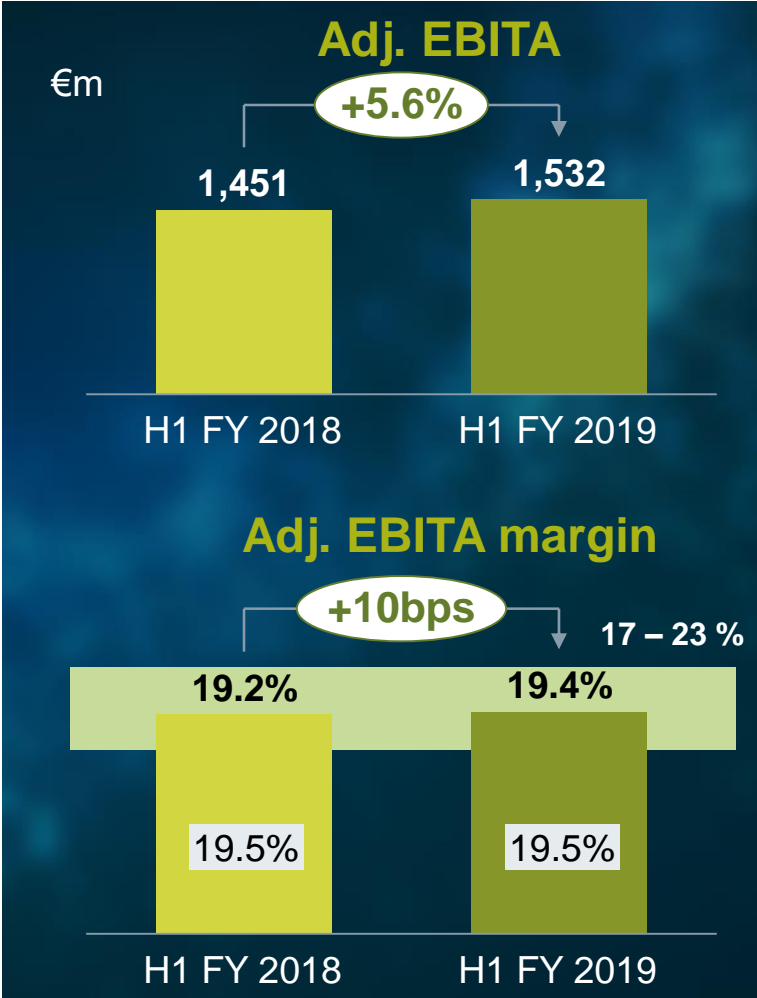
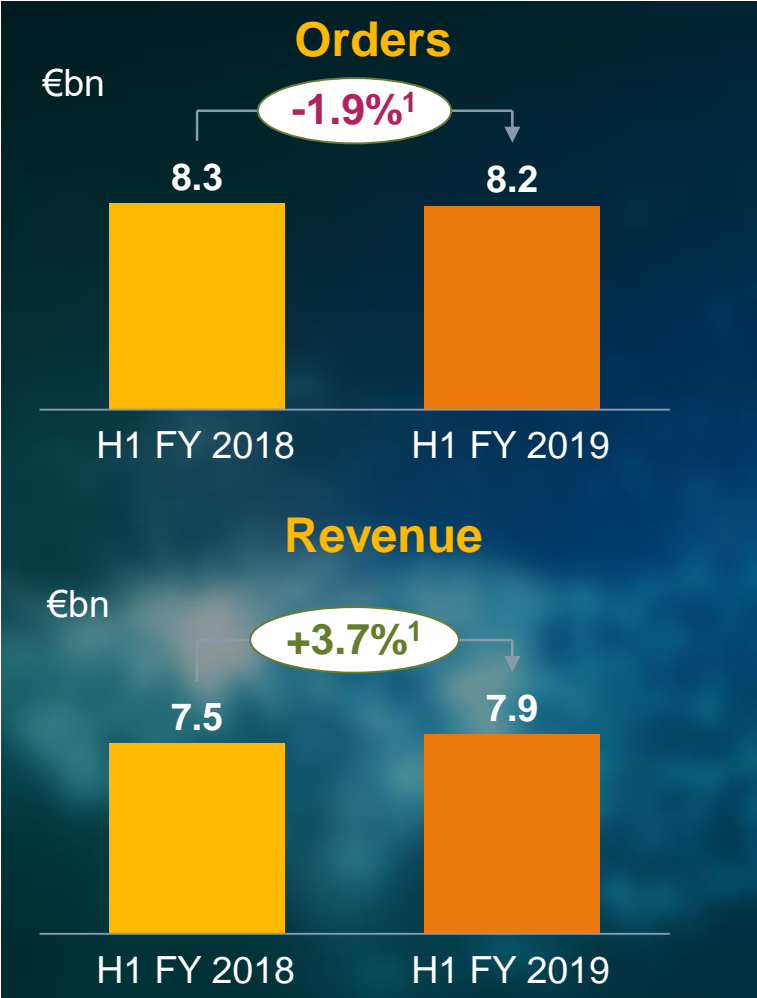
# Focused on fast-growing end-markets



## Achieve growth across businesses and regions to further increase resilience



# DI Q2 results show continued proven financial performance



# Vision2020+ fosters entrepreneurial focus to maximize customer value and profitable growth for DI



- 1** Closer alignment and integration of regional organization **Volume growth**
- 2** Integrate lean and business-focused setup in regions, headquarters, and corporate functions **Cost efficiency and adaptability**
- 3** Shared platforms for discrete, process, and hybrid industries **Focus on innovation**
- 4** Global responsibility of Business Units **Accountability and speed**

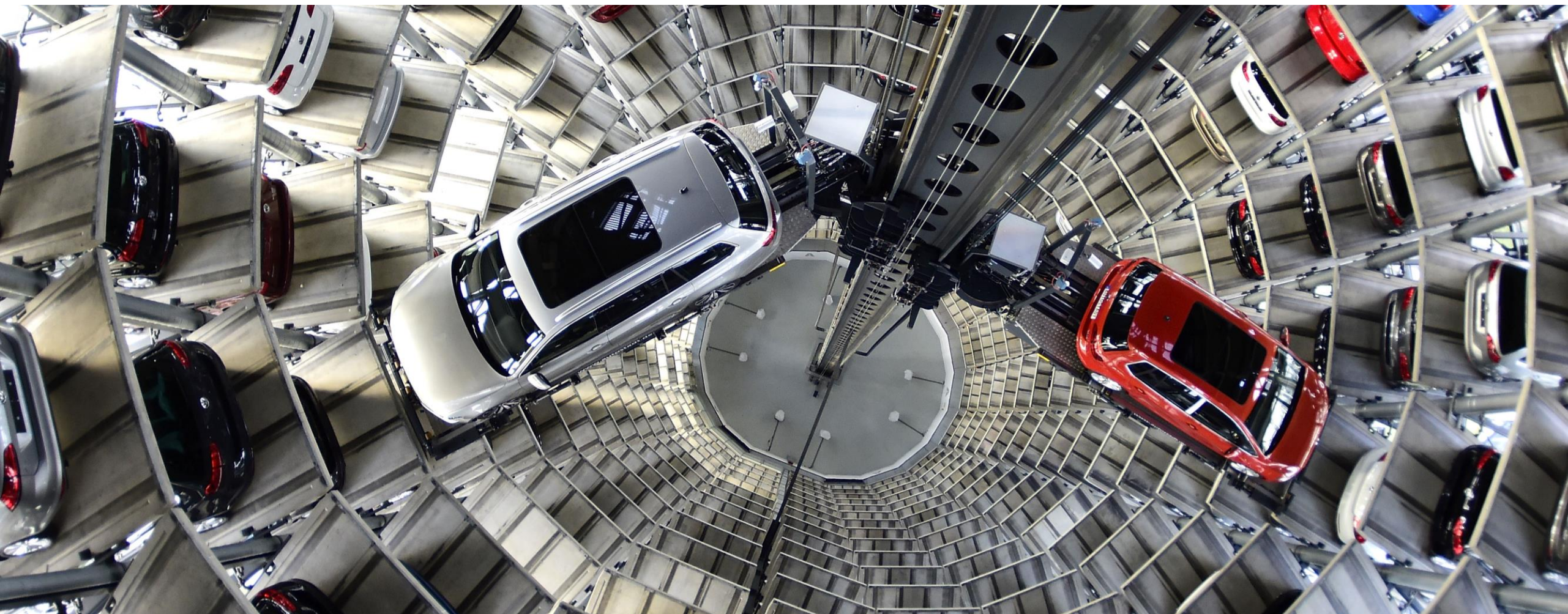
## Consumer demands and technological development increase challenges for industries

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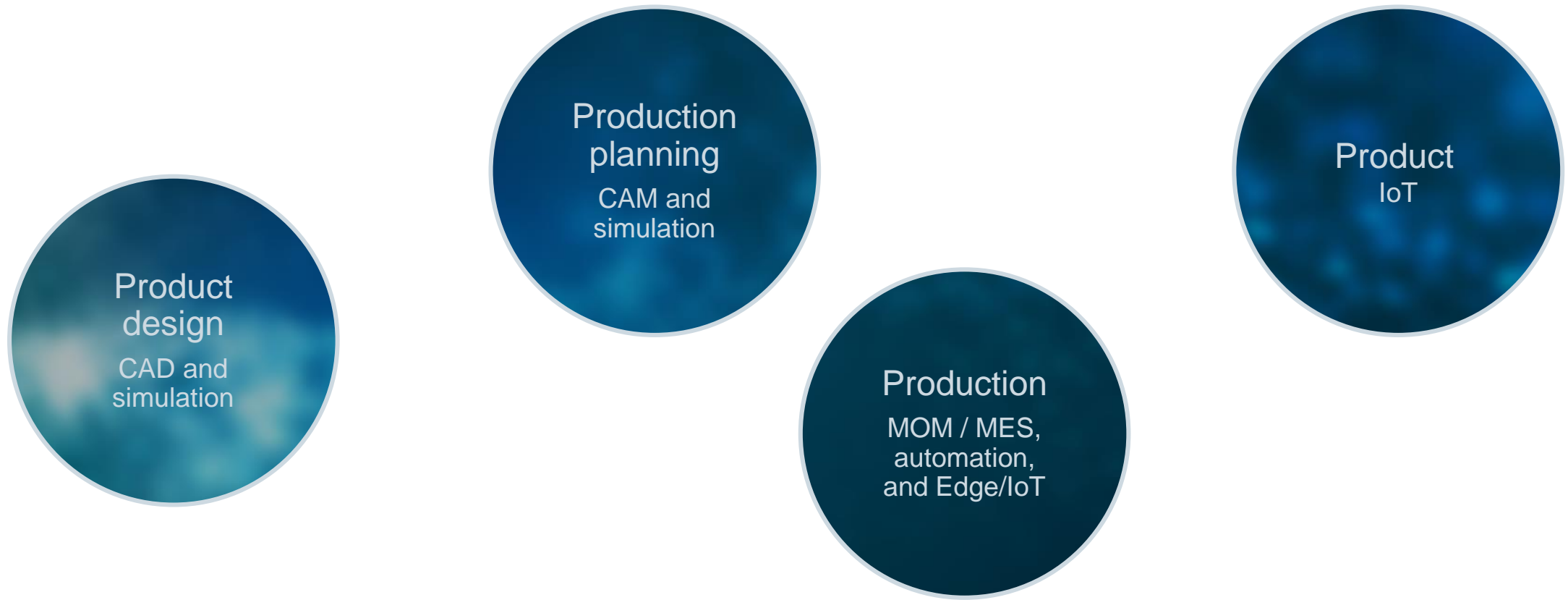
## Example automotive

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Connectivity Platform sharing Safety  
Battery development Customization  
**Variety of powertrain concepts**  
Autonomous driving Battery production  
Regulatory pressures Modularity

# Powerful automation platforms and industrial software already provide first-level benefits



Maximum benefit of Digital Enterprise is leveraged  
only through integration of the entire value chain

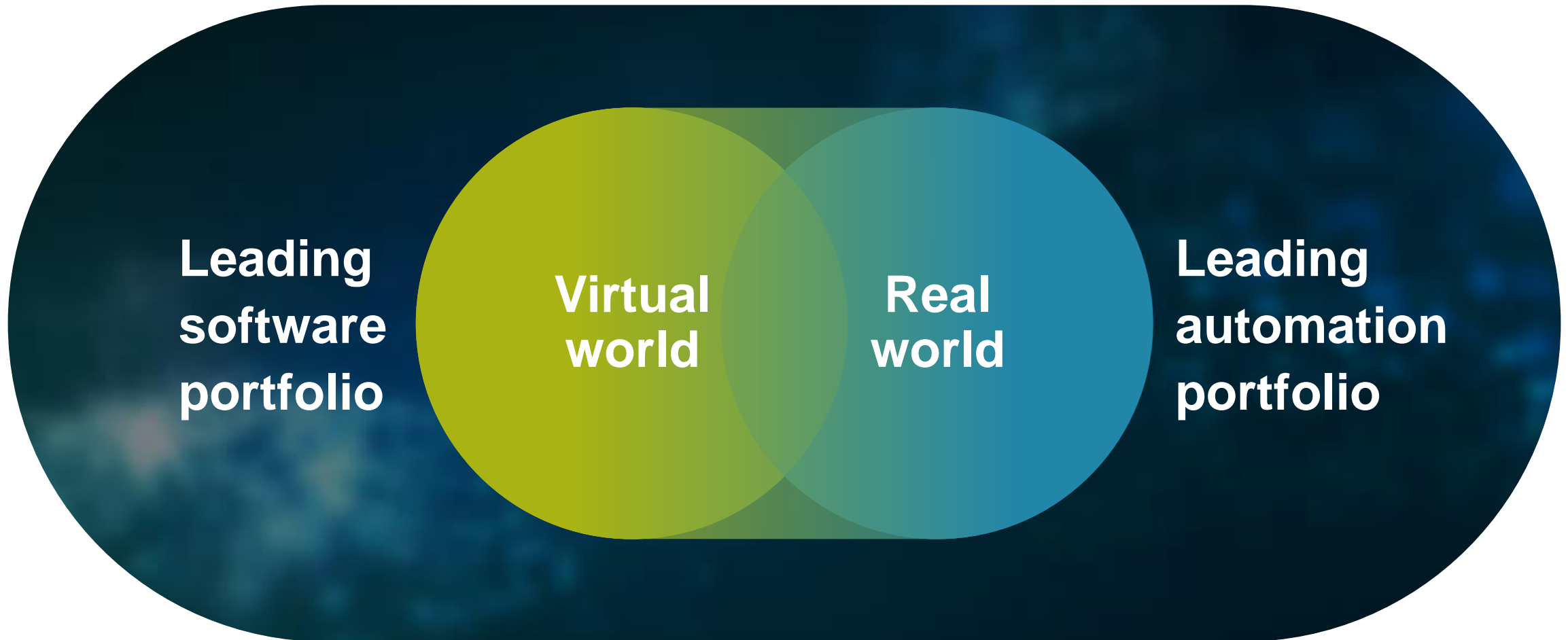
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# Seamless integration Digital Enterprise

**Digital Enterprise provides unique competitive advantage  
to customers by integrating virtual and real worlds**

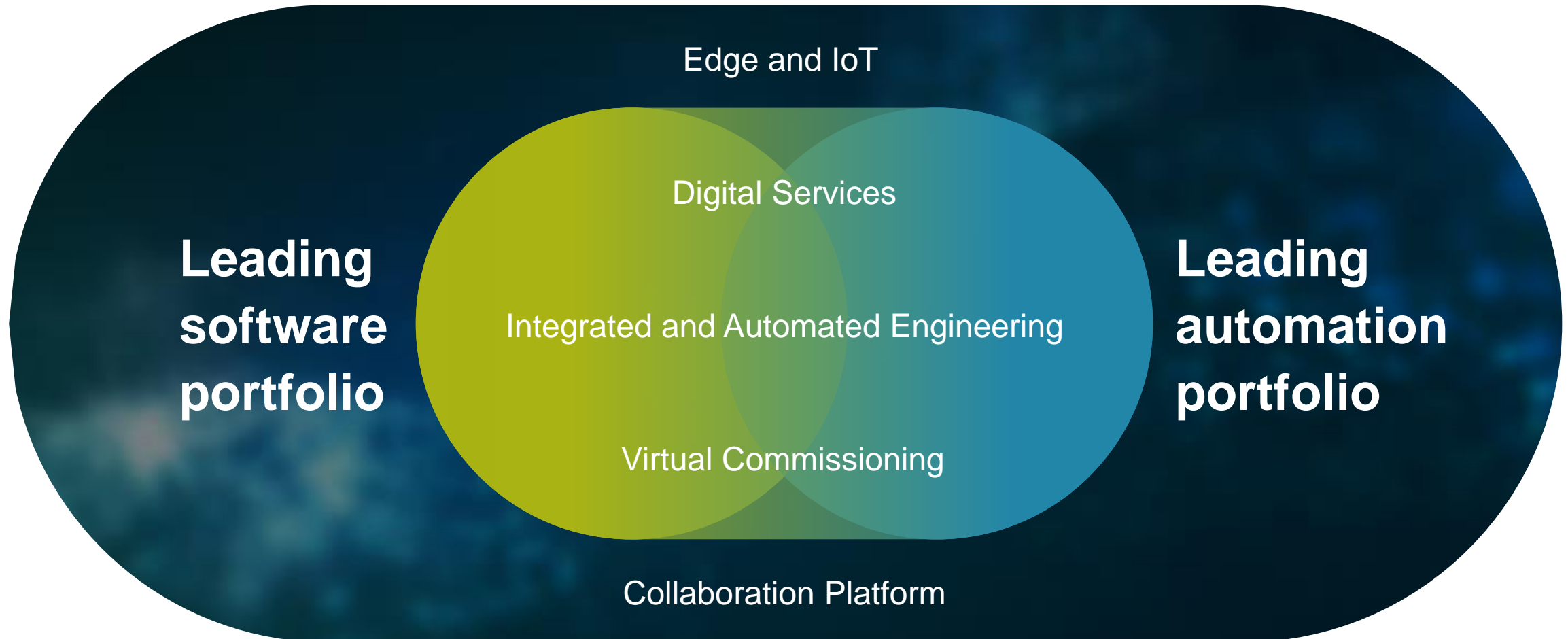
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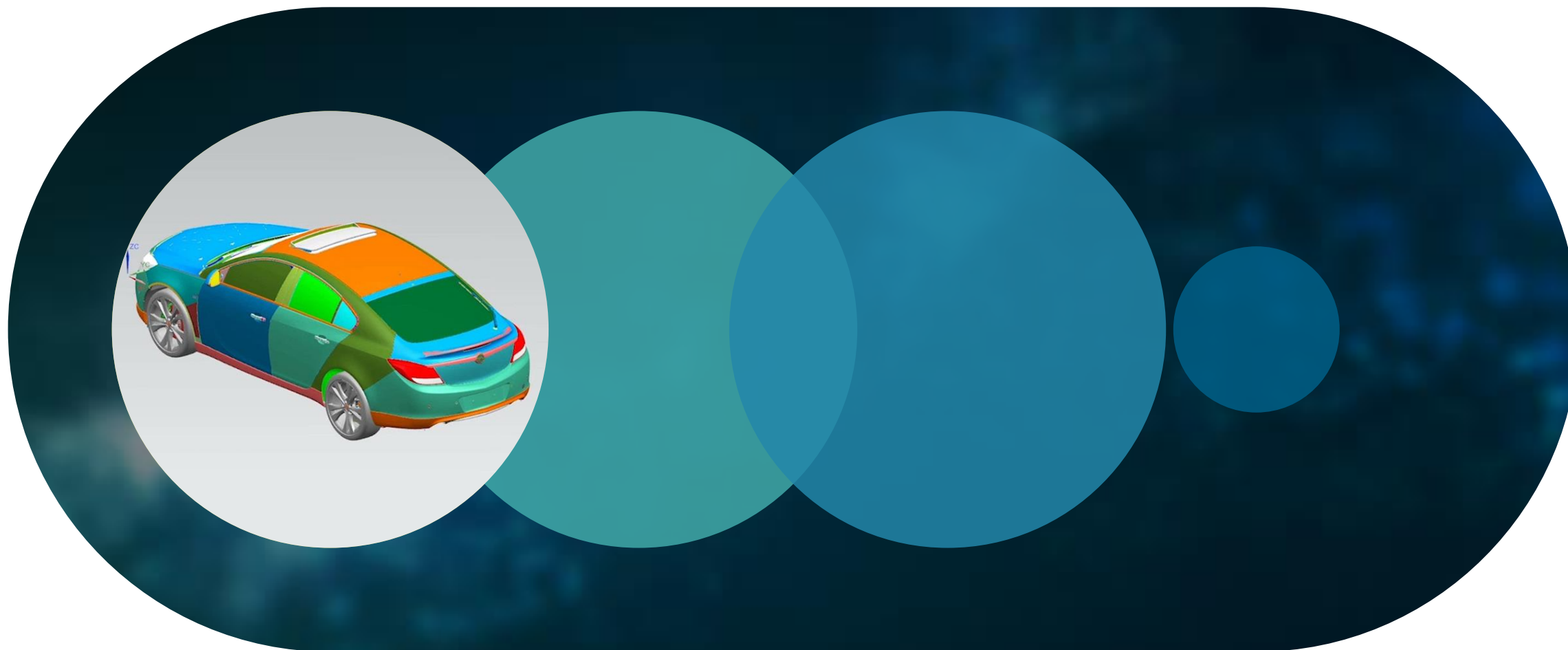
# Systematic expansion of our portfolio: >€10bn invested in M&A since 2007



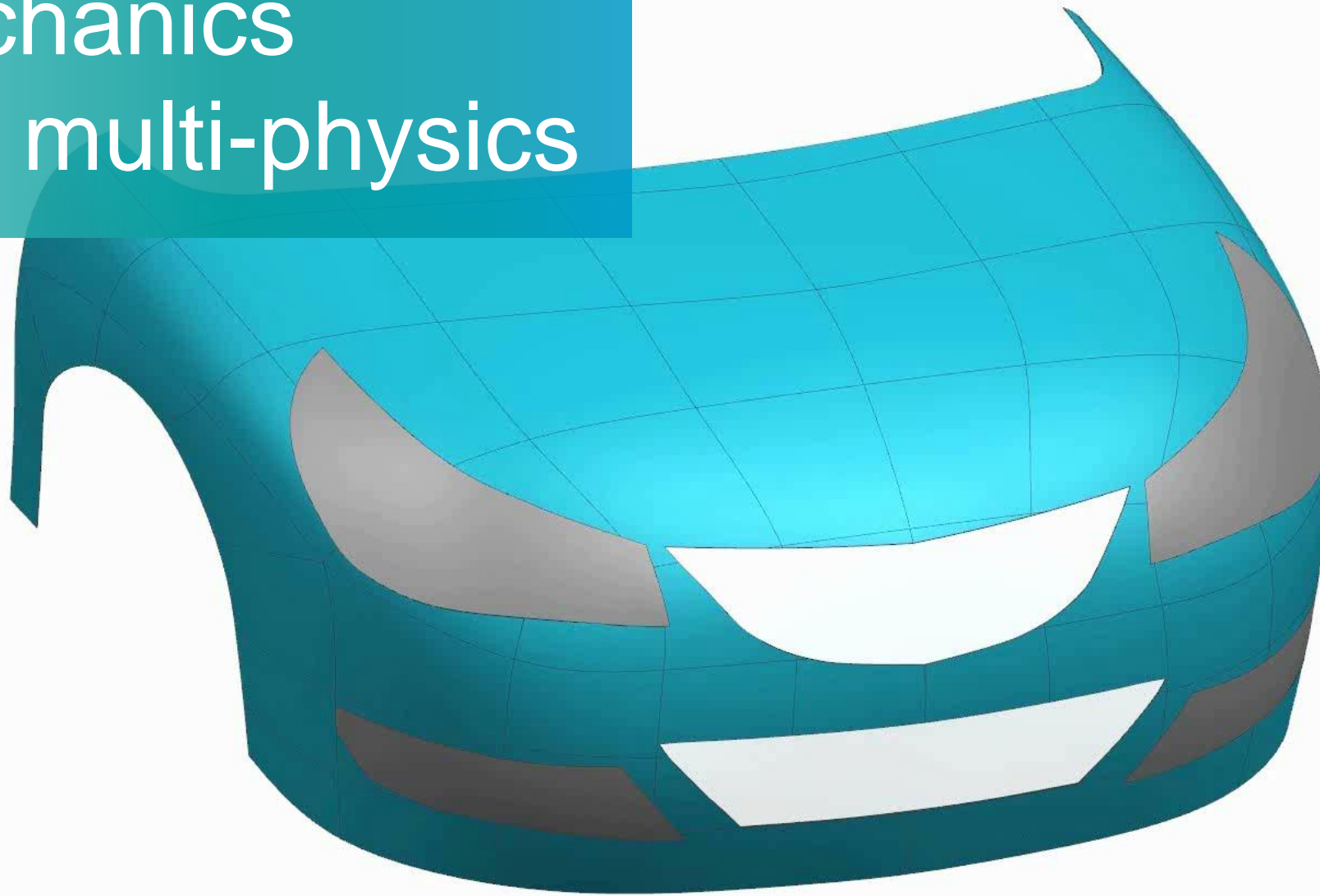
Innovations through integration of software and automation,  
based on deep domain know-how



# The Digital Twin of the product reduces time to market



# Mechanics and multi-physics



Capital HarnessXC

Capital

Home

Automate

Workflow

Drawing

Window

New

Print

Save

Automotive Interactive

Automotive Interactive

Build Lists

Harness Study - DOOR-LIFT

Harness Study - DOOR-RIFT

1) System Designs

2) Wiring Designs

3) Harness Designs

AUDIO-SYSTEM

CABIN

DOOR-FL

DOOR-FL:123:A

Diagram1

Nailboard

DOOR-LIFT

DOOR-RIFT

DOOR-LF\_BRG

ROOF

SEAT

Harness Design

Symbols

Parts

DOOR-FL

Bundles

Nodes

Connectors

ILC1

ILC2

P64

P65

P66

P67

P68

P69

P70

P71

P72

P73

P74

P75

P76

P77

Clips

CL1

CL2

CL3

Assemblies

Grommets

Splices

SP404

SP407

SP449

Devices

Wires

2N-SPY

2N-SPY

4N-FUL

4N-INA

4N-INA

4N-POI

4N-TRI

5N-CT

5N-CT

5N-CT

5N-GNI

5N-GNI

5N-GNI

5N-GNI

5N-GND-CTSY-D-2068

5N-GND-CTSY-LP-2675

5N-GND-CTSY-LP-2676

5N-POWER-I-2278

6N-DRV-DOOR-LOCK-7287

Diagram1

Mentor

A Siemens Business

Unrestricted © Siemens AG 2019

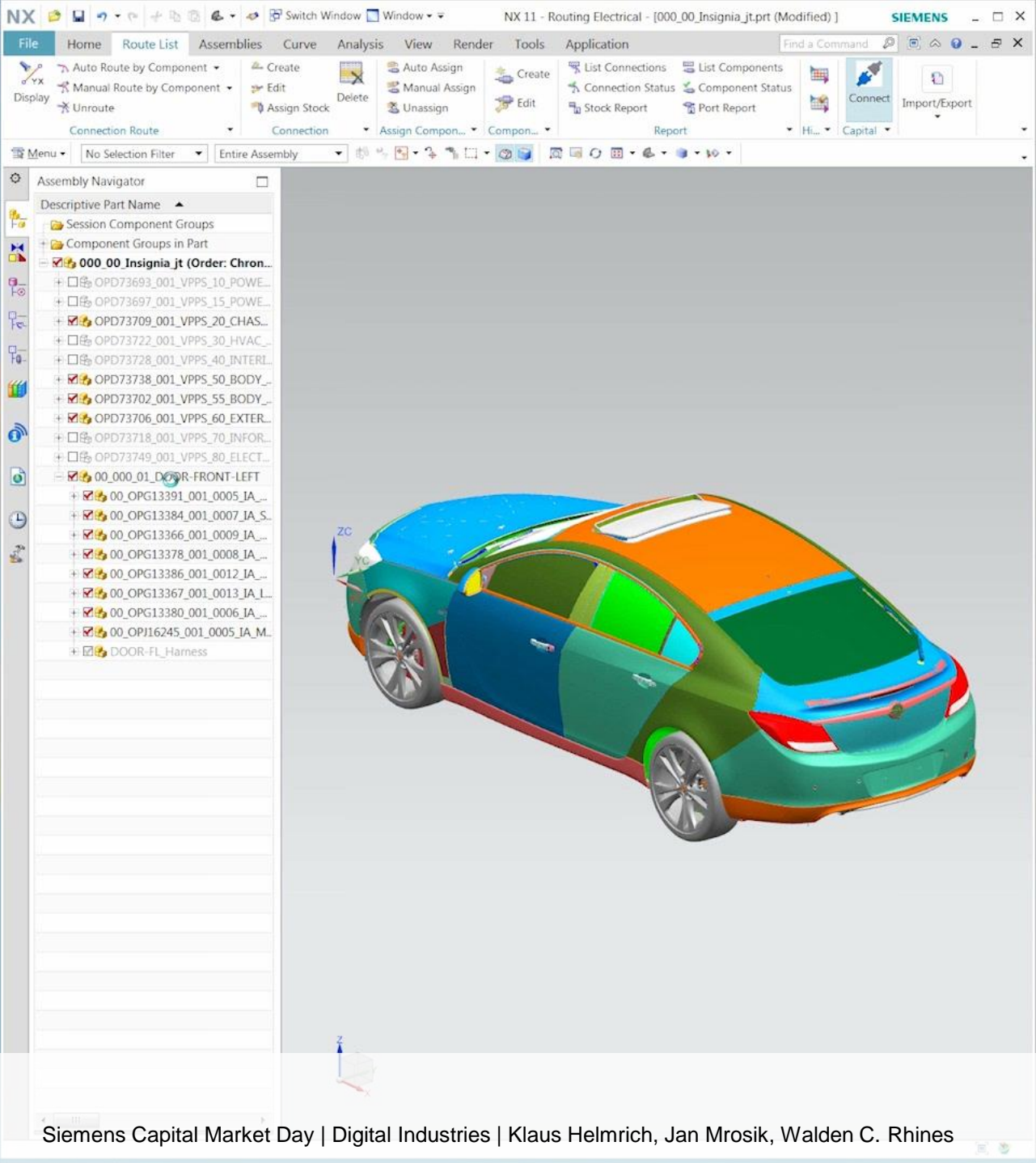
Page 24

Munich, May 8, 2019

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EN



Kevin Smith (kevin) - Organization/Core Design &amp; Release Engineer-Latest Working

Owner: Me

Select Type

# Embedded software

Owner: Kevin Smith (kevin) - Organization/Core Design &amp; Release Engineer-Latest Working



002052/A;1-DISPLAY UNIT DI007v1 Requirements &gt;



Display Information ...

REQ-000001

Revision: A

## Overview

Viewer

Architecture

Attachments

History

Relations

## Properties

ID: 002052

Revision: A

Revision Name: DISPLAY UNIT DI007v1 Requirements

Description:

Occurrence Name:

Type: Requirement Specification Revision

Sequence:

Release Status:

Date Released:

Effectivity:

Owner: Kevin Smith (kevin)

Group ID: Organization

Last Modifying User: Kevin Smith (kevin)

Parent:

Number Of Children: 1

## Ratings

Your Rating:



Average Ratings: 0.0



## Classification Properties

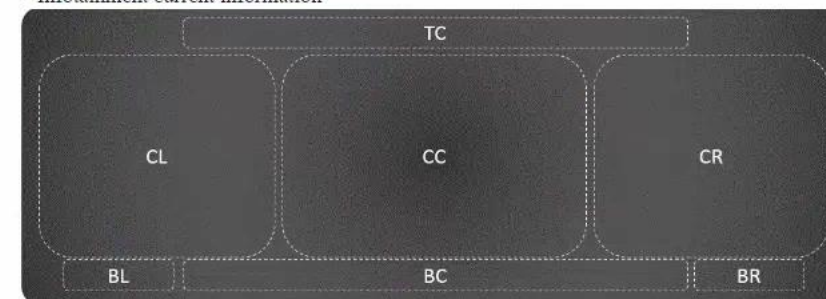
## Preview

### DISPLAY UNIT DI007v1 Requirements

#### Display Information - DI007V1

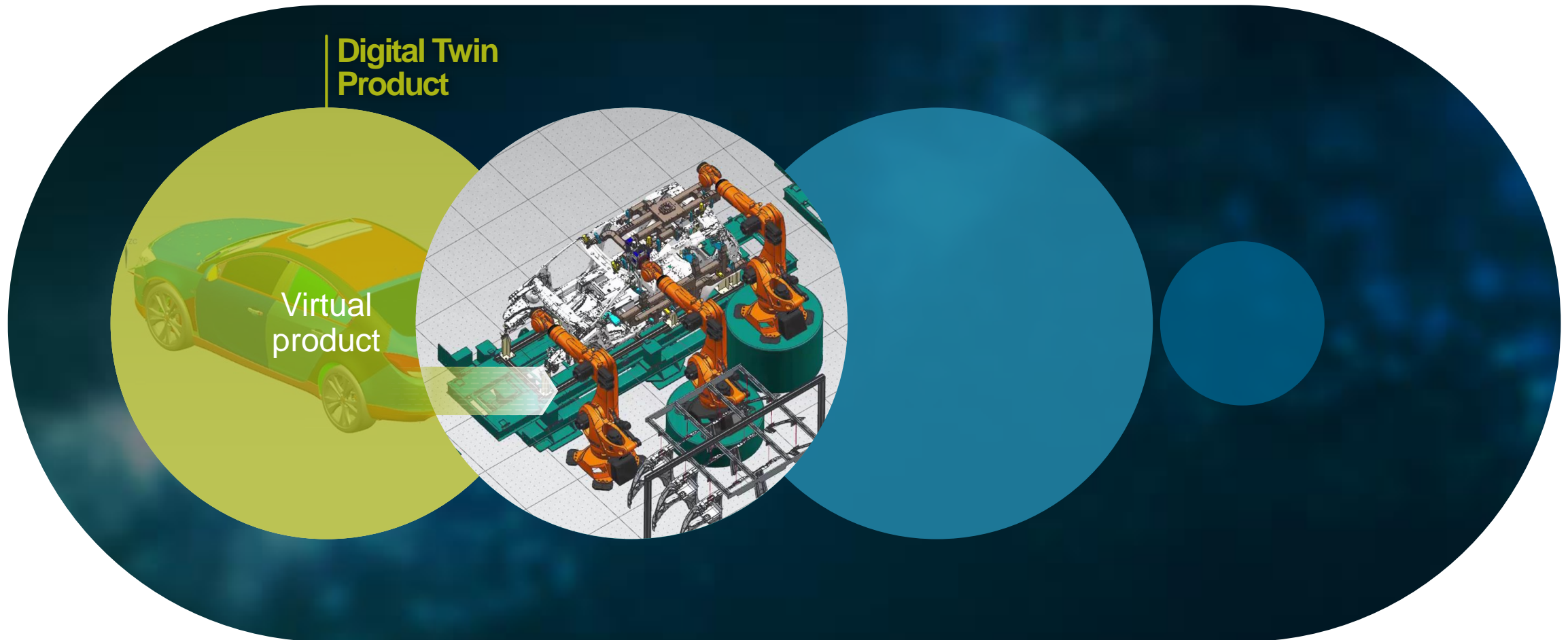
Display unit shall show all the information needed for safe driving conditions to the customer. This shall include but not limited to the following information to the customer:

- > Trip Data - Miles lapse, Time lapse
- > Fuel gauge:
- > Speedometer: MPH or KPH
- > Tacometer:
- > Odometer:
- > Warnings: Engine, Oil, Seatbelt minder, Tire pressure, Lane Keeping
- > Infotainment current information

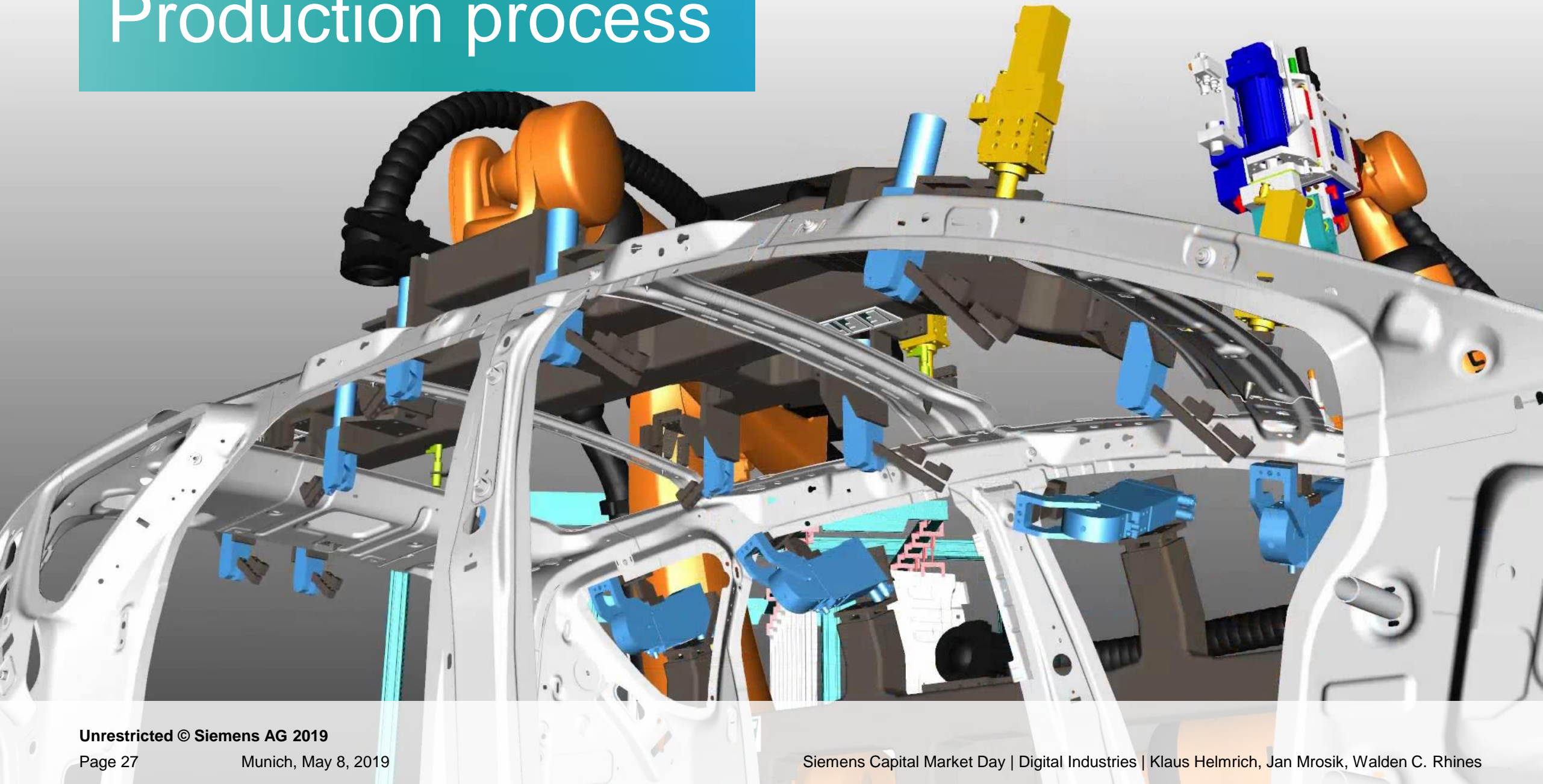


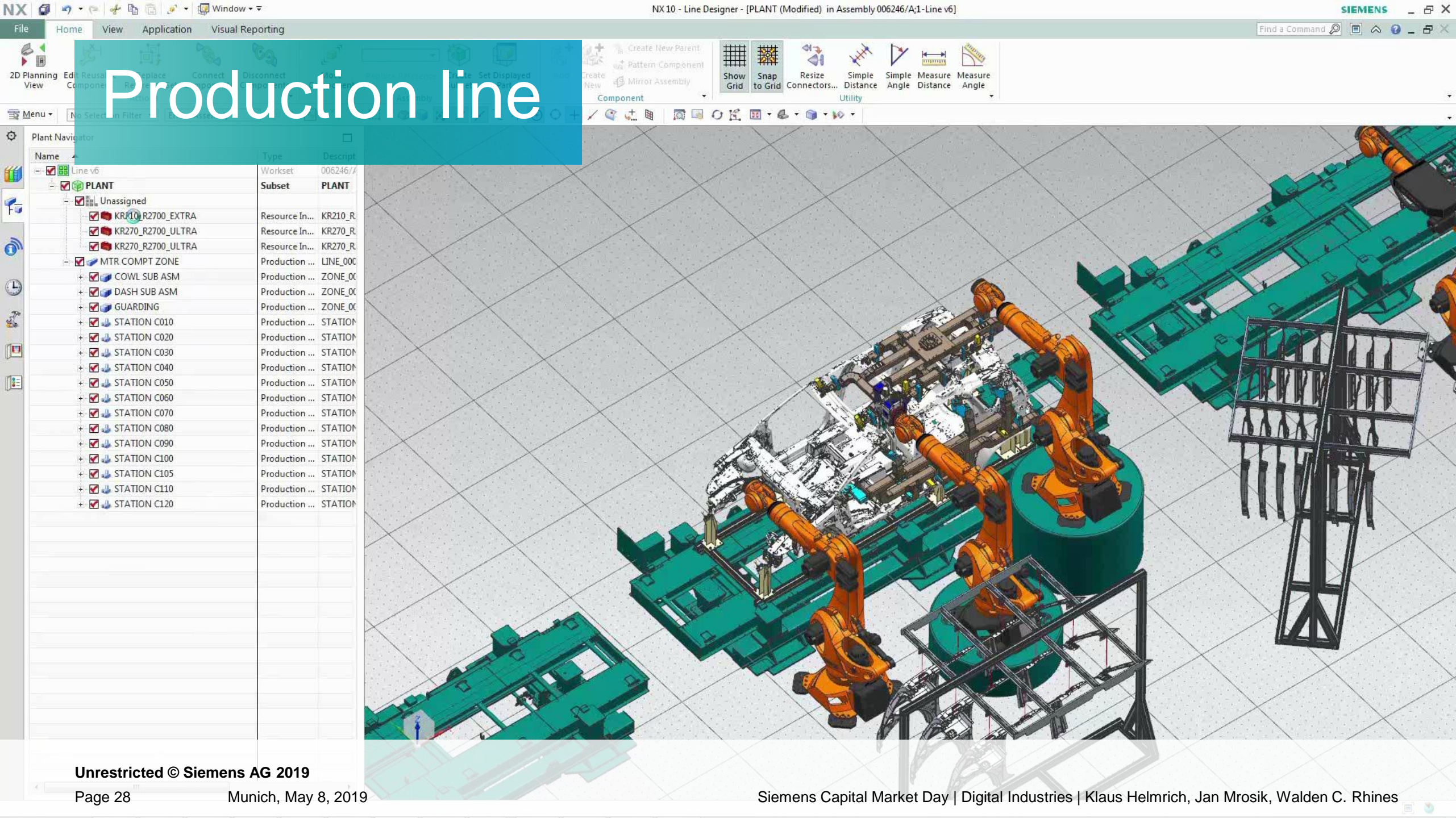
# The Digital Twin of the production accelerates planning, setup, and optimization

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# Production process



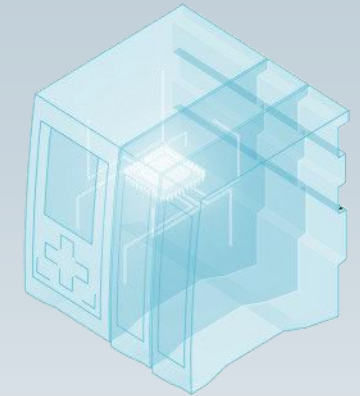
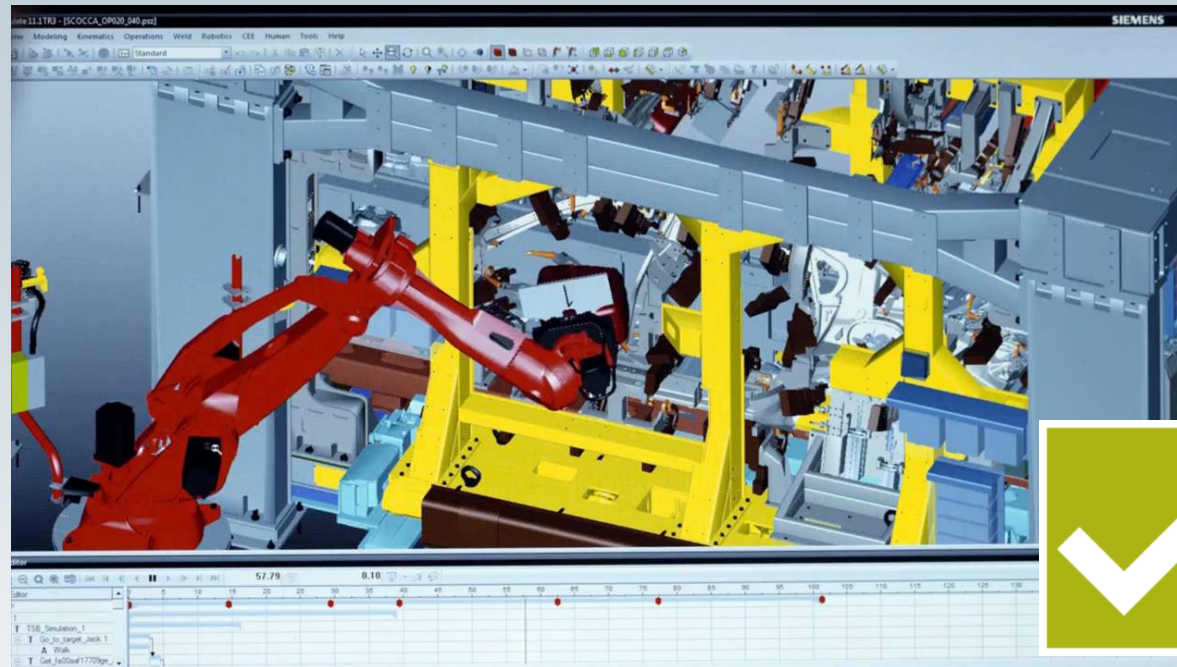


# Production line

Plant Navigator		
Name	Type	Description
Line v6	Workset	006246/1
PLANT	Subset	PLANT
Unassigned		
KR210_R2700_EXTRA	Resource In...	KR210_R
KR270_R2700_ULTRA	Resource In...	KR270_R
KR270_R2700_ULTRA	Resource In...	KR270_R
MTR.COMPT.ZONE	Production ...	LINE_000
COWL SUB ASM	Production ...	ZONE_00
DASH SUB ASM	Production ...	ZONE_00
GUARDING	Production ...	ZONE_00
STATION C010	Production ...	STATION
STATION C020	Production ...	STATION
STATION C030	Production ...	STATION
STATION C040	Production ...	STATION
STATION C050	Production ...	STATION
STATION C060	Production ...	STATION
STATION C070	Production ...	STATION
STATION C080	Production ...	STATION
STATION C090	Production ...	STATION
STATION C100	Production ...	STATION
STATION C105	Production ...	STATION
STATION C110	Production ...	STATION
STATION C120	Production ...	STATION

# Entire factory

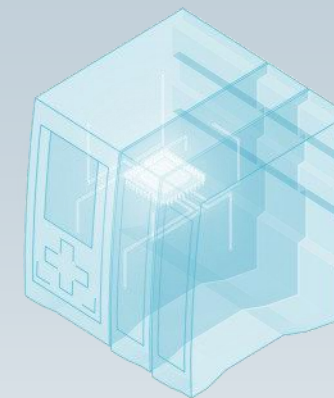
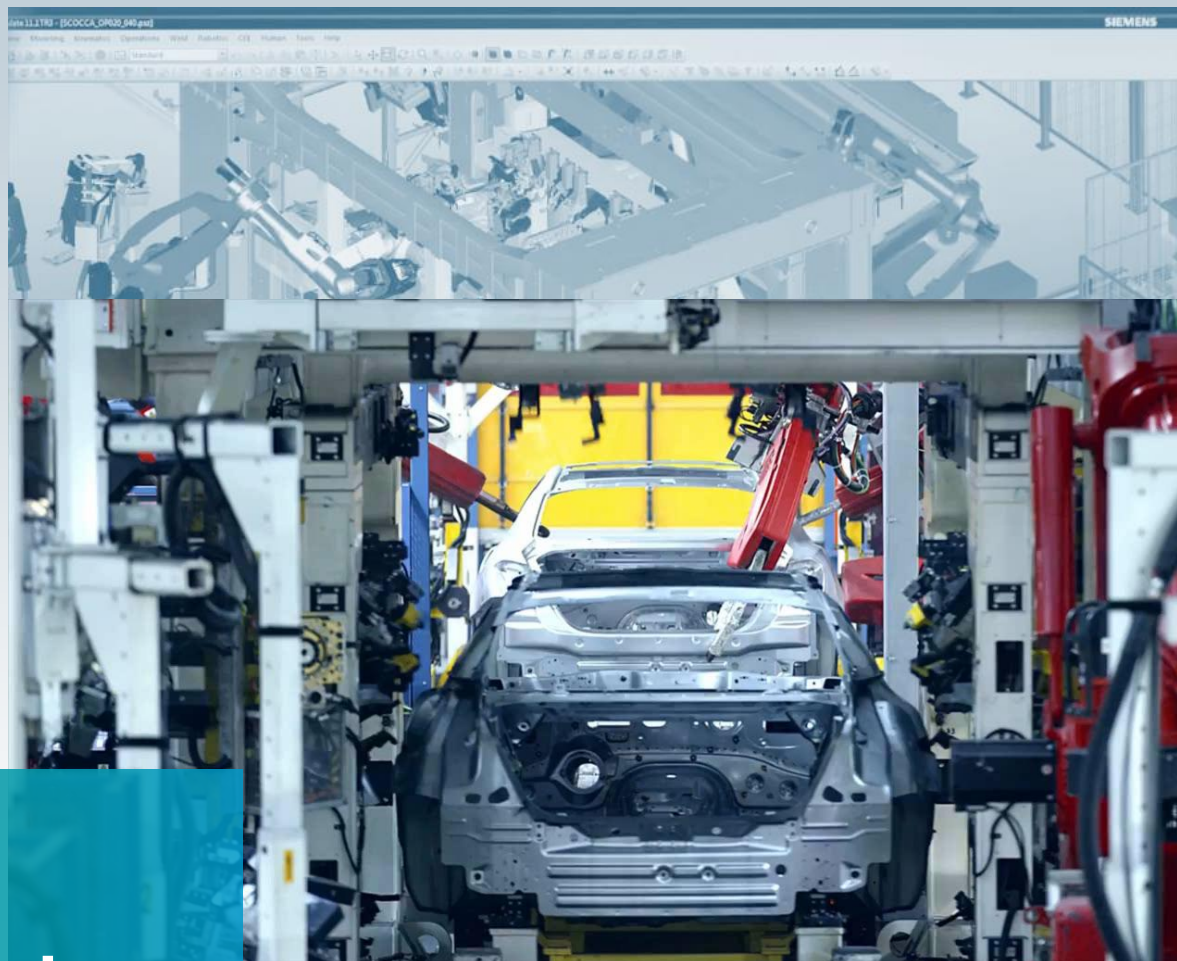
An aerial, high-angle view of a large, modern industrial factory. The facility is multi-level, with white structural beams and railings visible. The floor is filled with numerous orange robotic arms (likely KUKA) positioned at various workstations. Yellow overhead cranes are suspended from the ceiling. The environment is clean and organized, with safety barriers and clear walkways. The overall impression is one of a highly automated and efficient manufacturing environment.



Digital Twin  
of SIMATIC  
S7-1500

# Virtual Commissioning

# Real Commissioning

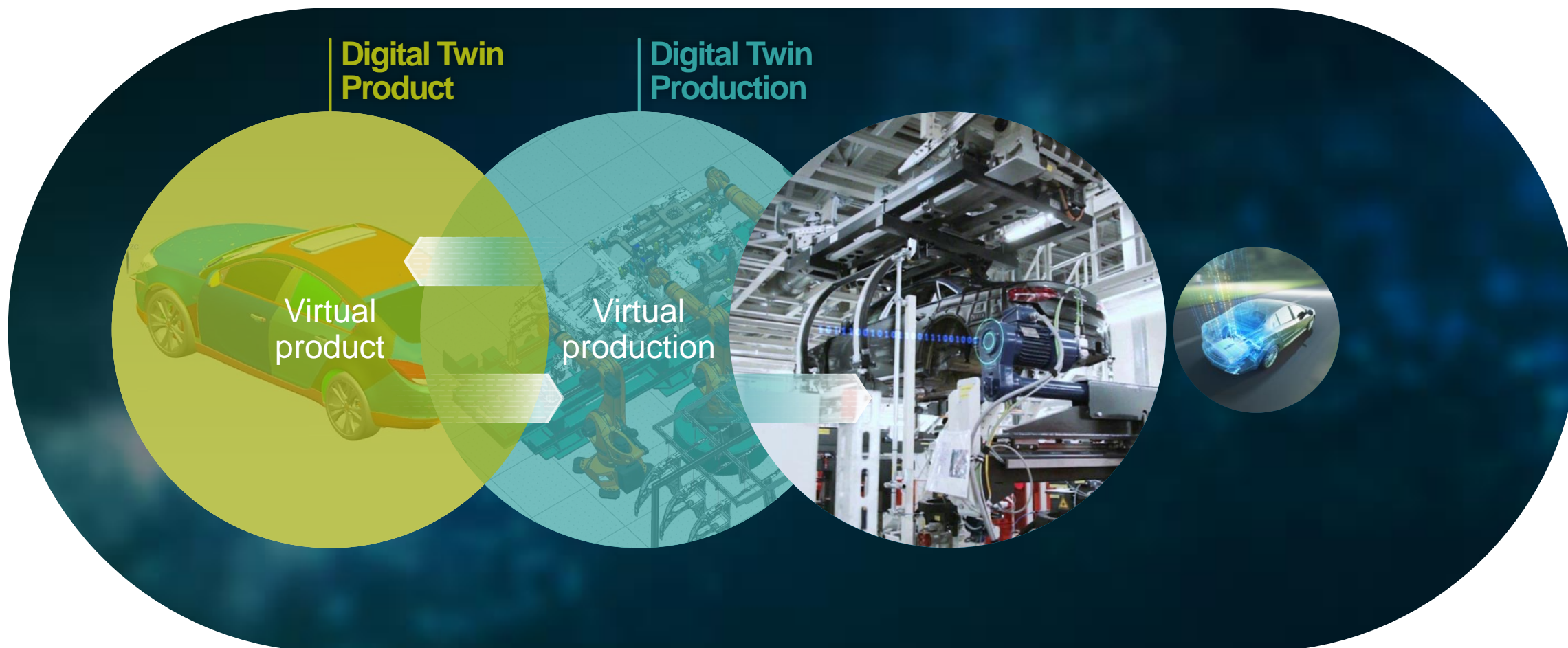


**SIMATIC  
S7-1500**



# Holistic automation portfolio increases productivity on the shop floor

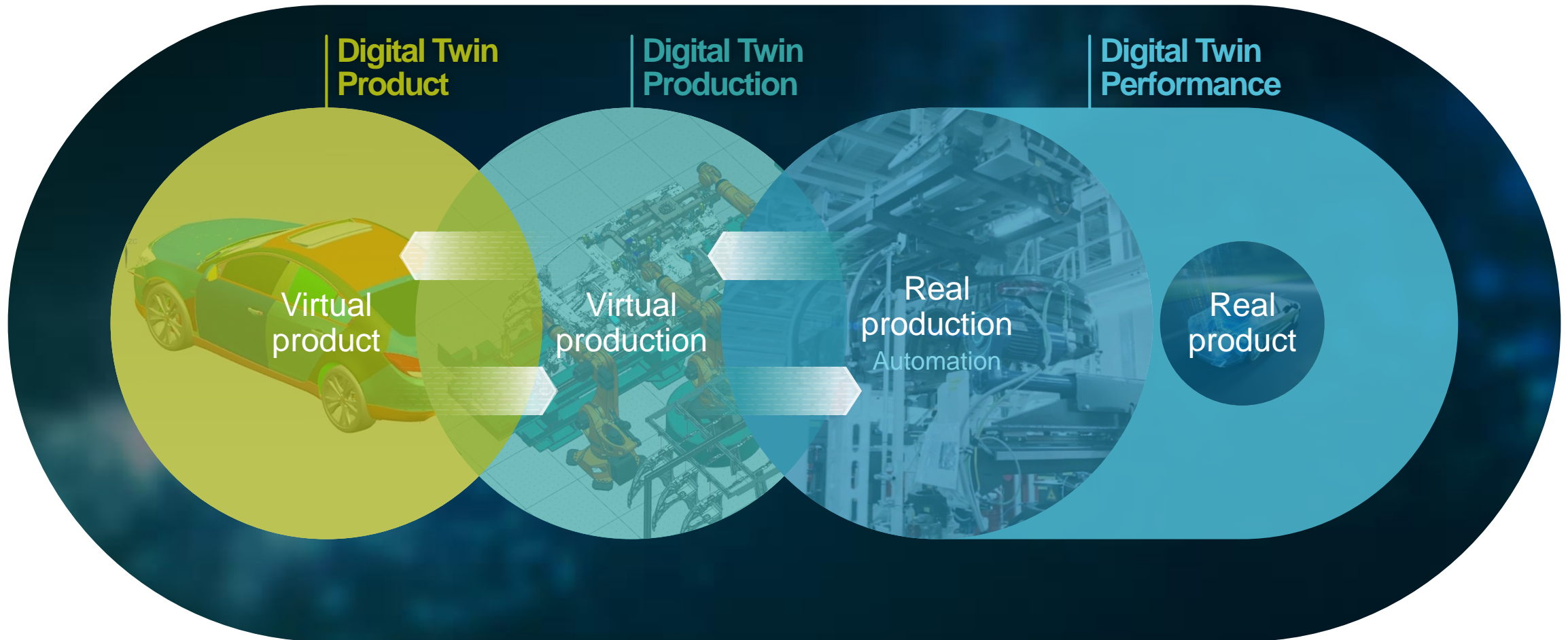
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# Real production



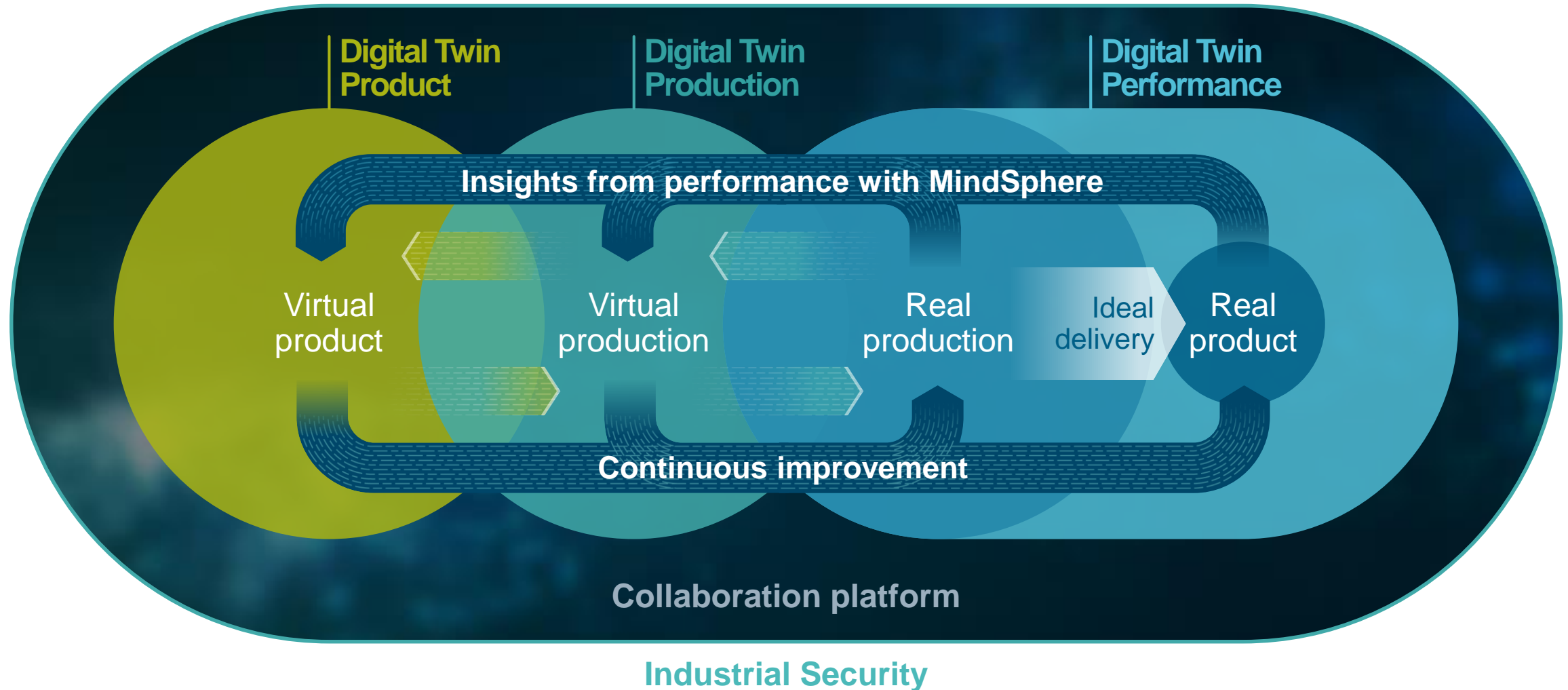
# The Digital Twin of the performance enables continuous analysis of both product and production



# Internet of Things



# Feeding back insights enables continuous optimization of product and production



# Mentor, a pioneer in Electronic Design Automation and a natural expansion for Siemens Digital Industries Software

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Critical design software is used to create the world's electronic systems.

Comprehensive product portfolios address all levels – from integrated circuit to electronic systems.

- One of top 3 Electronic Design Automation companies
- Global footprint as part of Siemens organization
- 6,500 employees worldwide

# Mentor integration brings synergies to existing customers and opens opportunities to create value for new customers

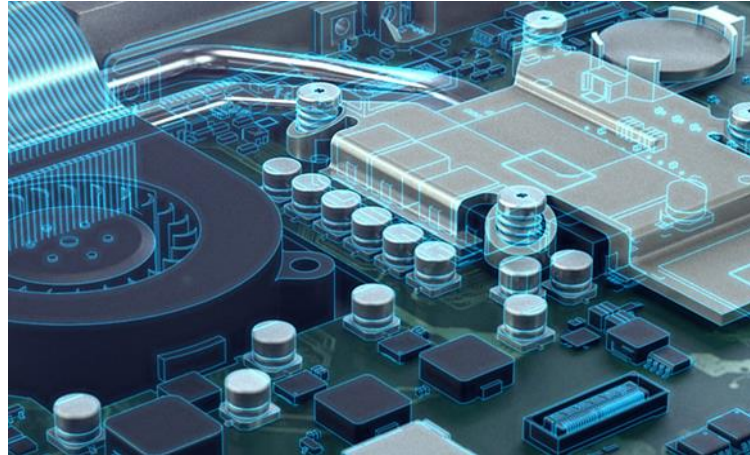


## Integrated Systems Design



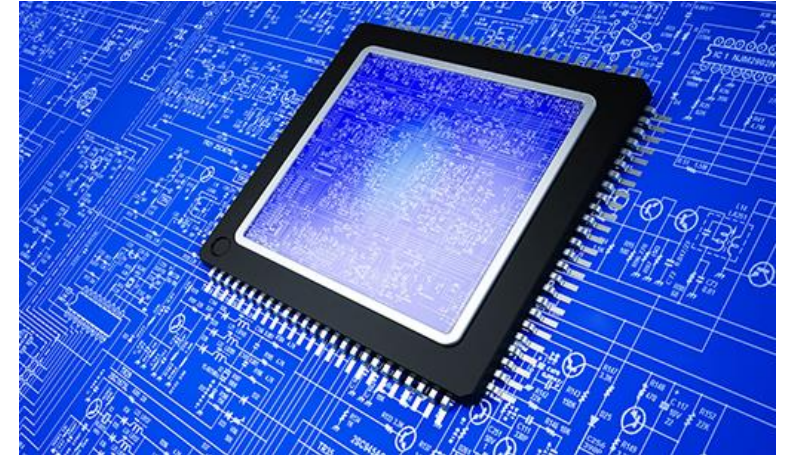
Best-in-class interoperability for integrating electrical assemblies into mechanical environments.

## Electronic Systems Design



Product integration of Mentor Xpedition and Siemens NX and Teamcenter executed in active sales campaign.

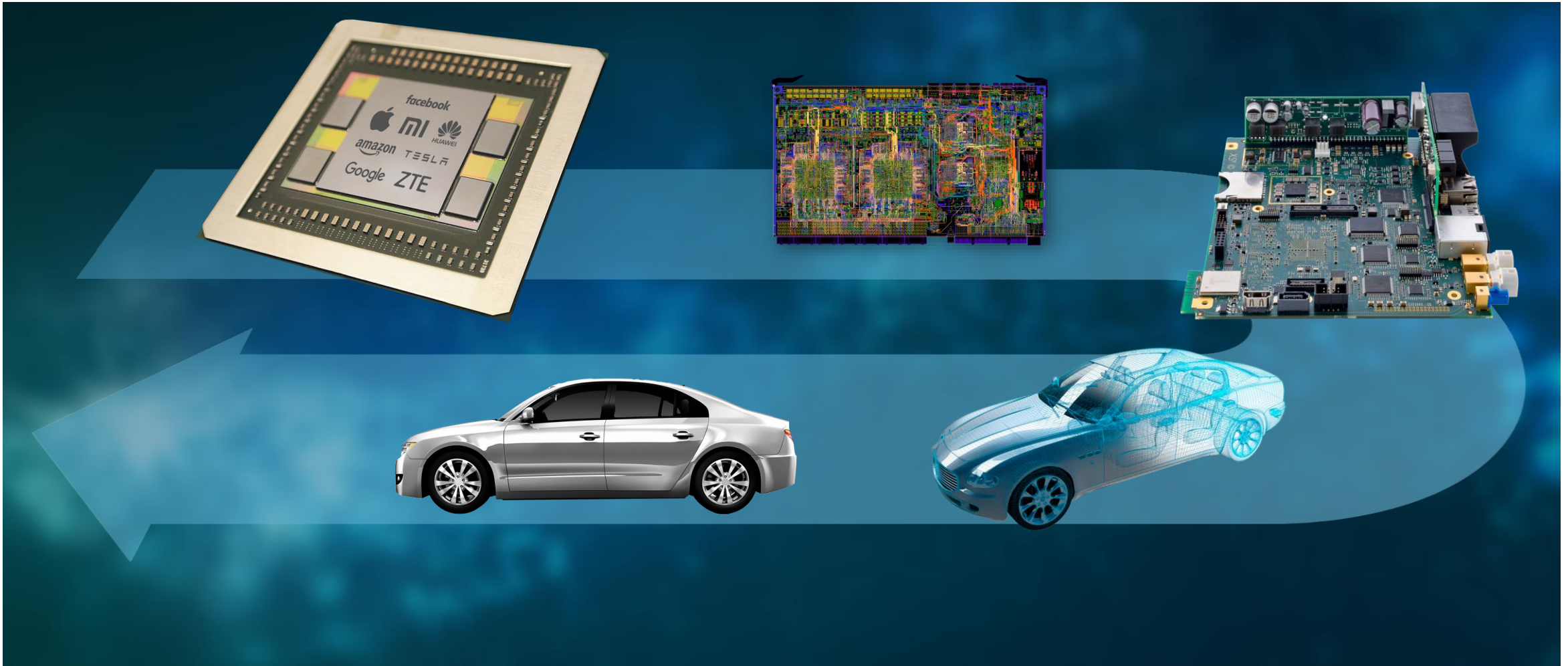
## Integrated Circuit Design



Cypress Semiconductor demonstrates value of using Mentor verification & Siemens ALM software together.

# Mentor's expertise in integrated circuit design and verification adds significant value to Siemens' software offering

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# Siemens follows through on initial investment commitments, and our customers react positively



**1** Increase in top 10 contract renewals as per Q2 FY19 **Double digit growth**

**2** Revenue growth YoY in FY18 **Double-digit growth**

**3** Continuing with further acquisitions **+5 companies**


**4** Continuing innovation **+17 product launches**

**Growing employee base and high retention of key people**

50% productivity gain  
designing 10M gate  
video decoder



Source: NVIDIA white paper ([go.mentor.com/4N9cP](https://go.mentor.com/4N9cP))



Fewer re-spins and  
improved quality  
through automated  
system synchronization

**ASML**

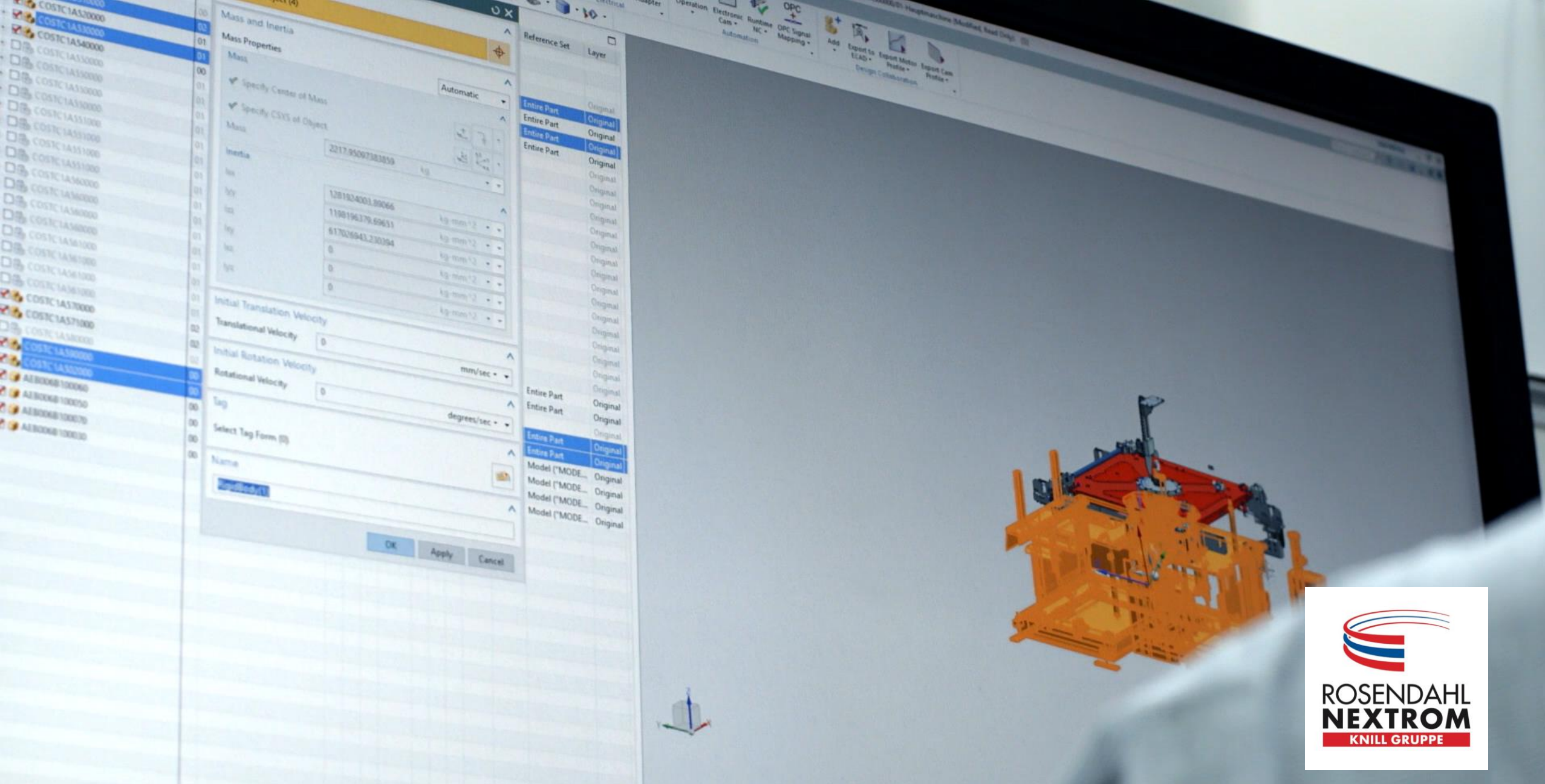
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*We achieve a totally new level of output, quality, and performance. None of this would be possible without a digitalized and digitally controlled workflow in the factory.*

**Siegfried Altmann**

CEO Rosendahl Nextrom GmbH





50%

shorter  
development time

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25%

higher  
production output

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ROSENDAHL  
**NEXTROM**  
KNILL GRUPPE



Reduced  
engineering time  
by

>1/3

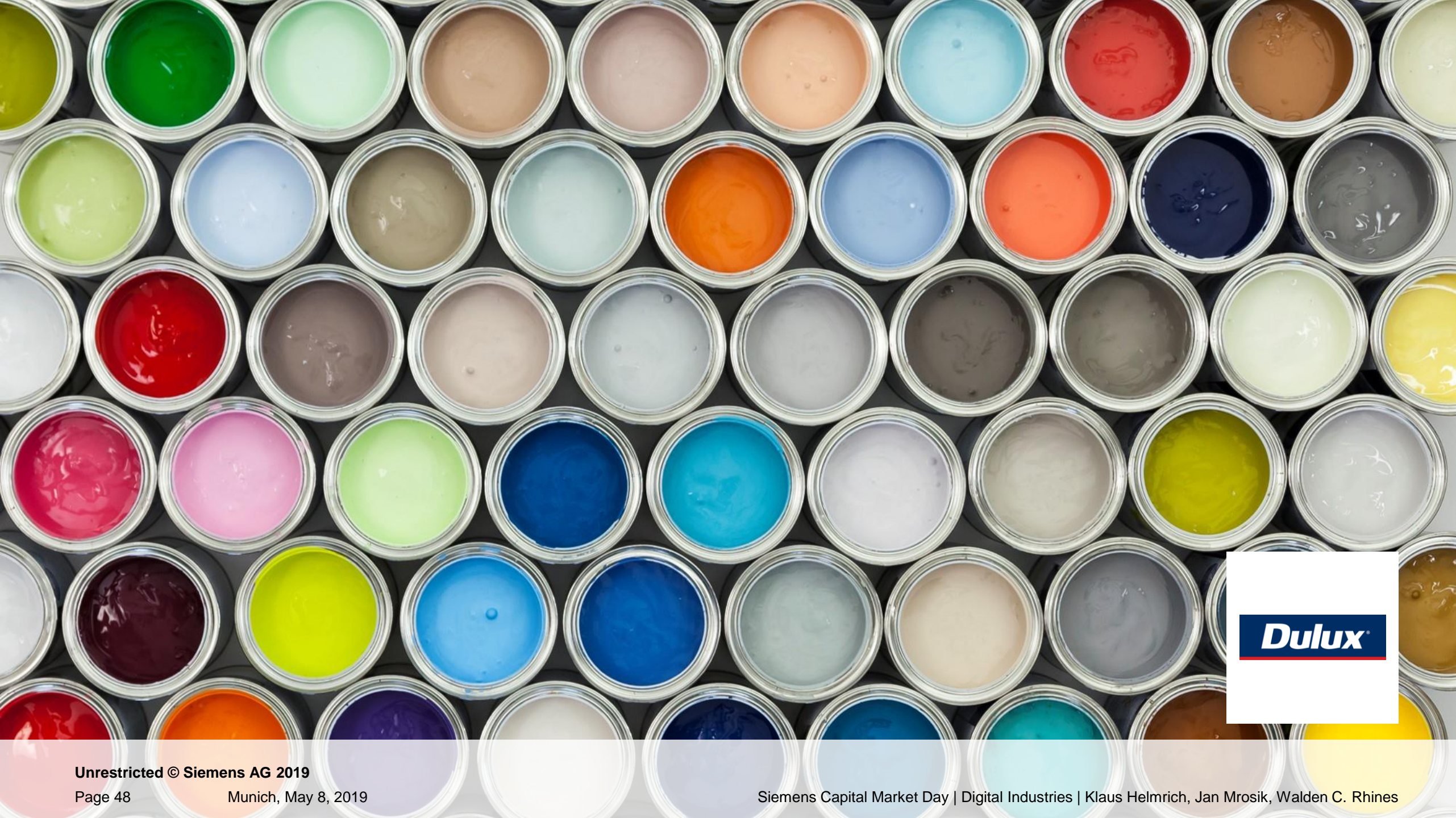
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Reduced  
commissioning  
times by

>50%

---





**>50%**

less time from  
testing to paint  
production

---

**8x**

faster production  
process

---

Reduced  
batch size

from **5,000 l**  
to **100 l**

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**Dulux®**

# Examples from Siemens factories – automation and digitalization lead to greater flexibility and productivity



More flexible automation (Erlangen)

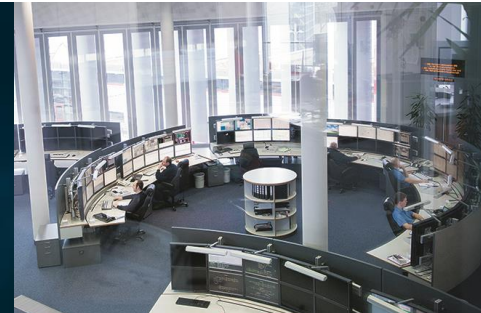
**Fully automated electronics production line with handling robots**



**Reduction of manual efforts by 80%**

Artificial intelligence (Karlsruhe)

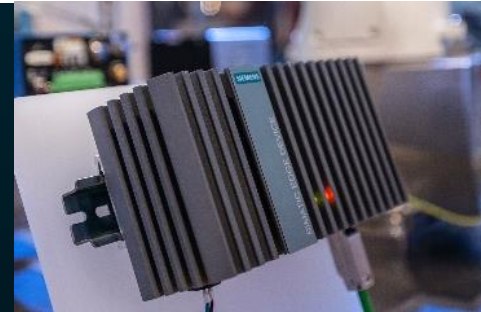
**Intelligent planning: asset optimization and greater delivery reliability**



**>50% more accurate demand forecasting**

Edge Computing (Amberg)

**Quality control via algorithm: higher output**



**30% reduction in x-ray inspection for PCBs**

# Our IoT operating system MindSphere – enhanced by Edge and Mendix low code app development



## Applications

Powerful industry solutions with advanced analytics



## Open PaaS

Develop robust industrial IoT solutions faster with global scalability

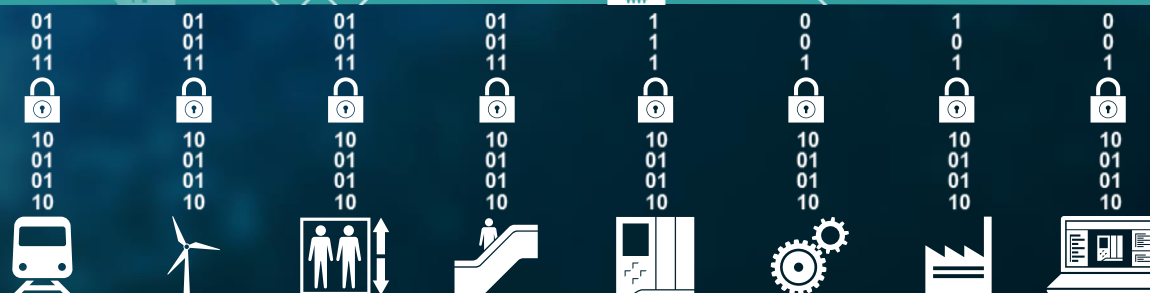
MindSphere

## Edge Management

Edge Device Management, Edge App Management, and Edge App Store

## Connectivity

Connect products, plants, systems, machines and enterprise applications



## Edge Apps

Applications for intelligent data use

## Edge Devices

Secure, future-proof basis for running edge applications

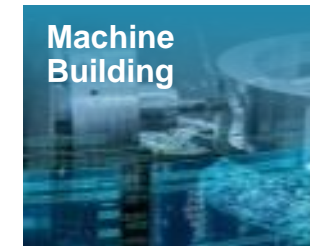
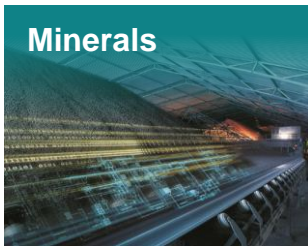
# Using our track record to expand end-to-end domain reach



## Process Industries

## Hybrid Industries

## Discrete Industries



# Profitable growth sustained by cost optimization program of €320m in addition to base productivity

## Main levers




**Integration synergies from Vision 2020+** €40m

- Two Divisions merged into one Operating Company
- Corporate functions shifted to Digital Industries
- BU software synergies from integration



**DI internal process improvements** €130m

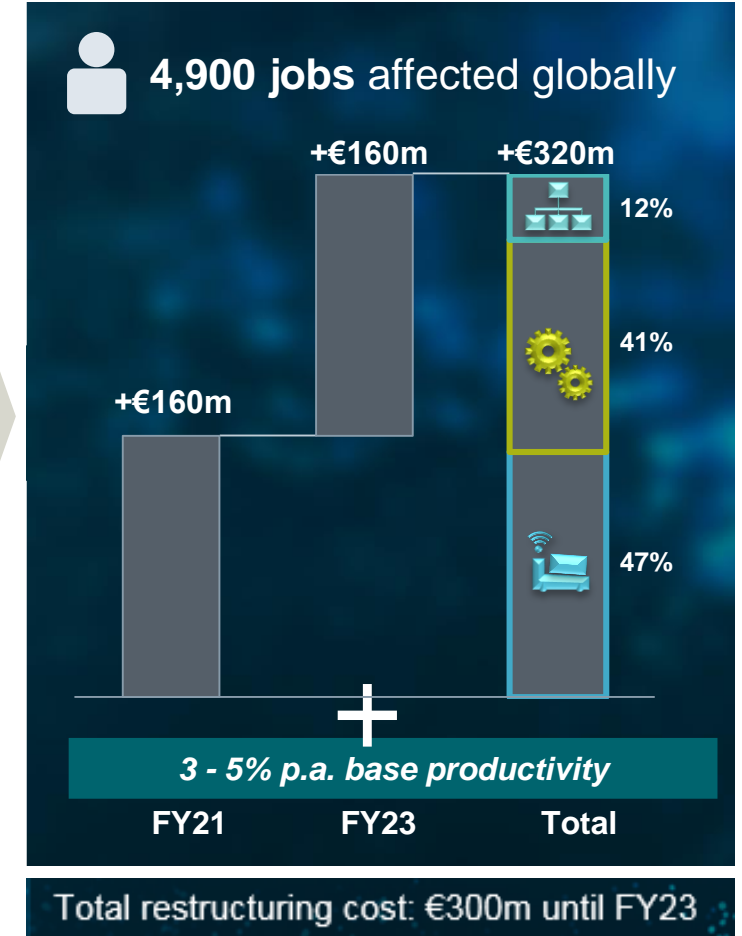
- Optimization of internal regional structure
- Optimization of order management, logistics and controlling processes
- Structural optimization across Digital Industries



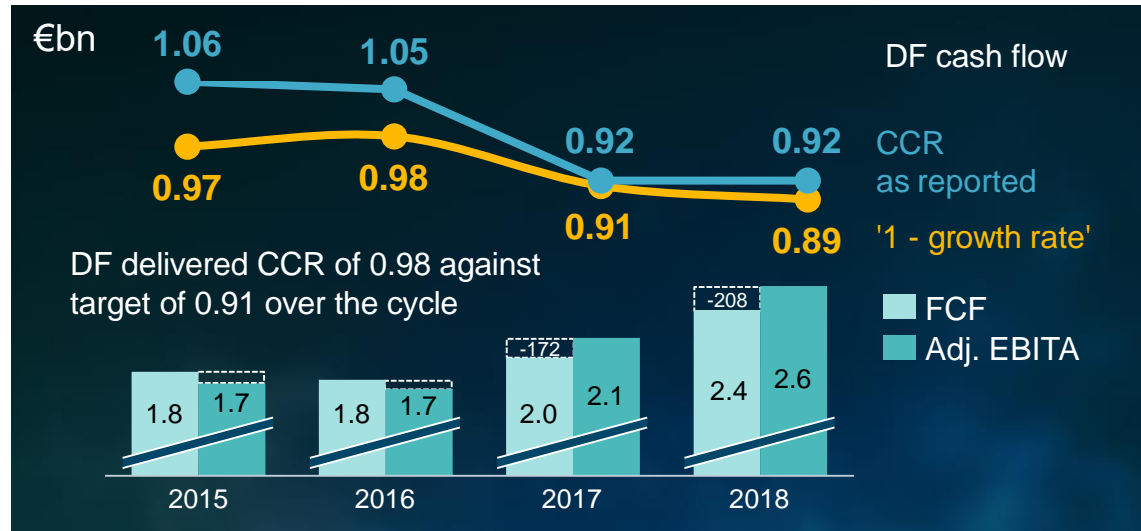
**Internal digitalization** €150m

- Leveraging industrial software and automation methodologies to drive additional efficiency by utilizing Digital Enterprise
- Increased and optimized degree of automation in factories
- Comprehensively digitalized end-to-end PLM processes
- Comprehensive and optimized use of MindSphere

Gross headcount addition of ~12,000 until FY23 to support volume growth over the cycle



# Cash Management initiative ensures cash conversion rate of 1 – growth rate over the cycle



## Key measures

- 33% of DI senior management bonus linked to DI CCR
- Measures in execution to address central and region-specific optimization
- Continuous improvement of turns up to 0.2 in operating working capital planned

## Total supply chain (inventory reduction 2% to 5% p.a)

**Drop Shipment** piloted in the US, creating leaner supply chain and resulting in reduction of local inventories by 20%; further rollout planned

**Digital Inventory Management** improves inventory efficiency in Source and Deliver through data analytics

## Order to Cash

**Continued focus on Overdue Receivables** to remain at a very low level(> 90 days <4%)

**Implementing digital twin** of order management process will further optimize days sales outstanding (DSO)

## Purchase to pay (improve turn rate 5% p.a)

**Extending payment terms** of suppliers, e.g. using external Financing solutions without recourse to Siemens

# Driving a high-performance culture ensures profitable growth



## Passion for industry and high performance culture

- DI targets cascaded to all senior managers
- Frequent employee engagement pulse checks
- 50% of employees with company for 10+ years

## New competencies and new way of thinking through Mergers & Acquisitions

- 7,500 people successfully integrated over last three years
- 98% talent retention after acquisitions

## Systematic succession planning for key functions with focus on diversity

- Continuous pipelining for level 1+2 leadership
- Pool of >1,000 participants from selective leadership excellence and development programs

We deliver flexibility and productivity,  
resulting in customer wins and awards

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## Recent customer wins\*



## Awards



## Hannover Messe 2019

- Biggest single booth at 4,000 m<sup>2</sup>
- 100,000+ visitors
- ~100 delegations
- 8,400+ leads

# DI global management team kickoff Munich, March 11-12, 2019



- 1 Our target is to grow 25% faster than the market.
- 2 We commit to sustain Adj. EBITA margin of 17-23% over the cycle.
- 3 We deliver a CCR of 1 – growth rate over the cycle.