

DIGITAL SERVICES with eCATALOGsolutions - THE VISION OF DIGITALIZATION BECOMES REALITY

ZIMMER GROUP - THE COMPANY

- + founded: 1980
- + founders: Günther Zimmer
Martin Zimmer
- + managing directors: Günther Zimmer
Martin Zimmer
Achim Gauß
Christoph Boog
- + Turnover Zimmer
Group worldwide: ca. 165 M. €
- + Employees
worldwide: 1200

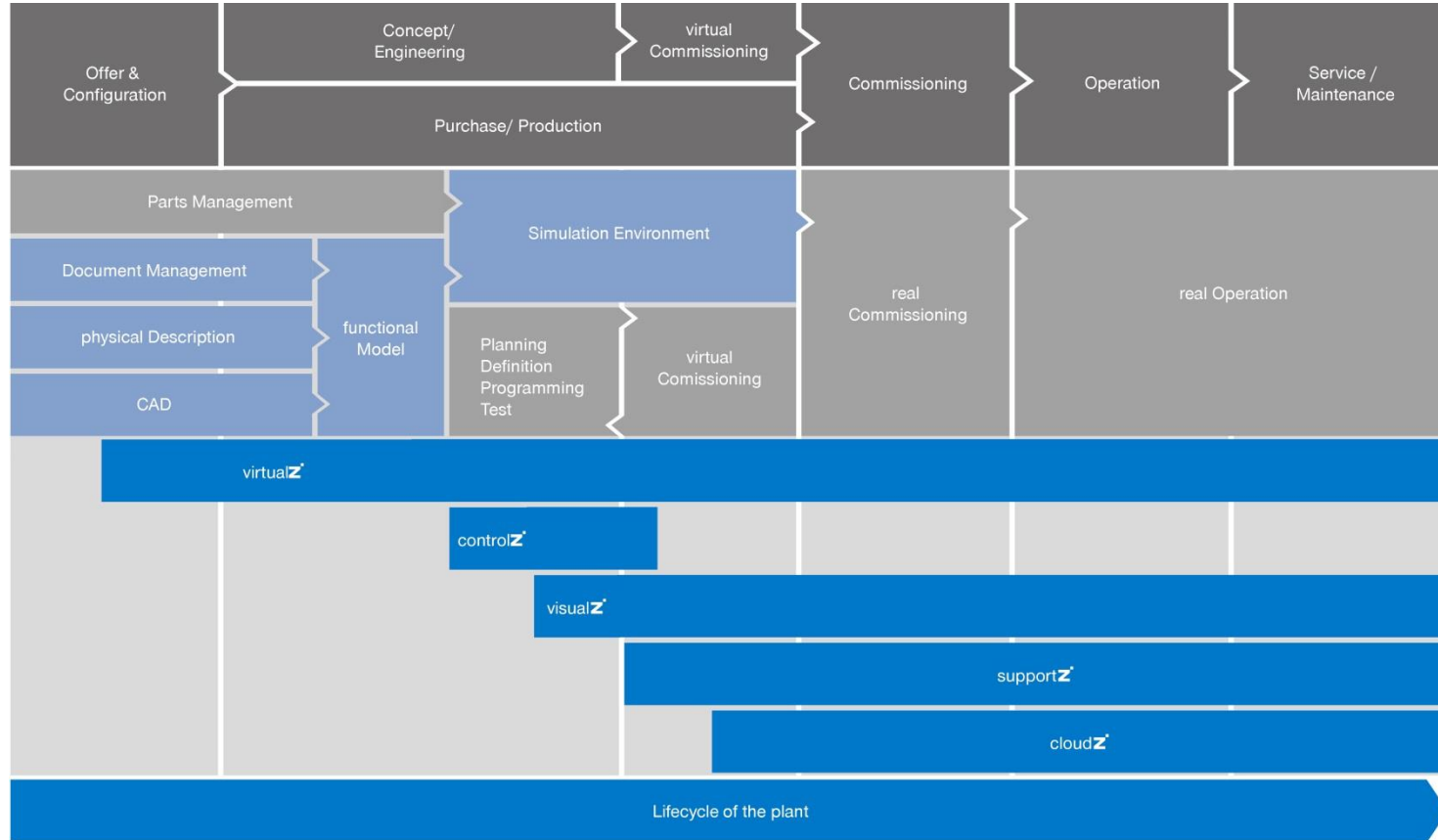


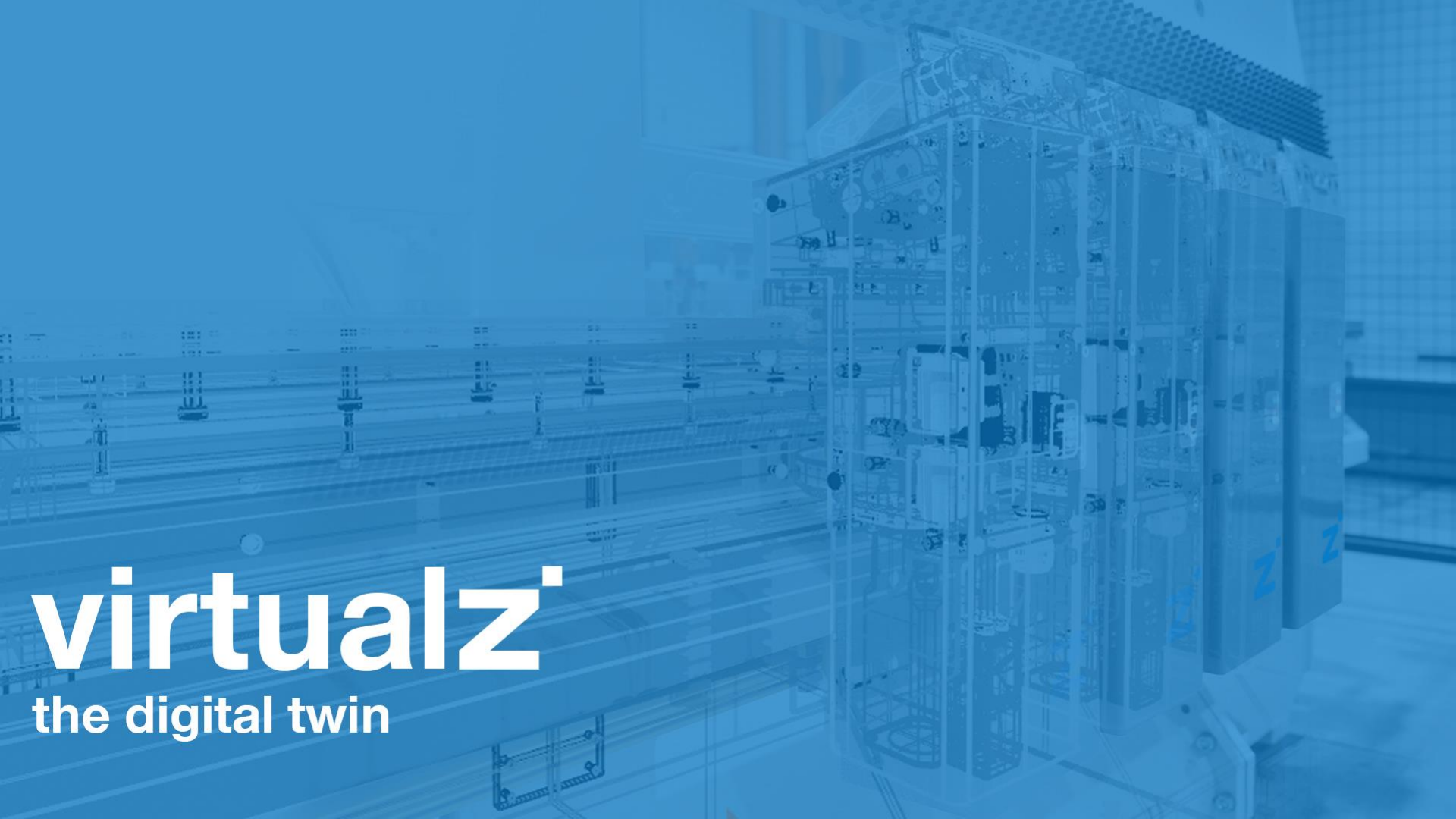


digitaliz

The Digital Services of the Zimmer Group

digitalZ - IN LIFECYCLE CONFIGURATION





virtualz'

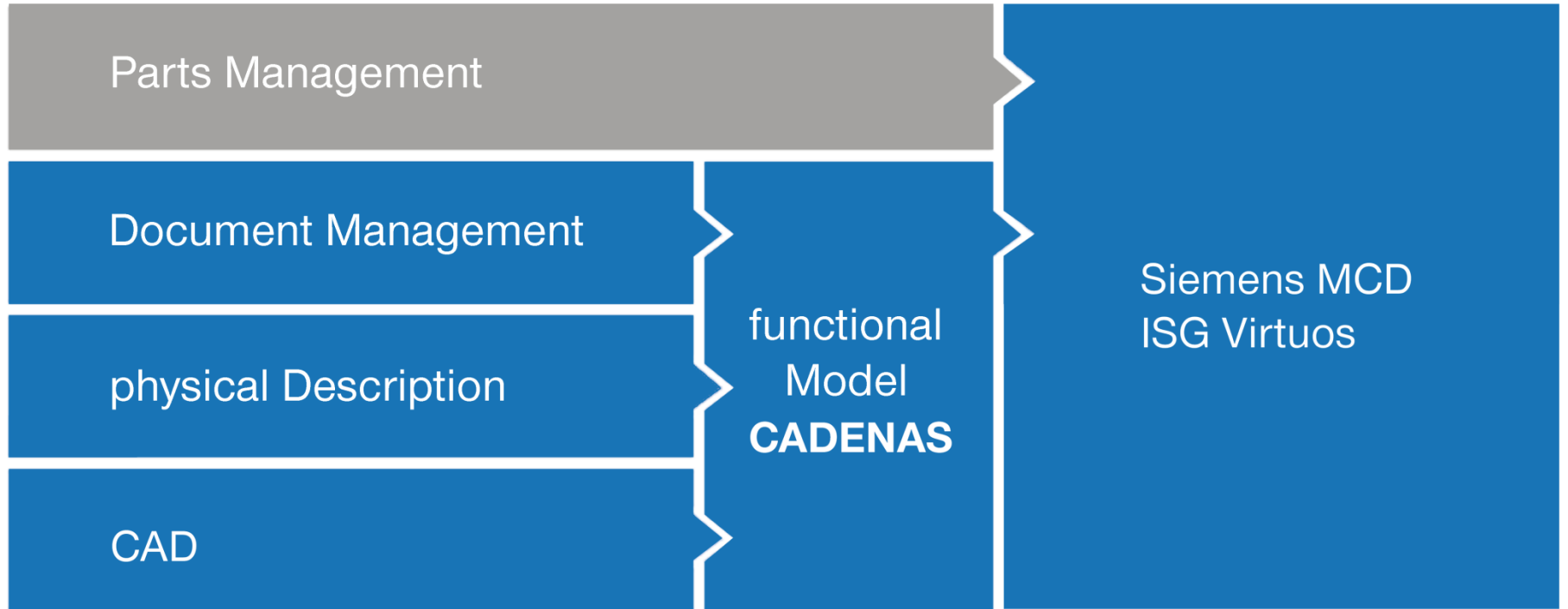
the digital twin

WHAT IS A DIGITAL TWIN?

„ A Digital Twin is a digital representation of a material or digital representation immaterial object from the real world. It does not matter if its counterpart already exists in the real world or will exist in the future. Digital Twins enable a comprehensive data exchange. But they are more as pure data and can also contain models, simulations and algorithms, that describe their counterpart from the real world and its characteristics and behavior.“

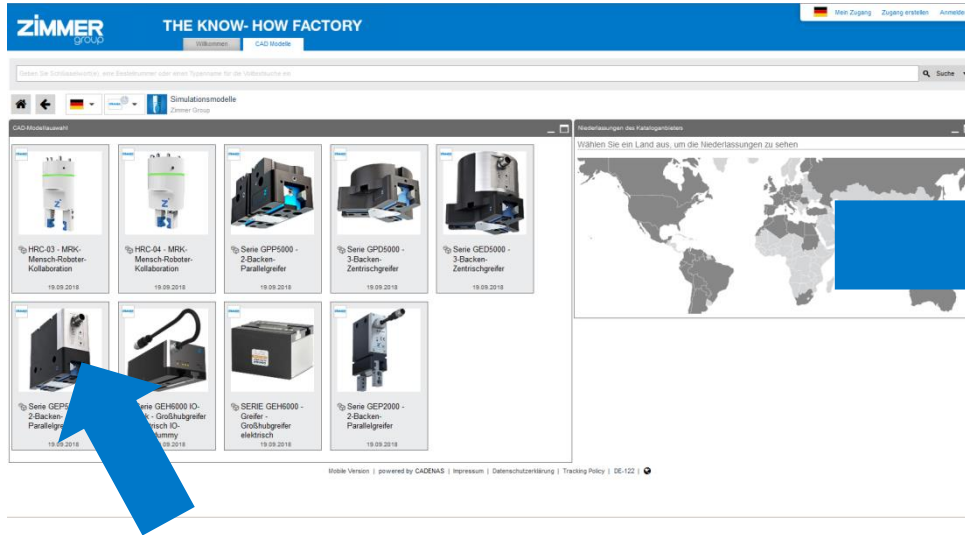
Gesellschaft für Informatik (GI): Digitaler Zwilling

FUNKTIONAL MODEL OF THE DIGITAL TWIN



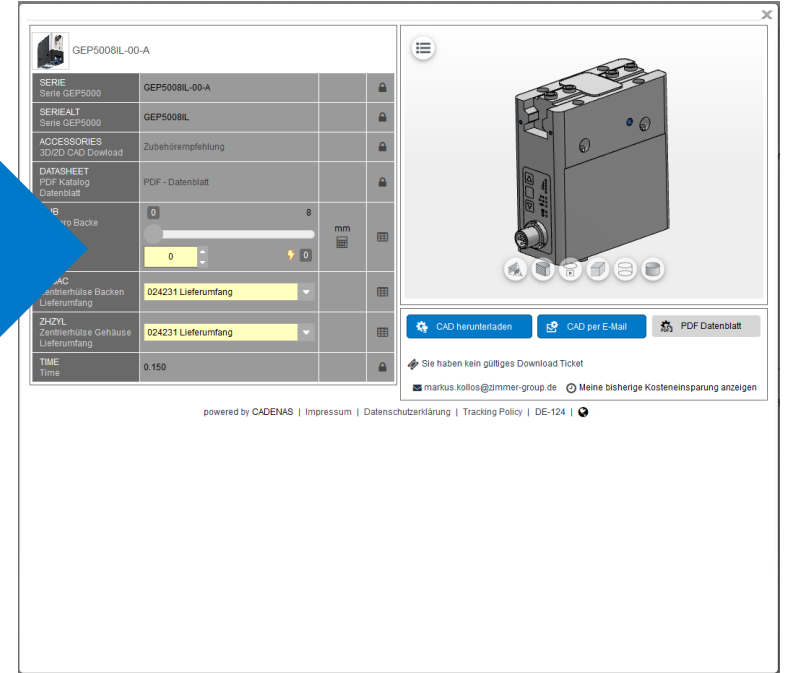
THE WAY TO THE FUNCTIONAL MODEL

1. VIA CADENAS PARTcommunity



CADENAS Website

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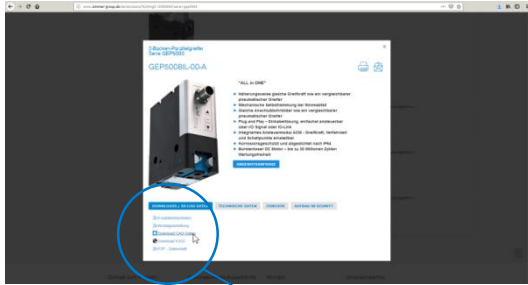


PARTcommunity



THE WAY TO THE FUNCTIONAL MODEL

2. VIA ZIMMER GROUP WEBSITE/ SERVICE OVERVIEW



► **Burstenloser DC Motor – bis zu 30 Millionen Zyklen**
Wartungsfreiheit

ANGEBOTSANFRAGE

DOWNLOADS / 3D-CAD DATEN

TECHNISCHE DATEN

ZUBEHÖR

AUFBAU IM SCHNITT

 Ersatzteilstücklisten

 Montageanleitung

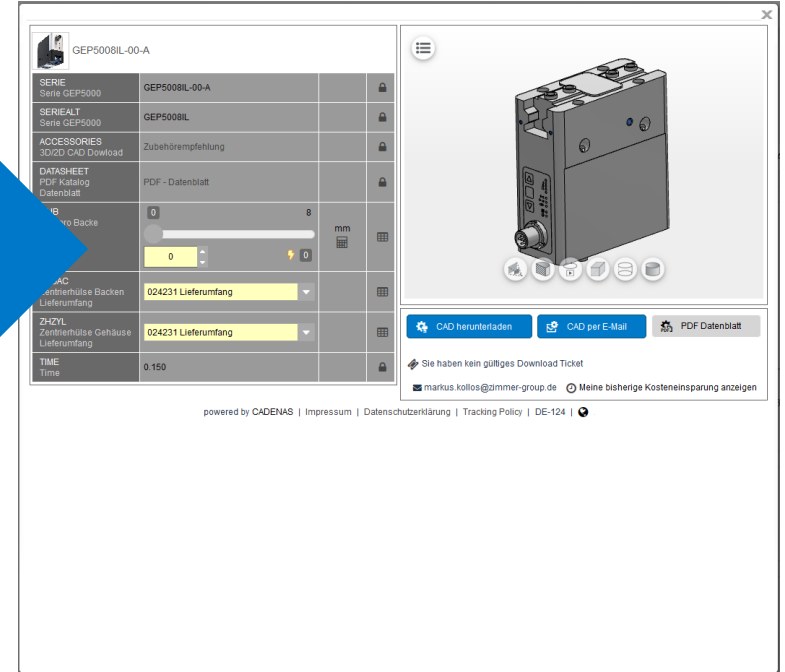
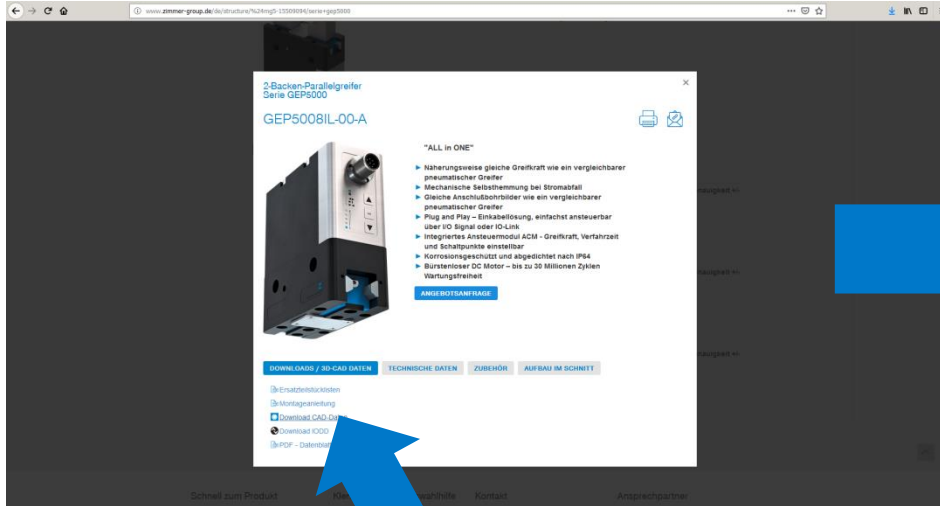
 Download CAD-Daten

 Download IODD

 PDF - Datenblatt

THE WAY TO THE FUNCTIONAL MODEL

2. VIA ZIMMER GROUP WEBSITE AS EMBEDDED SOLUTION

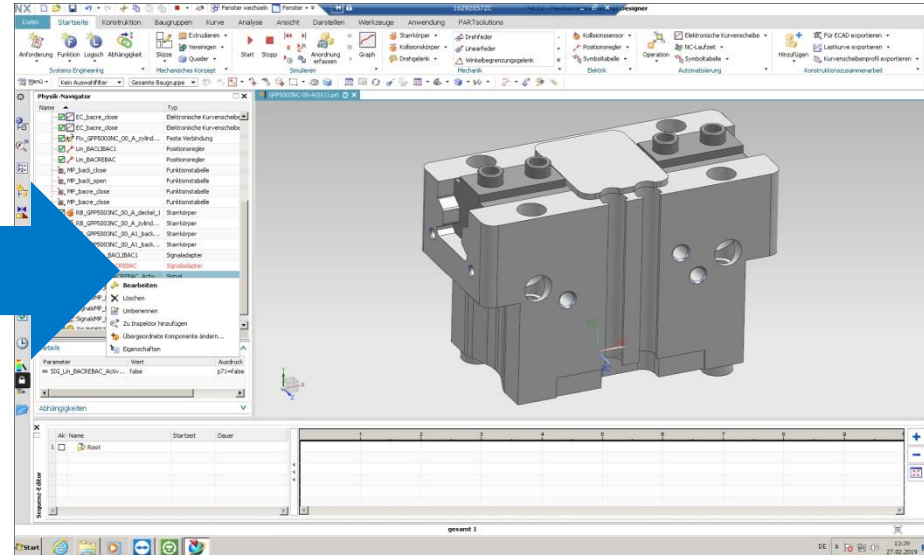
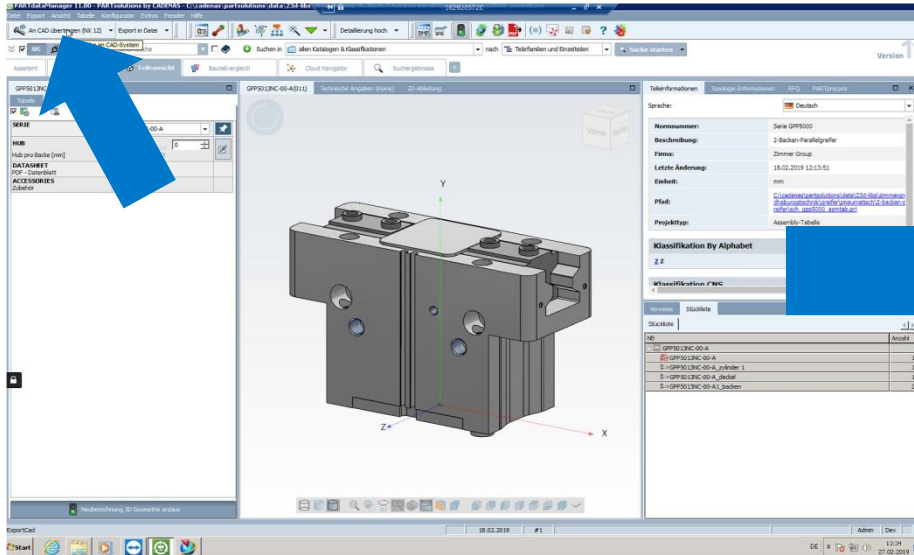


ZIMMERgroup Website

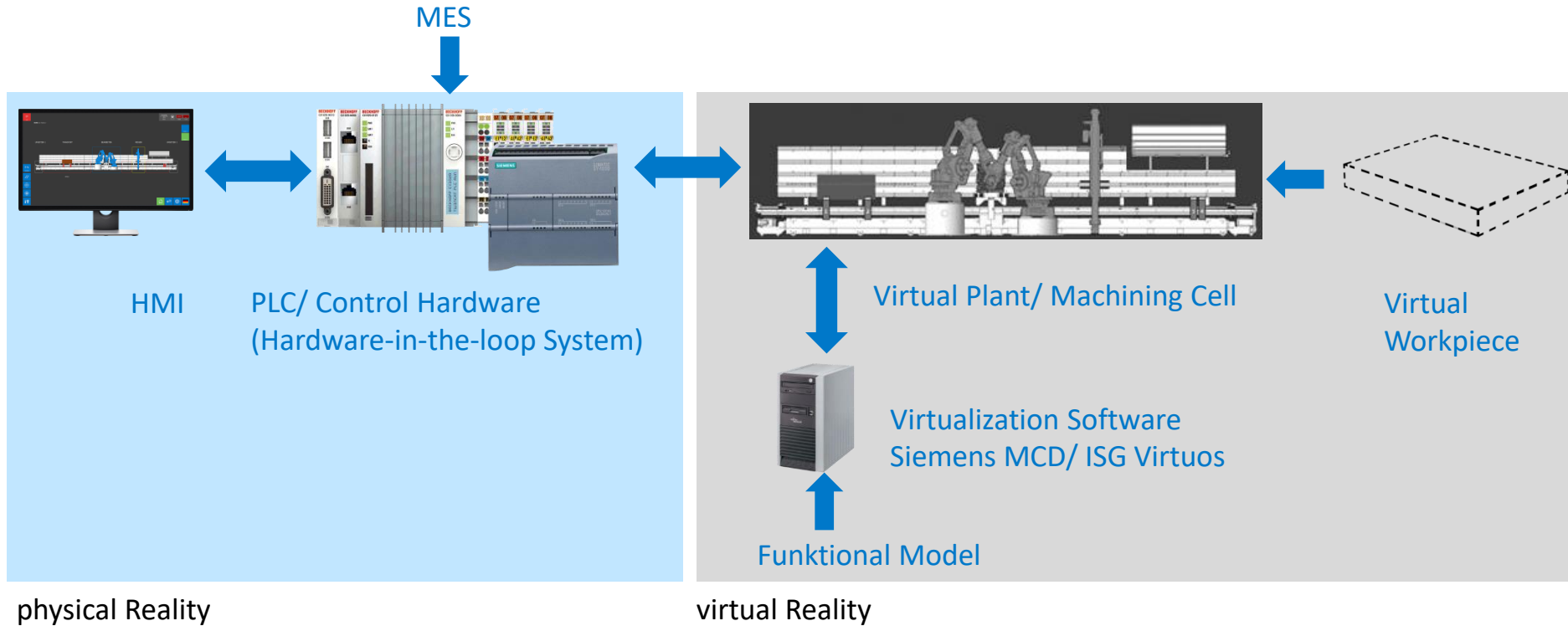
PARTcommunity

THE WAY TO THE FUNCTIONAL MODEL

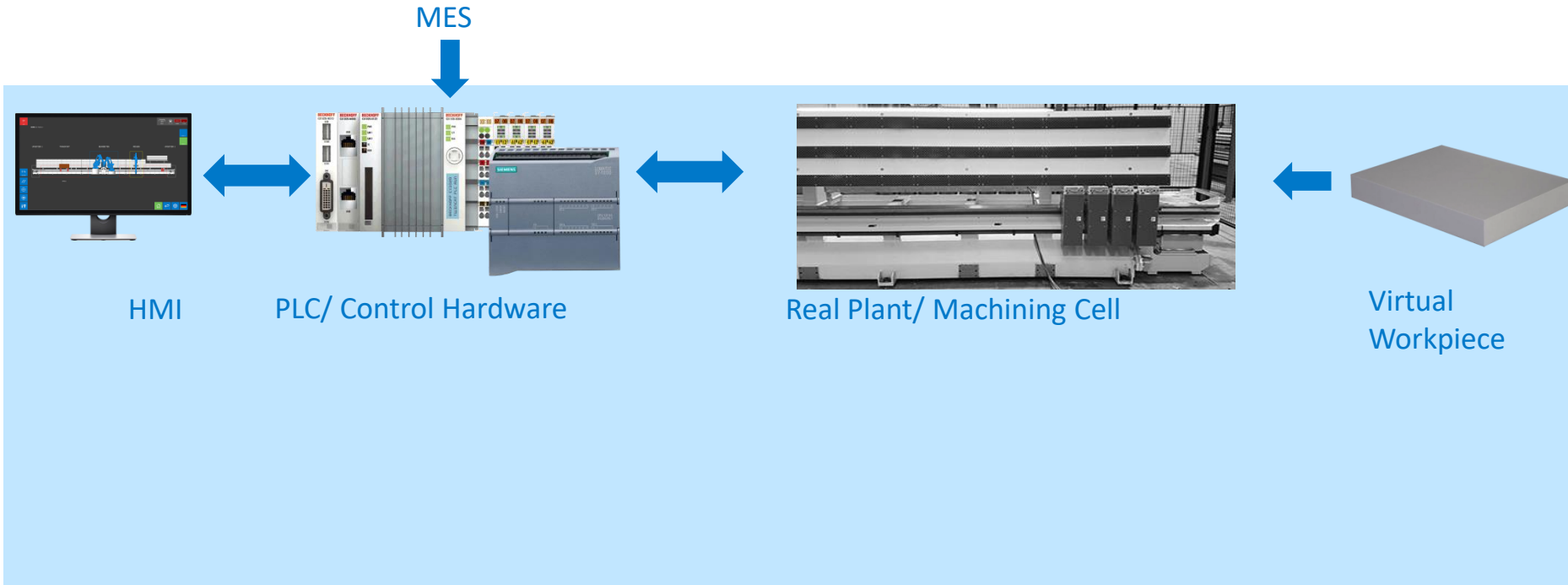
3. VIA SIEMENS NX



SCHEMATIC CONSTRUCTION OF THE DIGITAL TWIN

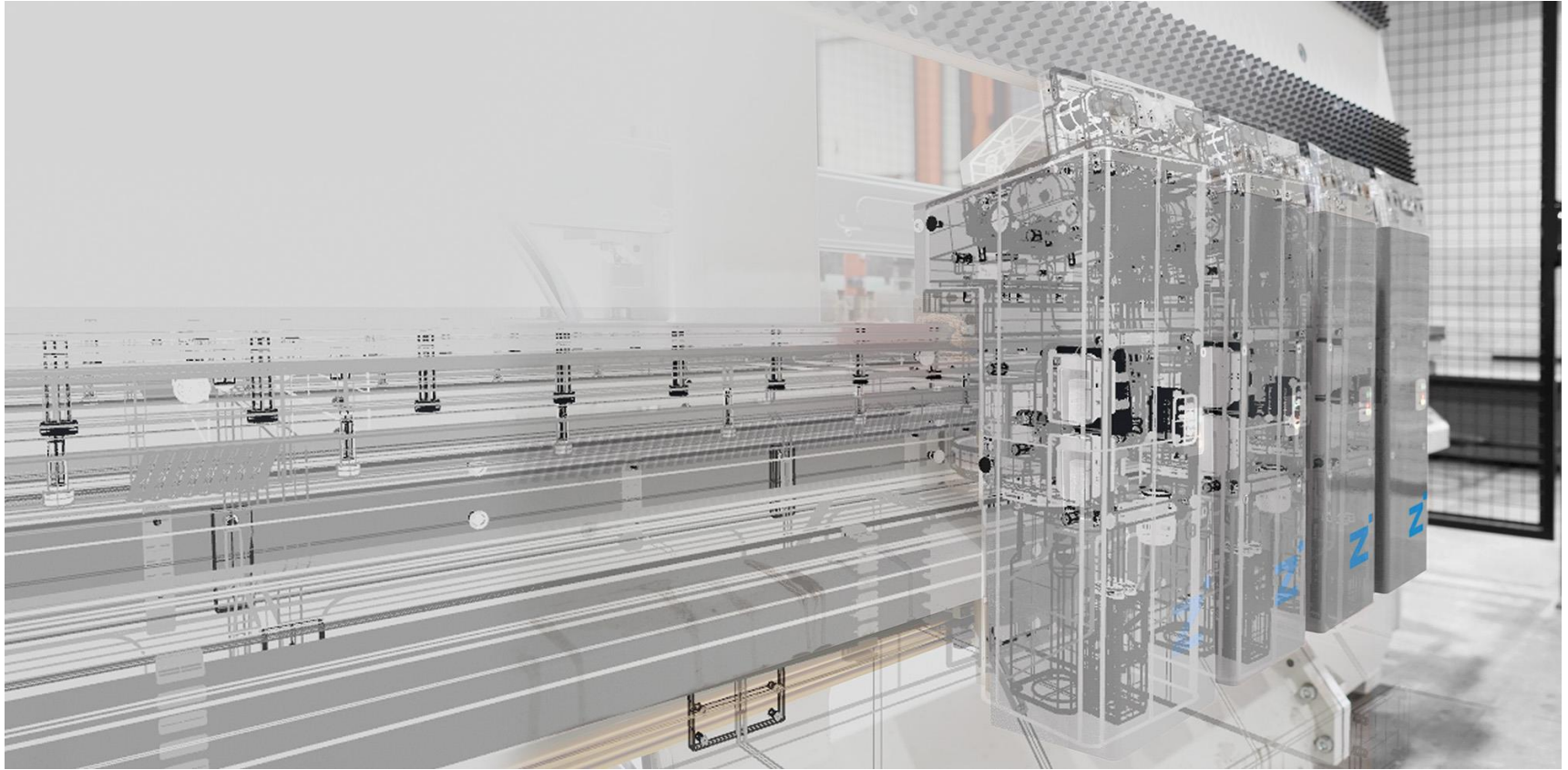


SCHEMATIC CONSTRUCTION OF THE REAL SYSTEM

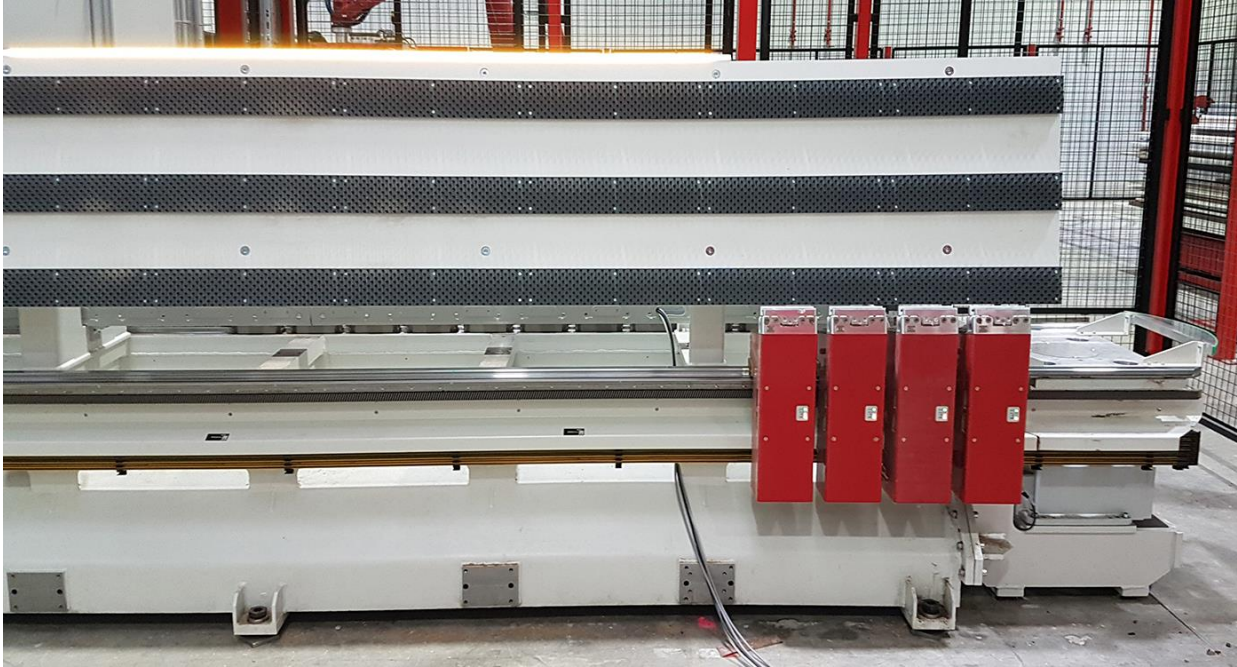


physical Reality

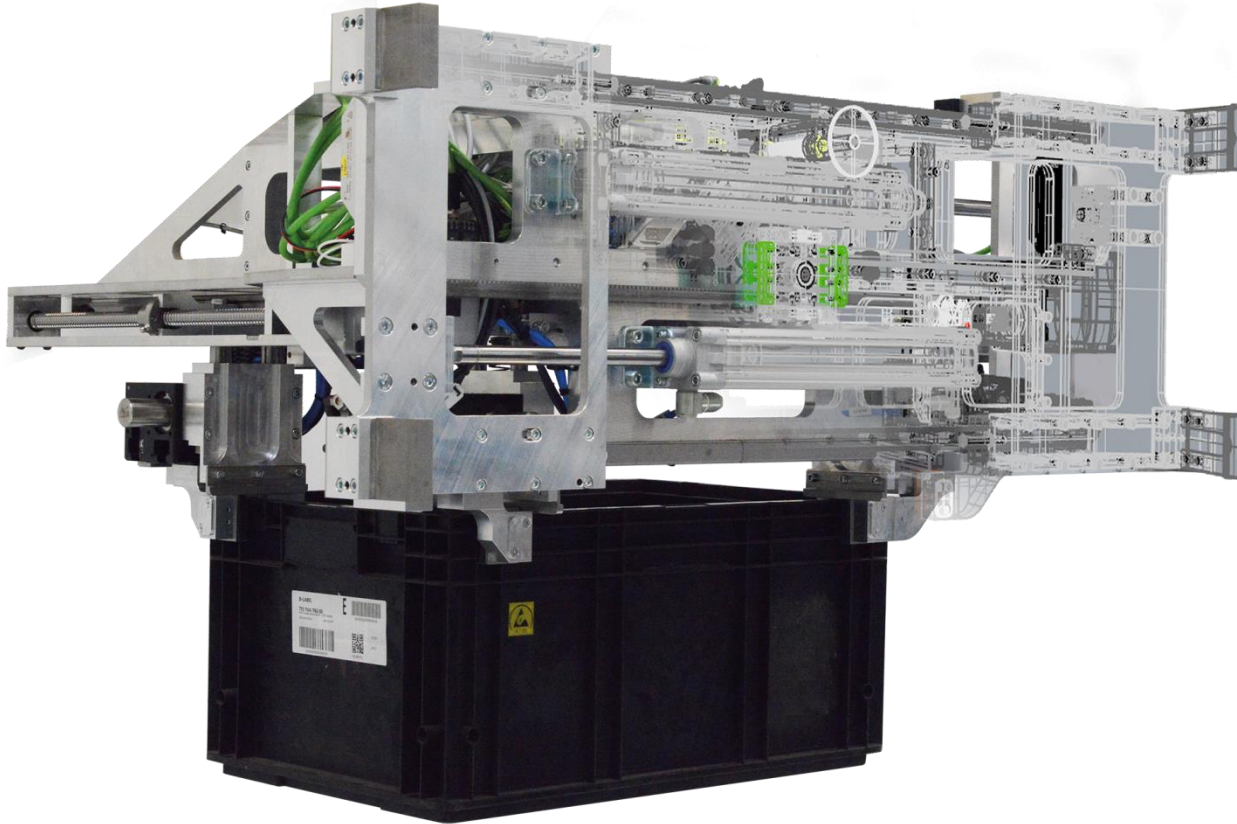
USE CASES - MACHINING CELL/ WOODWORKING INDUSTRY



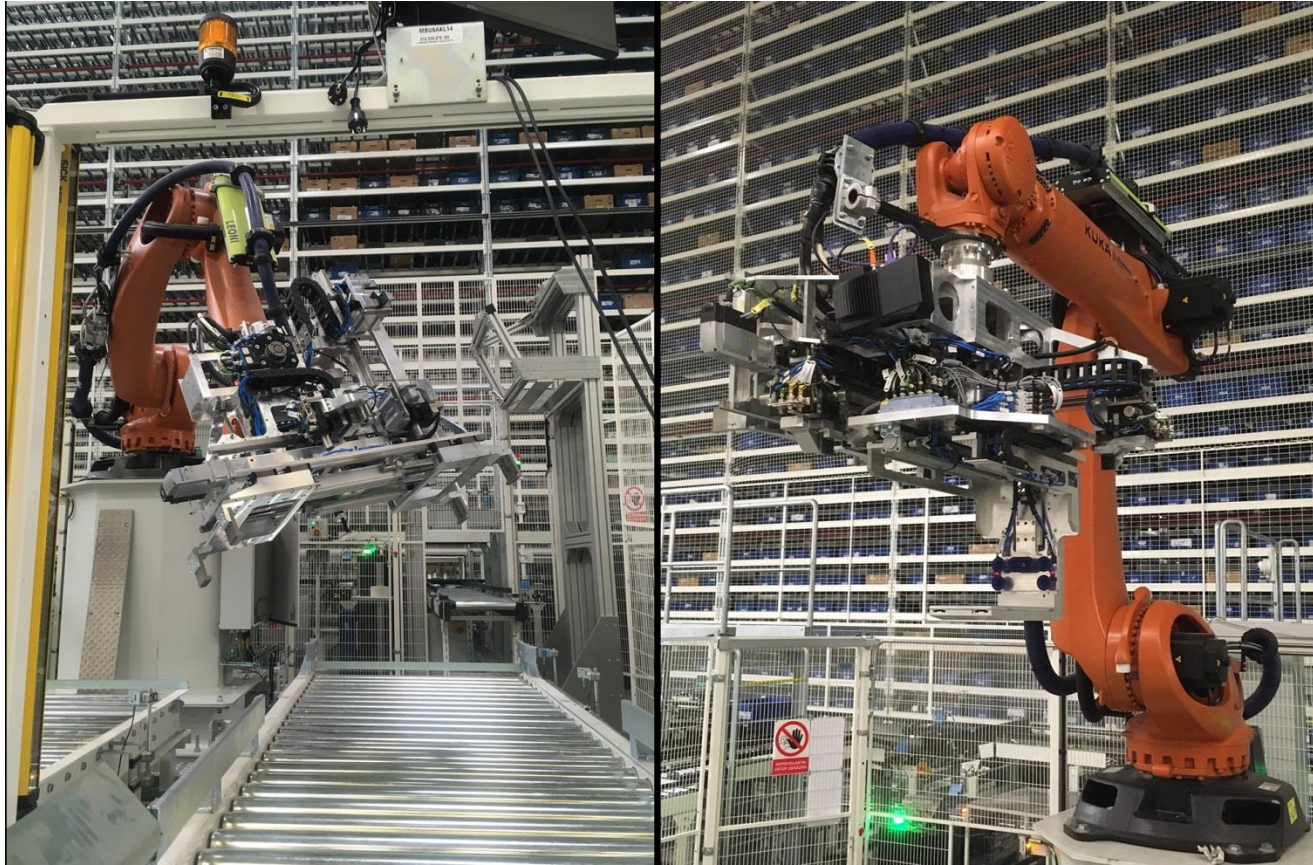
USE CASES - MACHINING CELL/ WOODWORKING INDUSTRY



USE CASES - INTRALOGISTIC/ AUTOMOTIVE OEM



USE CASES - INTRALOGISTIC/ AUTOMOTIVE OEM



USE CASES - INTRALOGISTIC/ AUTOMOTIVE OEM



virtualZ - ADVANTAGES AT A GLANCE

- **Digital twin of the product** / Advantages for the system builder
 - Simulation and validation of product properties
 - Test and optimization during the development phase / parallelization of processes
 - faster product innovation
 - higher product quality
- **Digital twin of the production/** Advantages for the plant manufacturer and operator
 - PLC code generation
 - virtual Commissioning
 - error-free operation from the beginning
 - higher product availability
 - Material flow and runtime in real time simulation
- **Digitale Zwillung of performance** / Advantages for the operator
 - predictive maintenance planning strategies
 - optimize energy consumption
 - verify statistical analyzes
 - improve production efficiency

cloudz'

full-service Cloud



cloudZ - ON DIFFERENT PLATFORMS



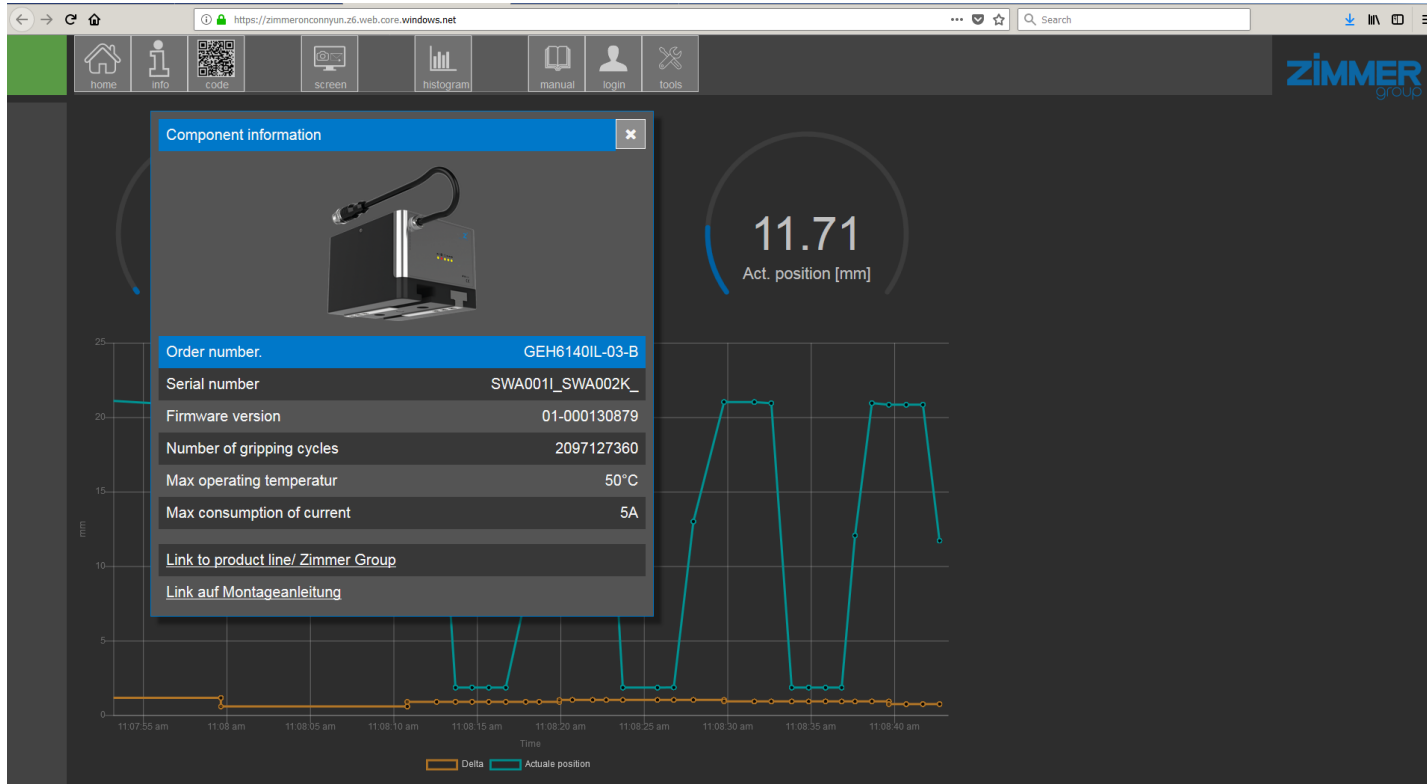
connqun



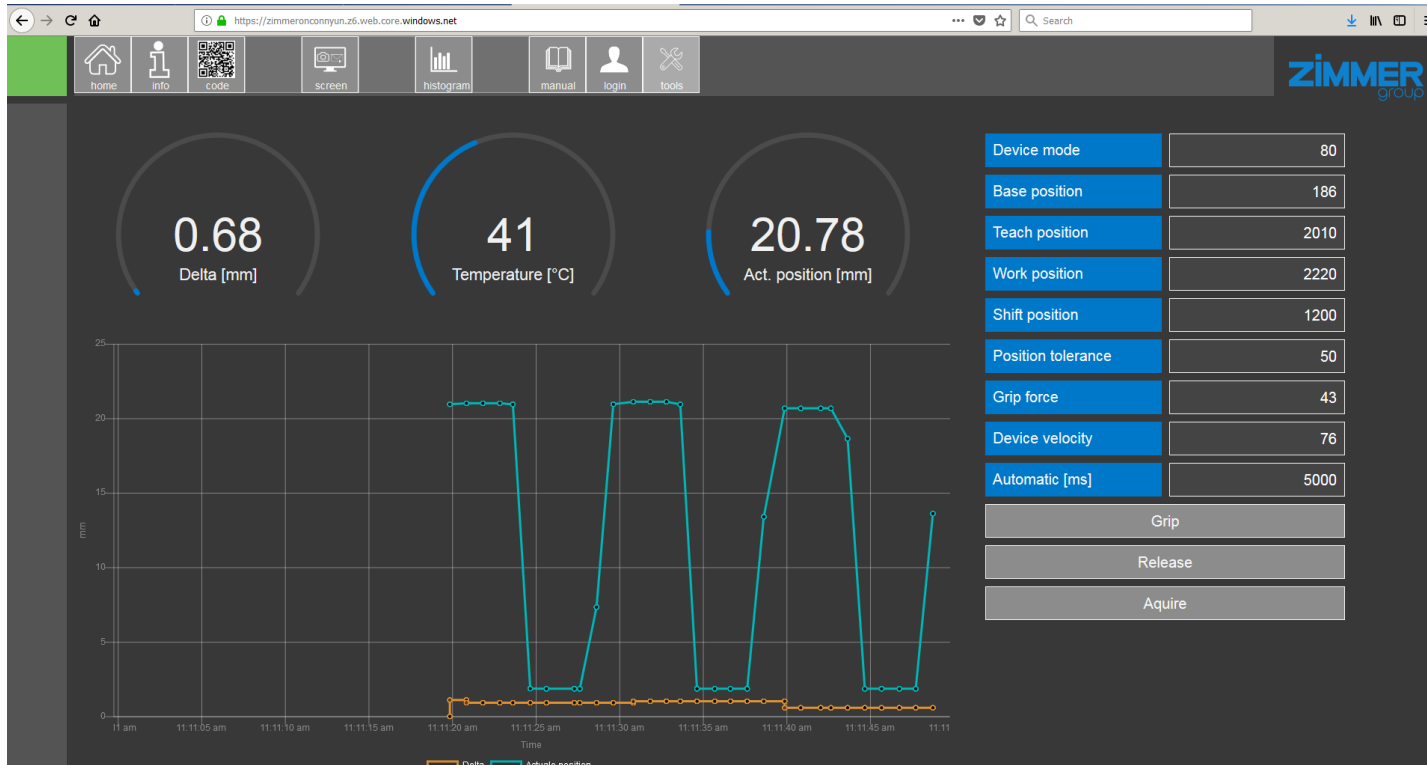
cloudZ - ON DIFFERENT TARGET SYSTEMS



cloudZ - ONLINE HELPDESK & DIAGNOSIS



cloudZ - ONLINE HELPDESK & DIAGNOSIS



cloudZ - ADVANTAGES AT A GLANCE

- Cloud infrastructures are characterized by high computing power and storage capacity predestined to generate **additional benefits from status and process data**
- prerequisite are **communicative components** and a **data infrastructure**
- the added value of cloud services is based on the fact that components in machines / plants provide far more **additional data** than their dedicated application
- the **linking** and **plausibility** of this data generates the **added value**
- the launch is **condition monitoring / predictive maintenance** and **operational statistics** from components to entire production plants

visualZ'

HMI for components and systems



visualZ - HMI FOR COMPONENTS



visualZ - HMI FOR COMPONENTS



visualZ - HMI FOR SYSTEMS

The screenshot displays the visualZ HMI interface for a manufacturing system. The main area shows a 3D model of a production line with five stations: UMSETZER 1, TRANSPORT, BEARBEITEN, MESSEN, and UMSETZER 2. The BEARBEITEN station is highlighted with a blue dashed box, and the MESSEN station is highlighted with a yellow dashed box. A red dashed box highlights the transport area. A blue box on the left indicates a 5% Override. The top right corner shows the date and time (Donnerstag, 27. September 2018, 09:44), a user profile icon, a LOGOUT button, and the text ADMIN 1.0.0.0. The bottom right corner features a home button, a back button, a settings gear, and a German flag. The bottom left corner has a vertical toolbar with icons for home, play, stop, and information.

37
LOG

HOME || Home 2

Donnerstag
27. September
2018
09:44

LOGOUT
ADMIN 1.0.0.0

Home 1
Home 2

UMSETZER 1 TRANSPORT BEARBEITEN MESSEN UMSETZER 2

5 %
Override

784613

Home Back Settings Germany

visualZ - HMI FOR SYSTEMS

37
LOG

Donnerstag
27. September
2018
09:45



LOGOUT

ADMIN 1.0.0.0

BEARBEITEN || Bohrkopf

1

5 %
Override

Mounted

Velocity Temperatur Strom

Manual mode on Tool out

Werkzeug

Beschreibung

MFU	<input type="text"/>	Schaft	<input type="text"/>	Valve ID	<input type="text"/>
Kunden ID	<input type="text"/>	Typ	<input type="text"/>	Cycle	<input type="text"/>
Position X	<input type="text"/> 0	Position Y	<input type="text"/> 0	Position Z	<input type="text"/> 0
Offset X	<input type="text"/> 0	Offset Y	<input type="text"/> 0	Offset Z	<input type="text"/> 0
Speed H1	<input type="text"/>	Speed H2	<input type="text"/>	Speed H3	<input type="text"/>
Speed Working	<input type="text"/>	Speed rotation	<input type="text"/>	Stroke	<input type="text"/>
Cutting width	<input type="text"/>	Length	<input type="text"/> 0	Diameter	<input type="text"/> 0
Clockwise rotation	<input type="checkbox"/>	Orient. tool	<input type="text"/>	Locked	<input type="checkbox"/>

Bearbeiten

Übersicht

Jobs

MFU

Vacuum

Robot Workp.

Teach mode

Parameter

visualZ - ADVANTAGES AT A GLANCE

- easy and uncomplicated **access to components and systems**
- **ergonomic and clearly structured user interfaces**
- **low training requirements** for the operating personnel
- **minimization of operator errors** due to optimal usability
- highest possible **productivity** and **efficiency**
- contribution to **OEE maximization**

controlz¹

functional software elements

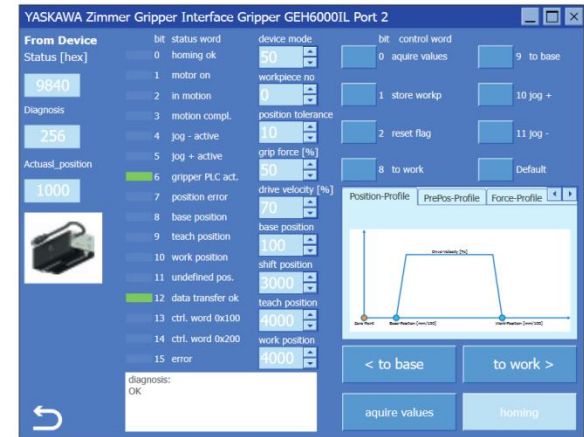
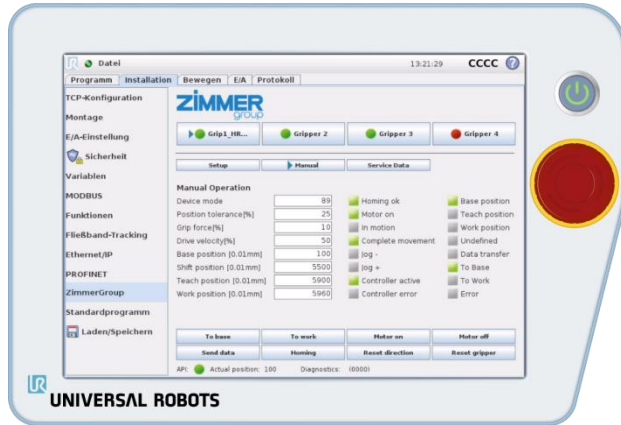


controlZ – FUNCTIONAL SOFTWARE ELEMENTS FOR PLC- AND ROBOTS

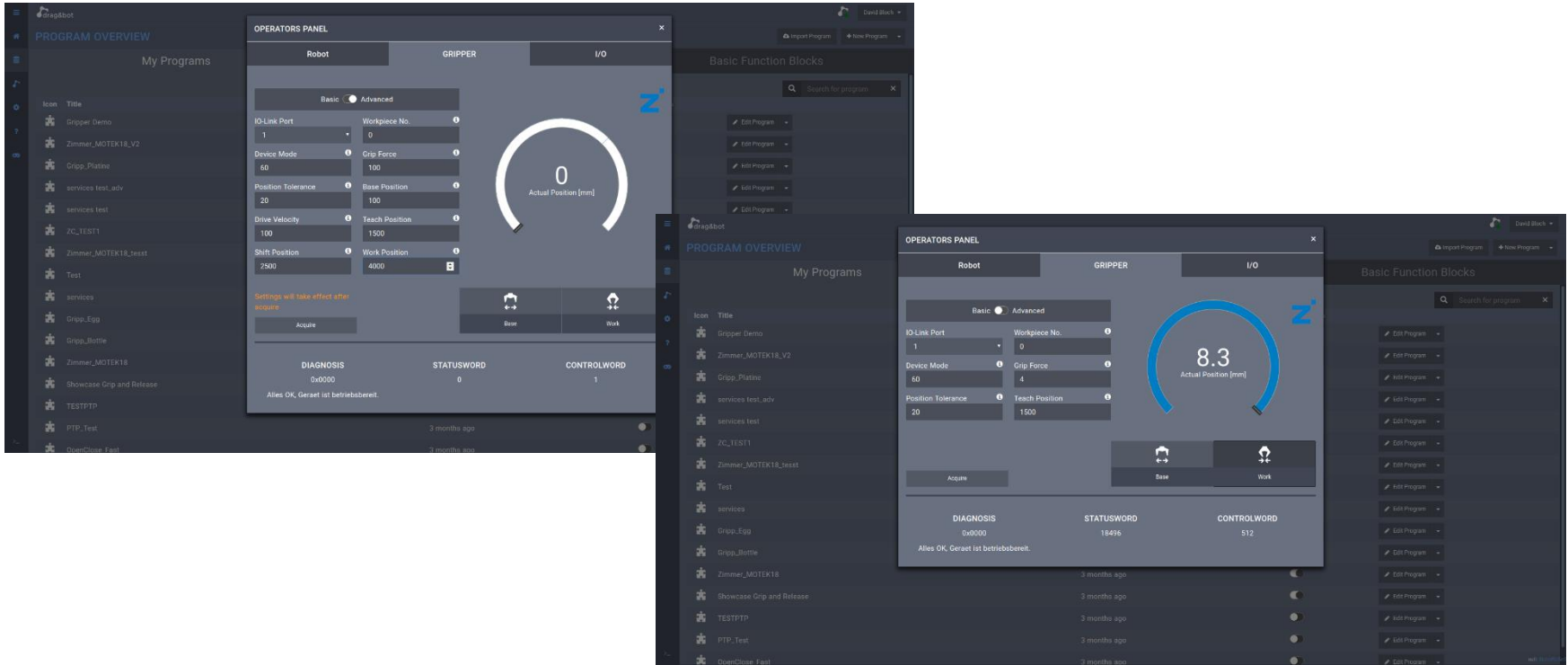
Greifer auf Work- und Base Position fahren

Advanced Gripping Bibliothek importieren

controlZ – FUNCTIONAL SOFTWARE ELEMENTS FOR PLC- AND ROBOTS



controlZ – FUNCTIONAL SOFTWARE ELEMENTS FOR PLC- AND ROBOTS



controlZ - ADVANTAGES AT A GLANCE

- **simple and uncomplicated implementation** of components and systems
- **shorter commissioning times**
- **minimization of operator errors** due to **optimal usability**
- contribution to **OEE maximization**

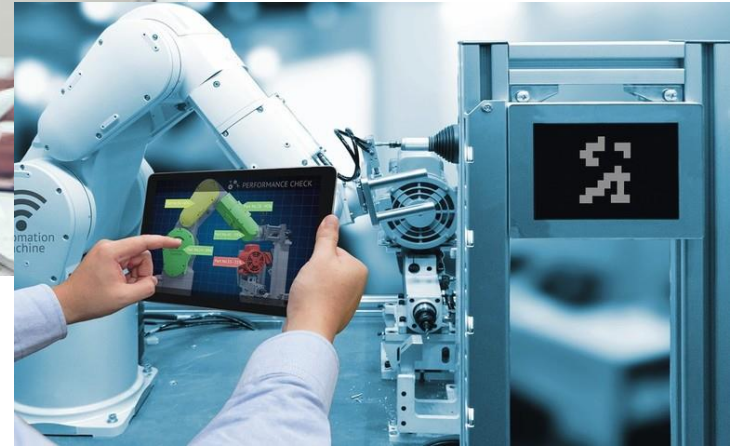
supportZ¹

Service - allways and everywhere

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supportZ - SERVICE ALWAYS AND EVERYWHERE



supportZ - ADVANTAGES AT A GLANCE

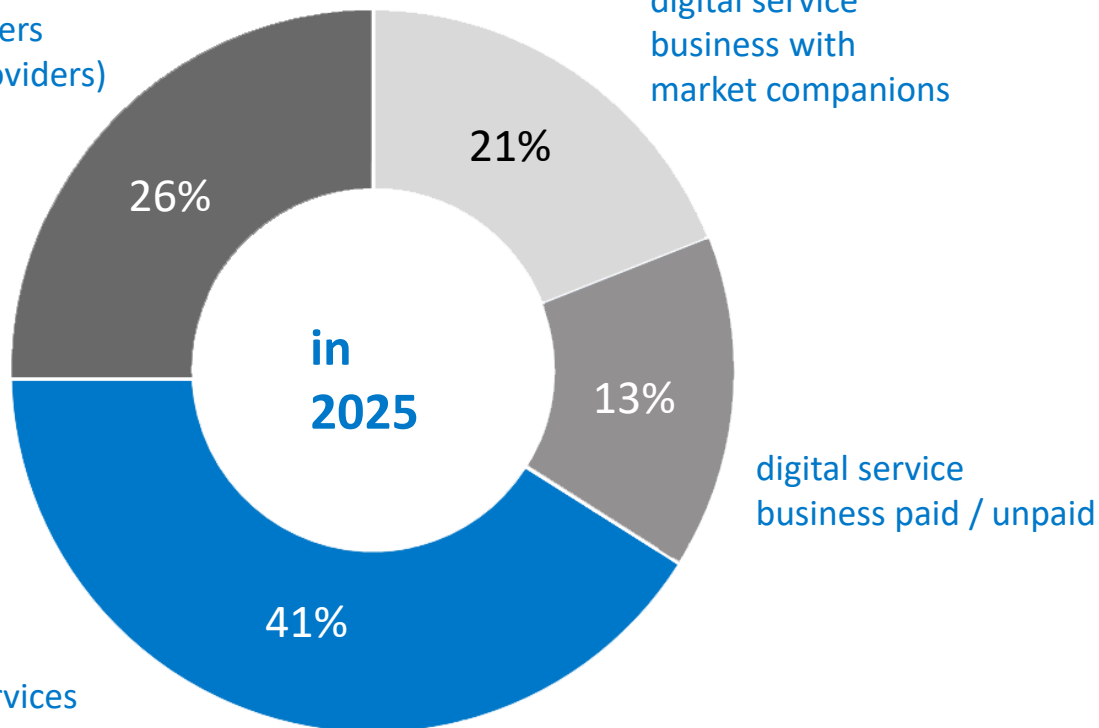
- fast uncomplicated **support worldwide**
- always the **competent expert in direct dialogue**
- access to the **component** and **plant history**
- access to **Digital Twin** and **in-advance production** as payable services
- **maximum data security** through encrypted transmission of systems and process parameters

digitalZ - DIGITAL SERVICES AND FUTURE BUSINESS MODELS

open digital platform
(integrated offers
third-party providers)

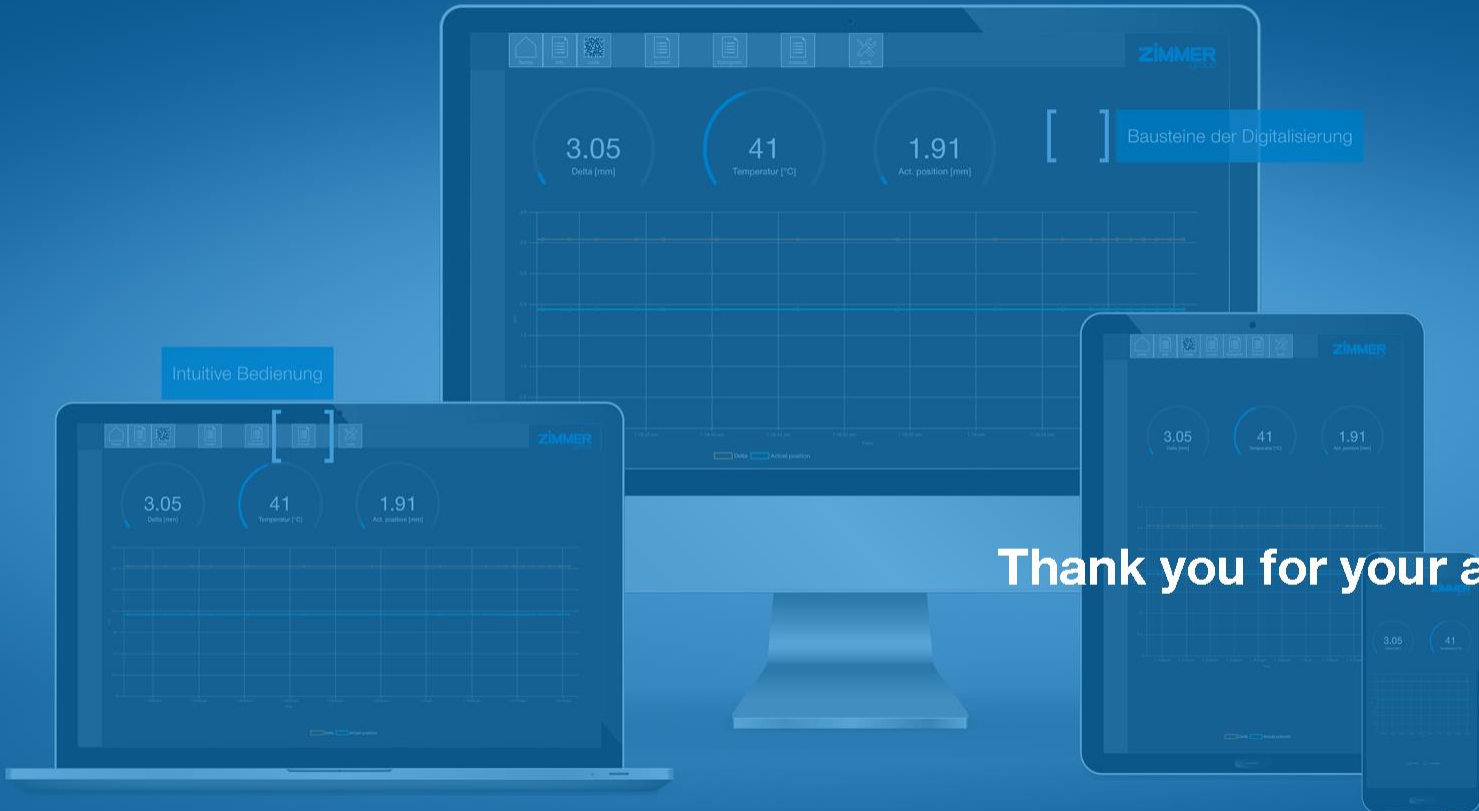
digital service
business with
market companions

globale market volume
of Digital Services:
98 Mrd. USD (2016)
987 Mrd. USD (2025)



Quelle: Wieselhuber & Partner, McKinsey

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Thank you for your attention