Zander Aachen Applications

ZANDER

ZANDER AACHEN
H. Zander GmbH & Co. KG
Am Gut Wolf 15
52070 Aachen

ZANDER AACHEN

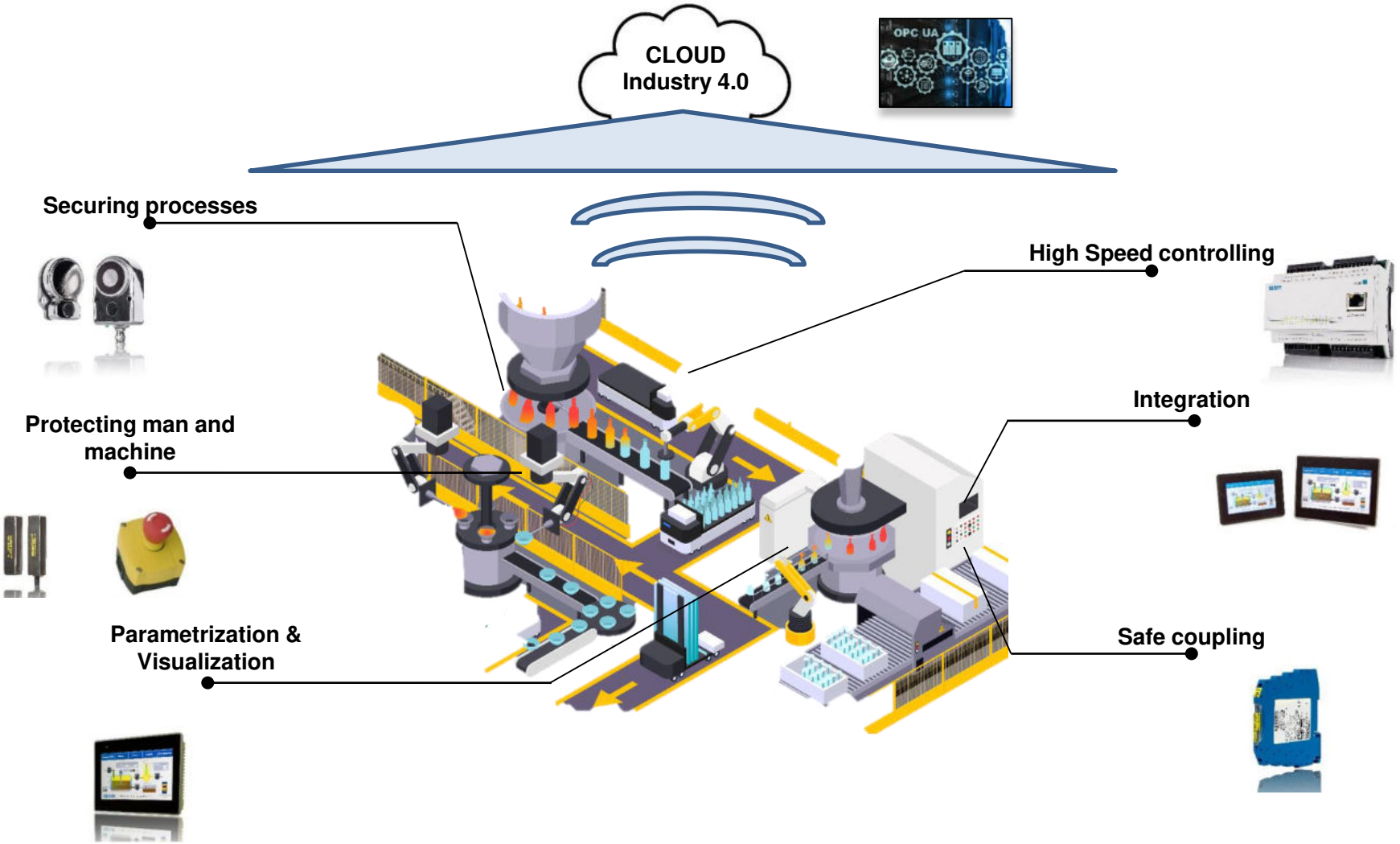
SAFETY

AUTOMATION

ENGINEERING

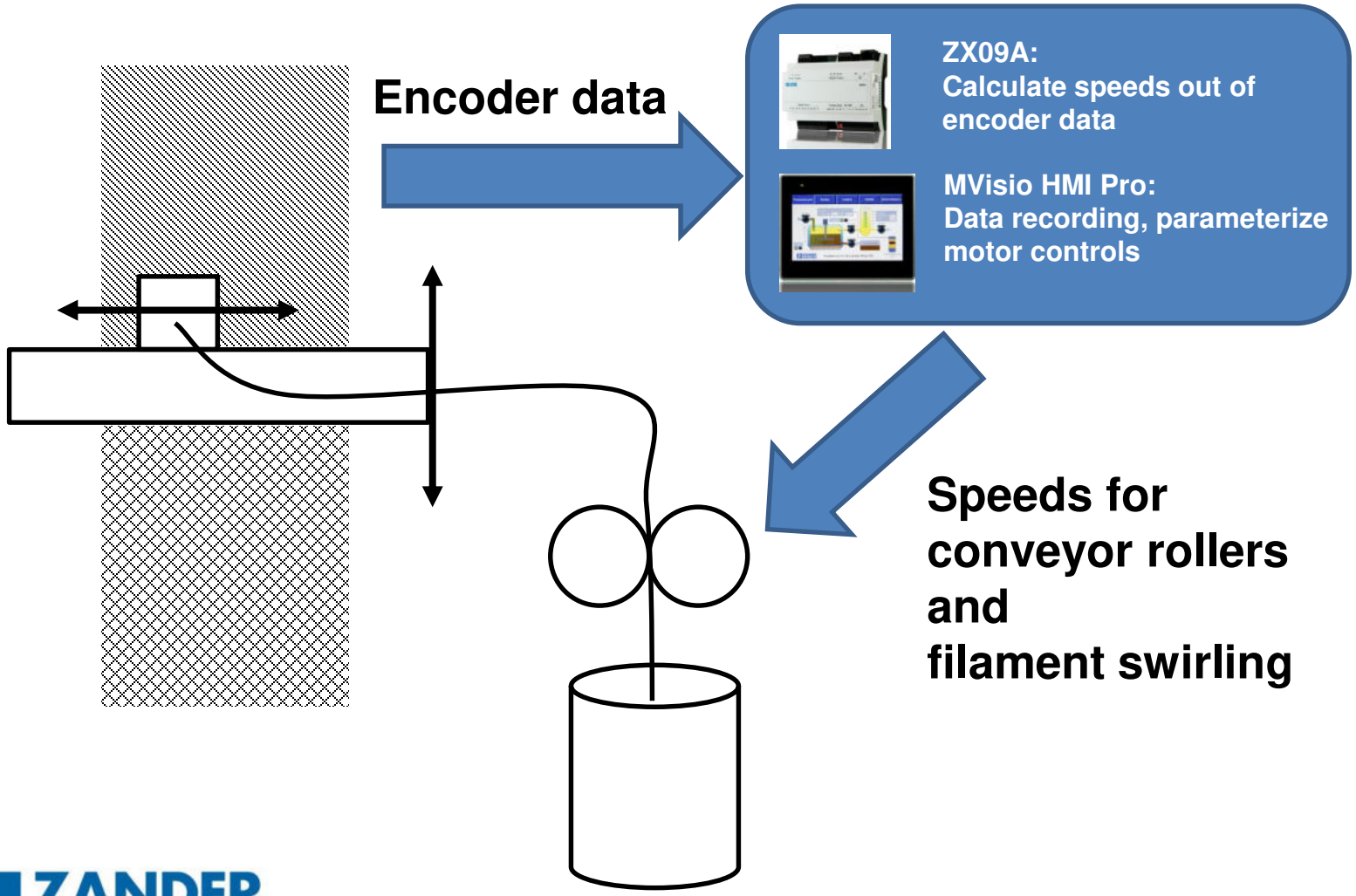
ZANDER

Zander Aachen – products in field



Engineering

Application 1: Conveyor rollers for ITA | RWTH AACHEN UNIVERSITY in textile industry



Engineering

ZANDER AACHEN

The Zander solution

Encoder data

- Zander controller ZX09A
  - Recording the SSI encoder data
  - Calculating the conveyor speed
  - Transmission to the HMI

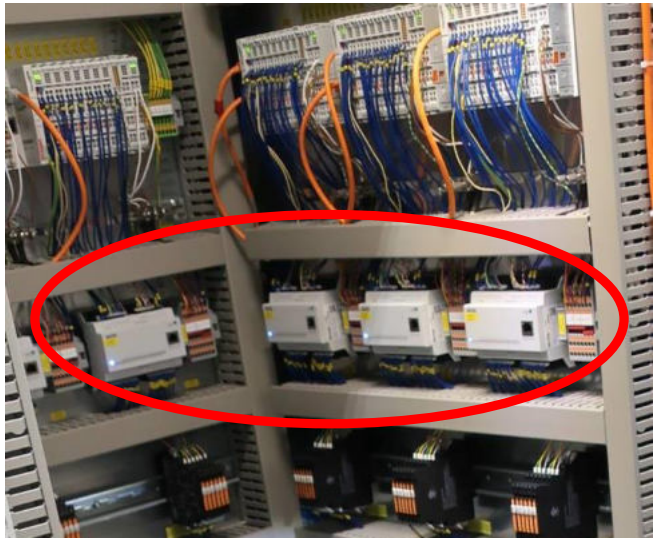
Conveying speed

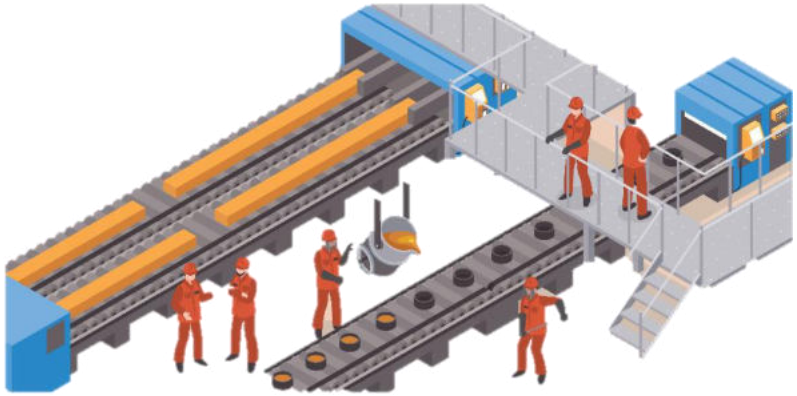
- HMI MVisio 7 Pro
  - Recording the ZX09A data
  - Calculating the speeds
    - Dependent on parameterization
  - Parameterization (diameter of the rolls)
  - Control of the motors

Speeds

Engineering

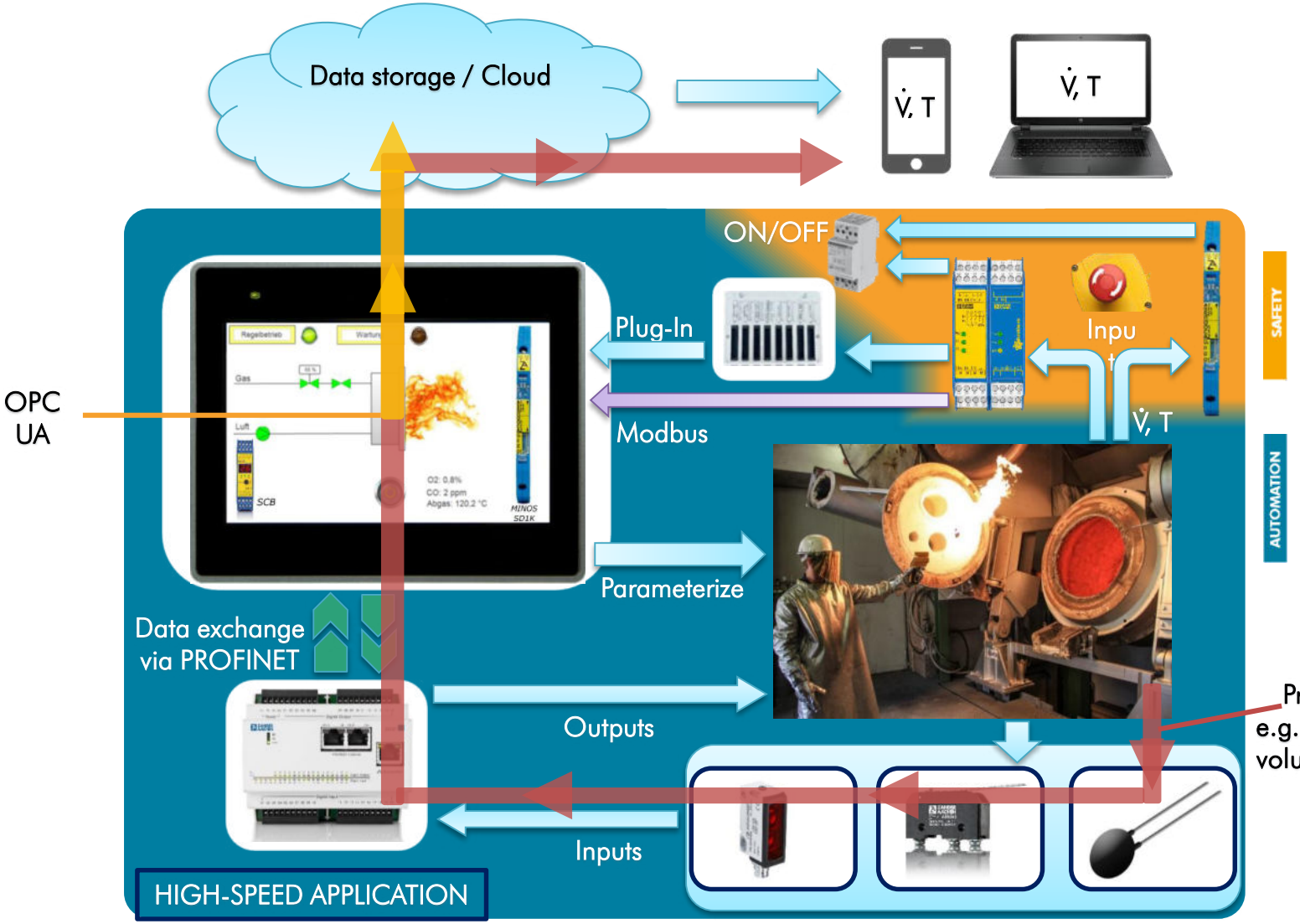
Application 2: Control tasks in a rolling mill in steel industry



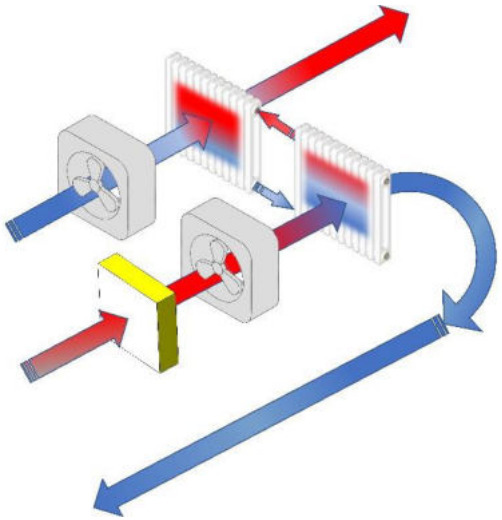


- Motor control in a rolling mill
  - Manual operation of the plant with multiple ZX20T
  - Contollers integrated in control cabinet
  - Control of multiple high-power converters
  - Sensoring and processing of the used materials
  - Highly accurate and synchronous signal generation

Outlook - complete integration Safety & Automation



Application 3: Control and regulation system for air conditioners

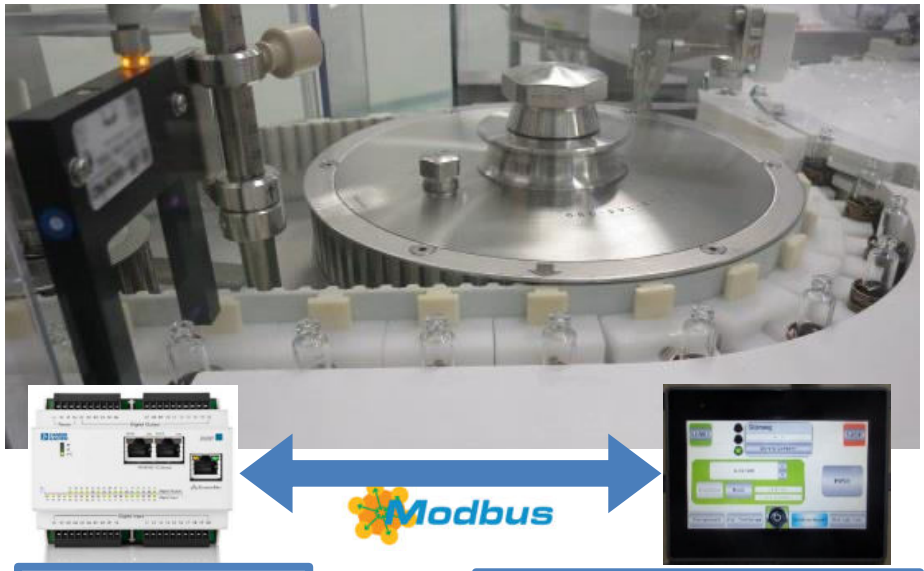


- Control system with visualization
  - Remote maintenance
  - Temperature and humidity control
    - 16 combinable control modes
    - PID controller
  - Trend display for monitoring and commissioning
  - Error history with real time clock
  - Password protected profiles
  - Language conversion
  - Device connection via Modbus

The compact solution

- HMI MVisio 5 Pro + MVisio I/O-Modul
  - High communication capability enables remote maintenance and device connection
    - OPC UA and Modbus capable
  - Visualization Manager enables flexible visualization
    - Trend displays, digital twin, user interfaces
  - Versatile software tool CoDeSys allows every customer request to be met
    - Controller function block, templates for error manager, password protected profiles and language switching

Application 4: Sorting system for pharmaceutical products



- Sorting system with visualization
  - Analog level sensors
  - Fast sorting tasks in ZX09A
  - Parameterization in MVisio HMI 7 Pro
  - Fast level control in 3 different measuring modes
  - Measurement visualization for monitoring and commissioning
  - Error history with real time clock
  - Device connection via Modbus

Application 5: Retrofit for Zentis in food industry

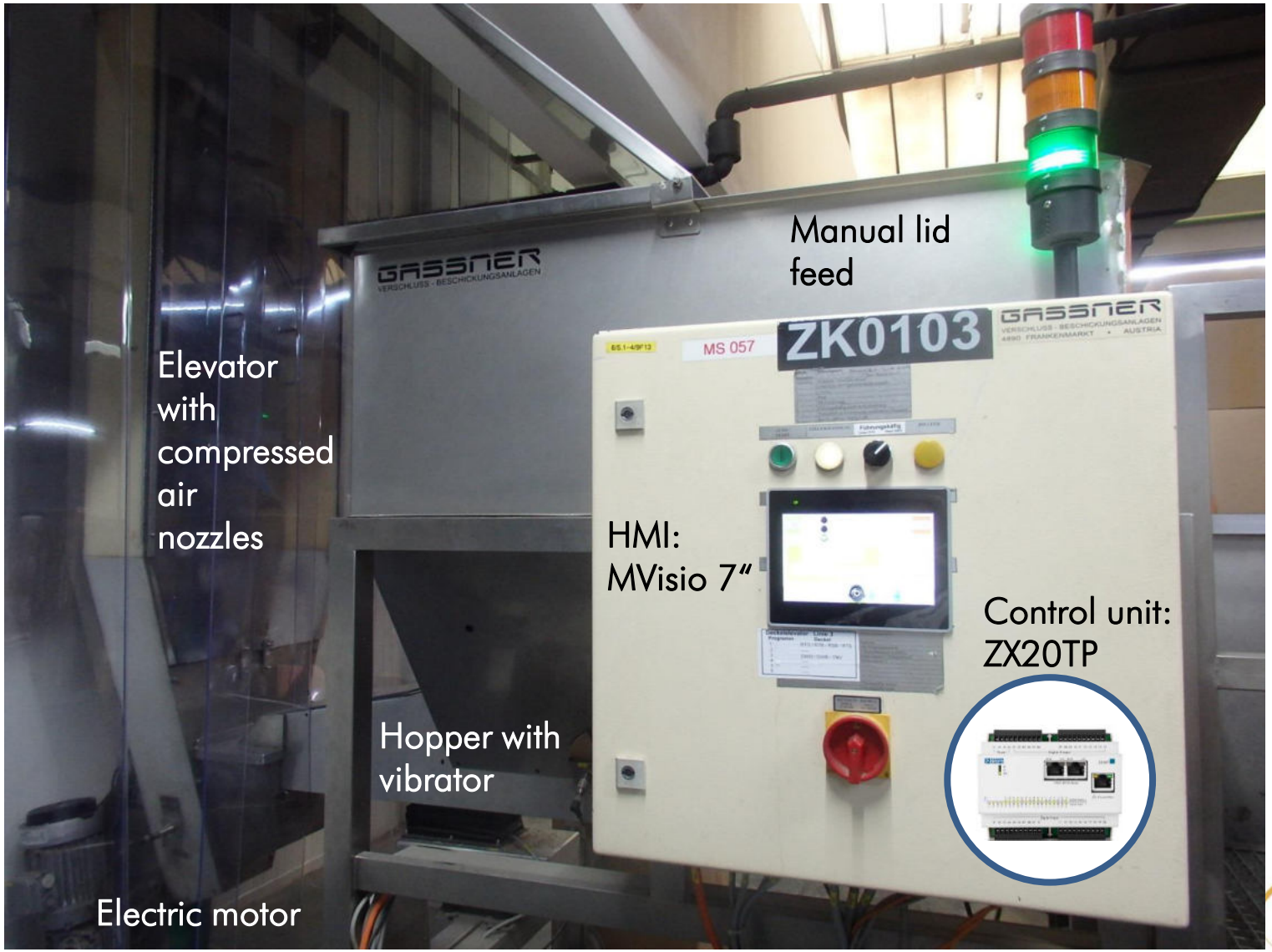
- Task: Retrofit of the lid-elevator
  - The lid-elevator takes care of feeding the lids for the screwing
  - Special difficulty: The lids must be feeded in a predetermined position

- Reason: Outdated plant
  - Difficulties in procuring spare parts
  - Declining performance
  - Outdated technology

ZANDER AACHEN

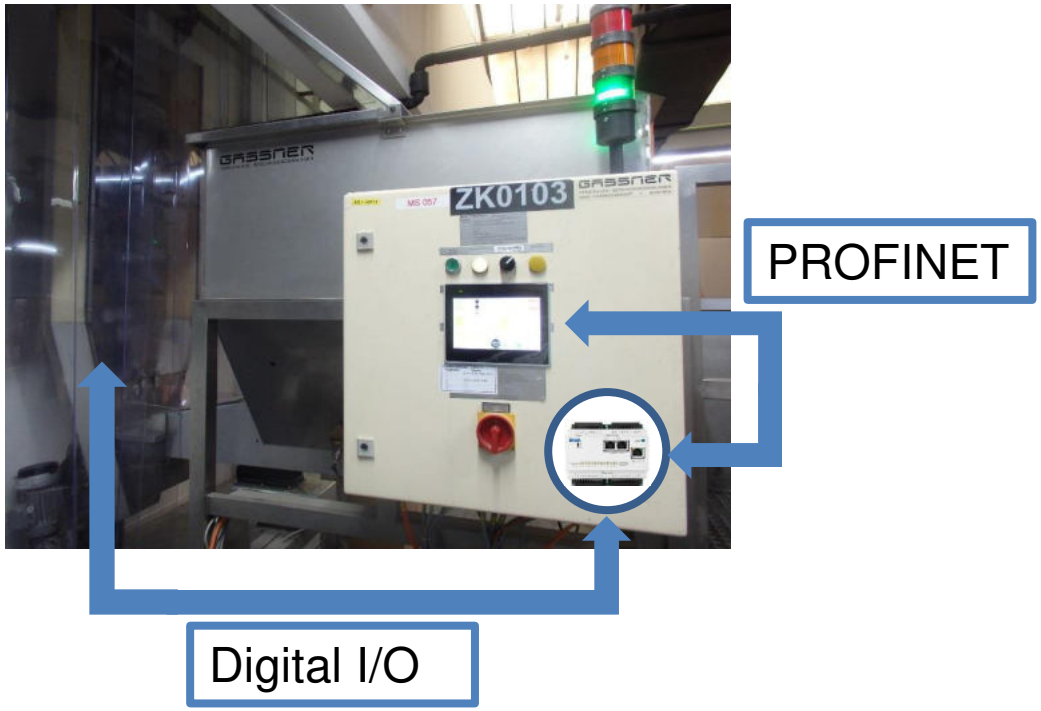
ZENTIS seit 1893

Setup of the plant



Engineering

The solution by Zander Aachen



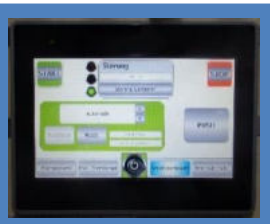
Engineering

- Replace the slow process-based controllers with a **fast FPGA**-based controller ZX20TP
- Replacement of physical control elements with the **flexible HMI** MVisio 7"
- Enabling new operating options, such as **individual parameterization**, with the MVisio 7"

ZANDER AACHEN

ZENTIS seit 1893

Software instead of hardware - Increased flexibility

ZX20T 	MVisio 7“ 
• Higher selectivity • No jitter • Real-time processing • Reliable and parallel processing thanks to FPGA technology	• Process visualization • Fast diagnosis of the state of the plant ❍ Identification by error messages • Reduction of I/Os and thus additional hardware • Enabling parameterization • Options for restricting access • Unlimited selection of system programs

Application 6: Modernisation of the system of a chemistry- and recycling center

- Task: Modernisation of an outdated deblistering plant
  - A continuous flow of cuvettes must be sorted and recycled accordingly
  - The challenge: A constantly growing number of cuvettes must be received, automatically identified, automatically sorted and recycled
- Reason:
  - Outdated, unreliable plant
    - Outdated technique
    - Unreliable and declining performance
    - Difficulty in procuring spare parts
  - The necessity for automatic recognition and sorting
    - Preparation for a steadily increasing throughput
    - High flexibility due to growing product variety

Modernisation of the system of a chemistry- and recycling center

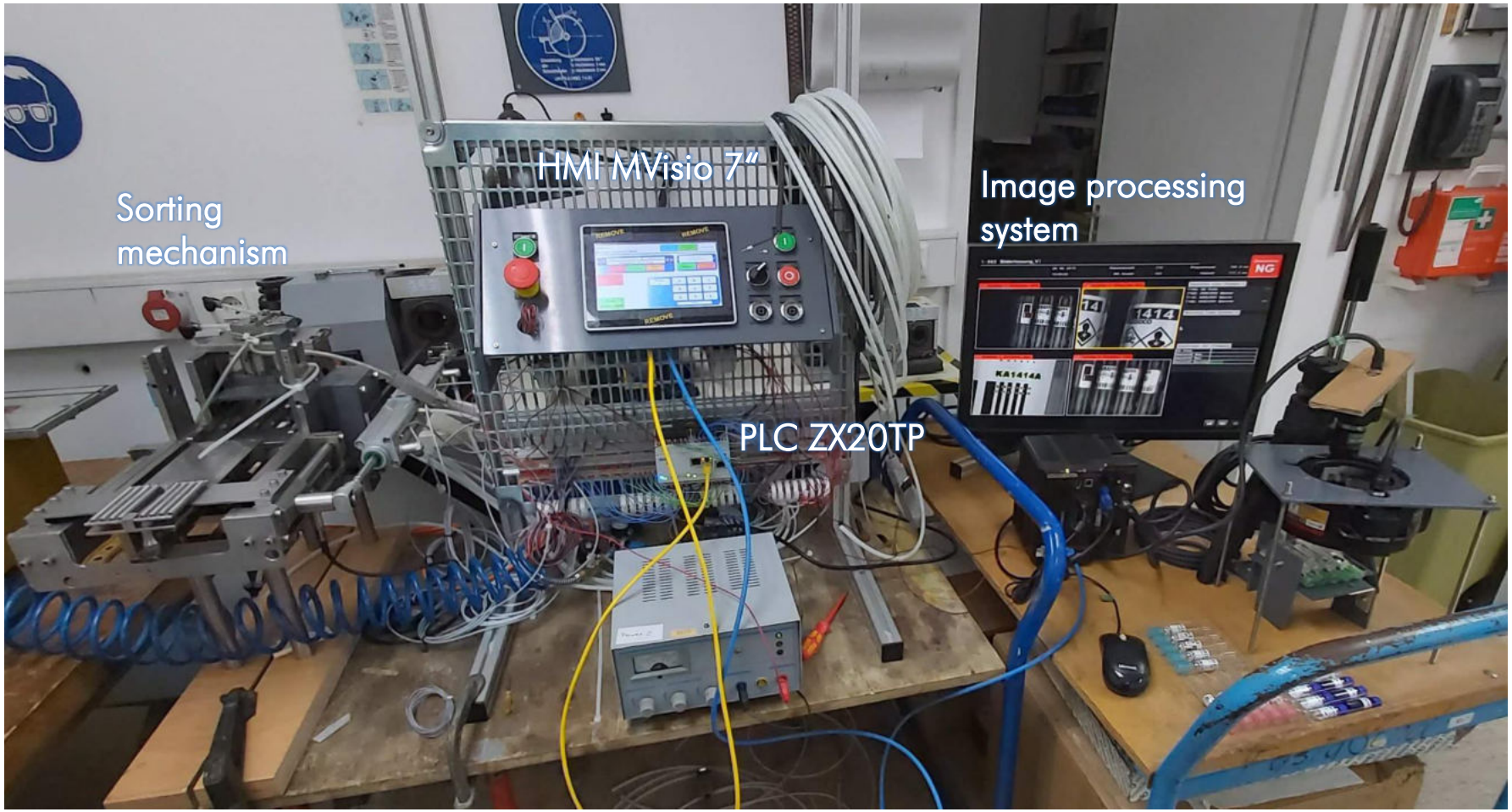
High Speed controlling

Parametrization & Visualization

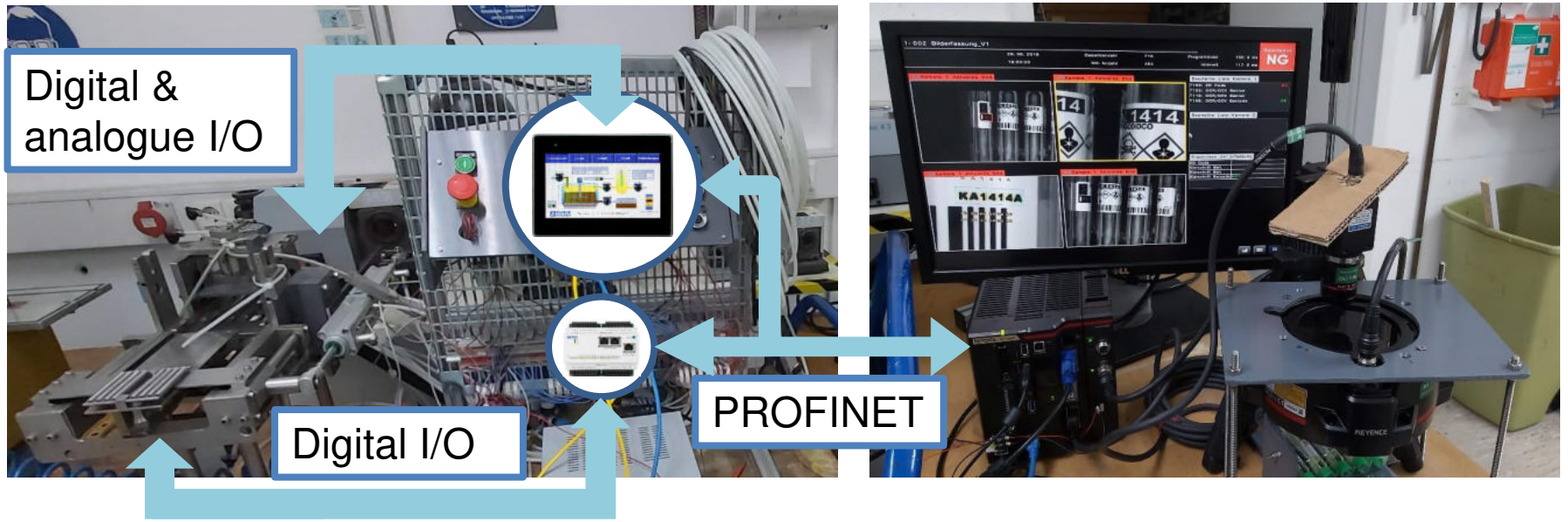
Engineering

ZANDER AACHEN

Setup of the plant



The solution by Zander Aachen



- Replace slow microprocessor-based controllers with a **high-speed FPGA**-based controller ZX20TP
- Replacement of physical control elements with the **flexible HMI** MVisio 7"
- Generating and enabling new operating modes such as **simple, individual parameterization** with the MVisio_7
- Introducing **optical acquisition** and processing paired with a **high-speed PLC**

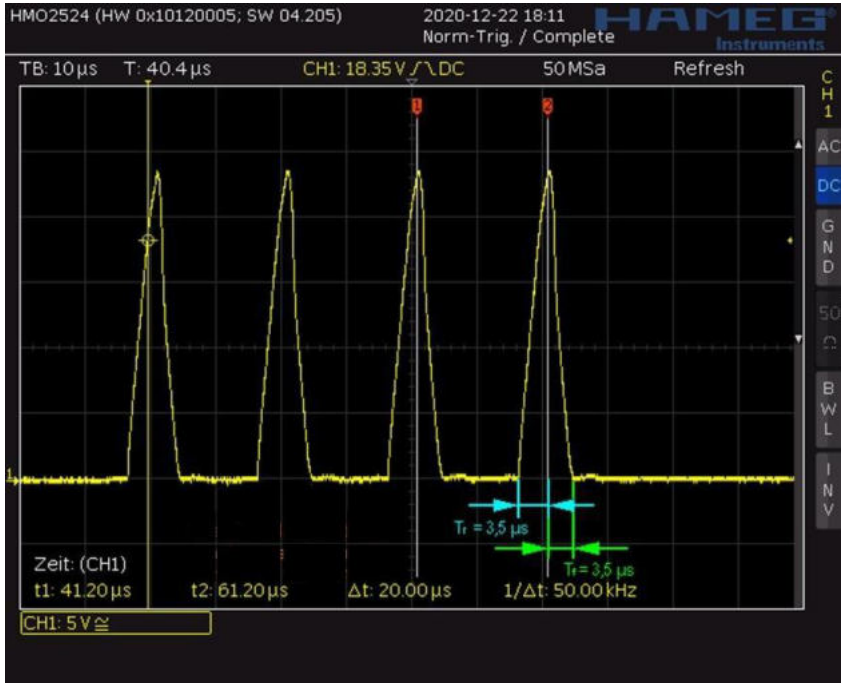
Engineering

Software instead of hardware – Higher diversity & flexibility

ZX20T 	MVisio 7“ 

• Real-time capable
• Reliable and parallel processing thanks to FPGA technology
• No cycle time, no jitter
• Higher selectivity
• High-speed communication with image processing systems
• Process acceleration up to the physical limits of the system
• Easy programmability
	• Interactive process visualization
	• Fast diagnosis of the system status
	  ❍ Identification via status messages
	  ❍ Highlighting active elements
	• Option of process parameterization
	• Reduction of I/Os and thus additional hardware
	• High-speed communication with image processing systems and high-speed PLC
	  ❍ Display of identification and process results
	• Options for restricting access

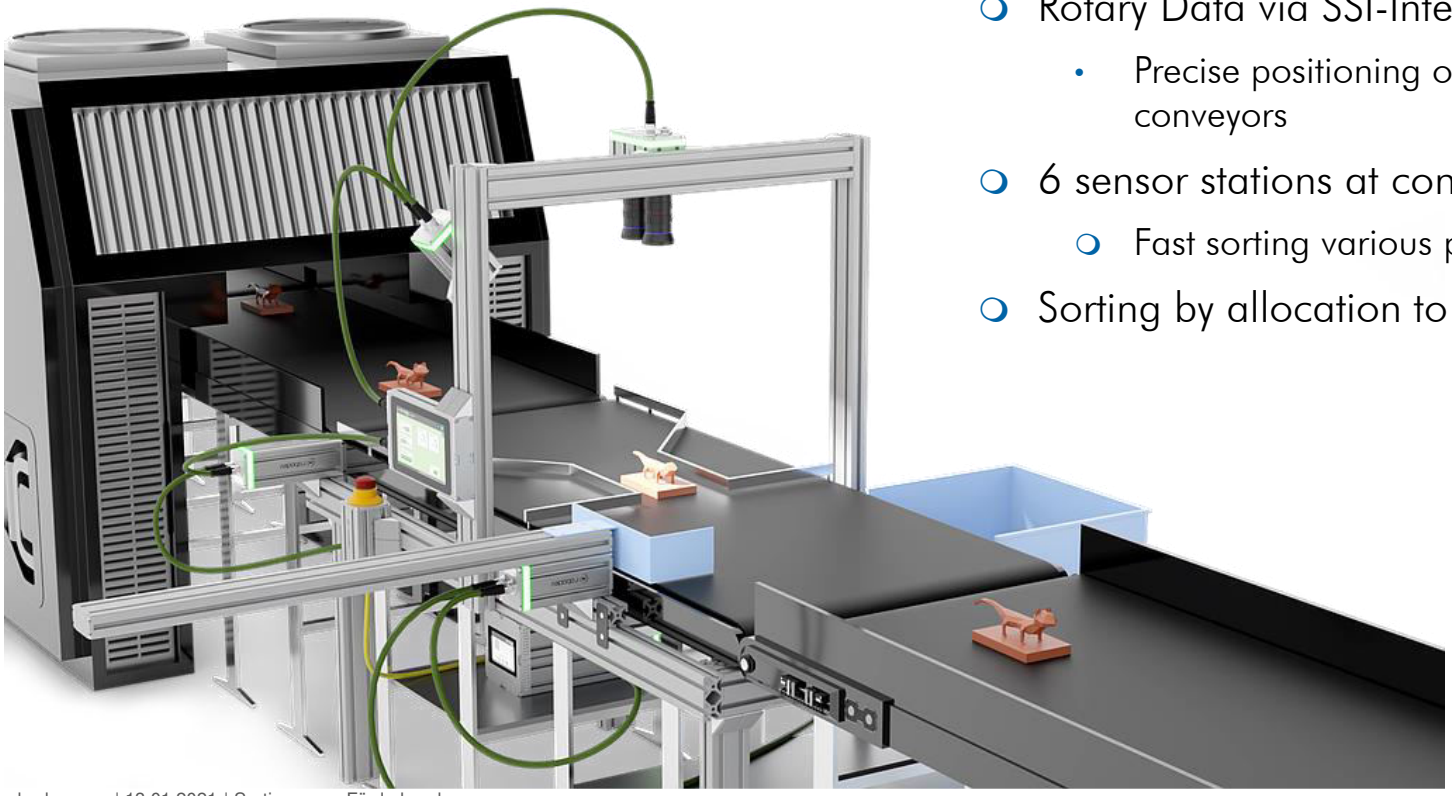
Application 7: Generating of short pulses



- Generating very short output pulses
  - Output driver rise/fall-time of 3,5µs
  - Resulting minimum pulse width of 7µs
  - Programmable timer switching points in 125ns steps
  - Permanent output frequency of 25kHz
    - faster output switching frequency possible for a short time

Engineering

Application 8: Partial sorting at conveyors



robodev.com | 13.01.2021 | Sortieren am Förderband

- Rotary and encoder at conveyors
  - Rotary Data via SSI-Interface
    - Precise positioning of parts on conveyors
  - 6 sensor stations at conveyors
    - Fast sorting various parts
  - Sorting by allocation to locks

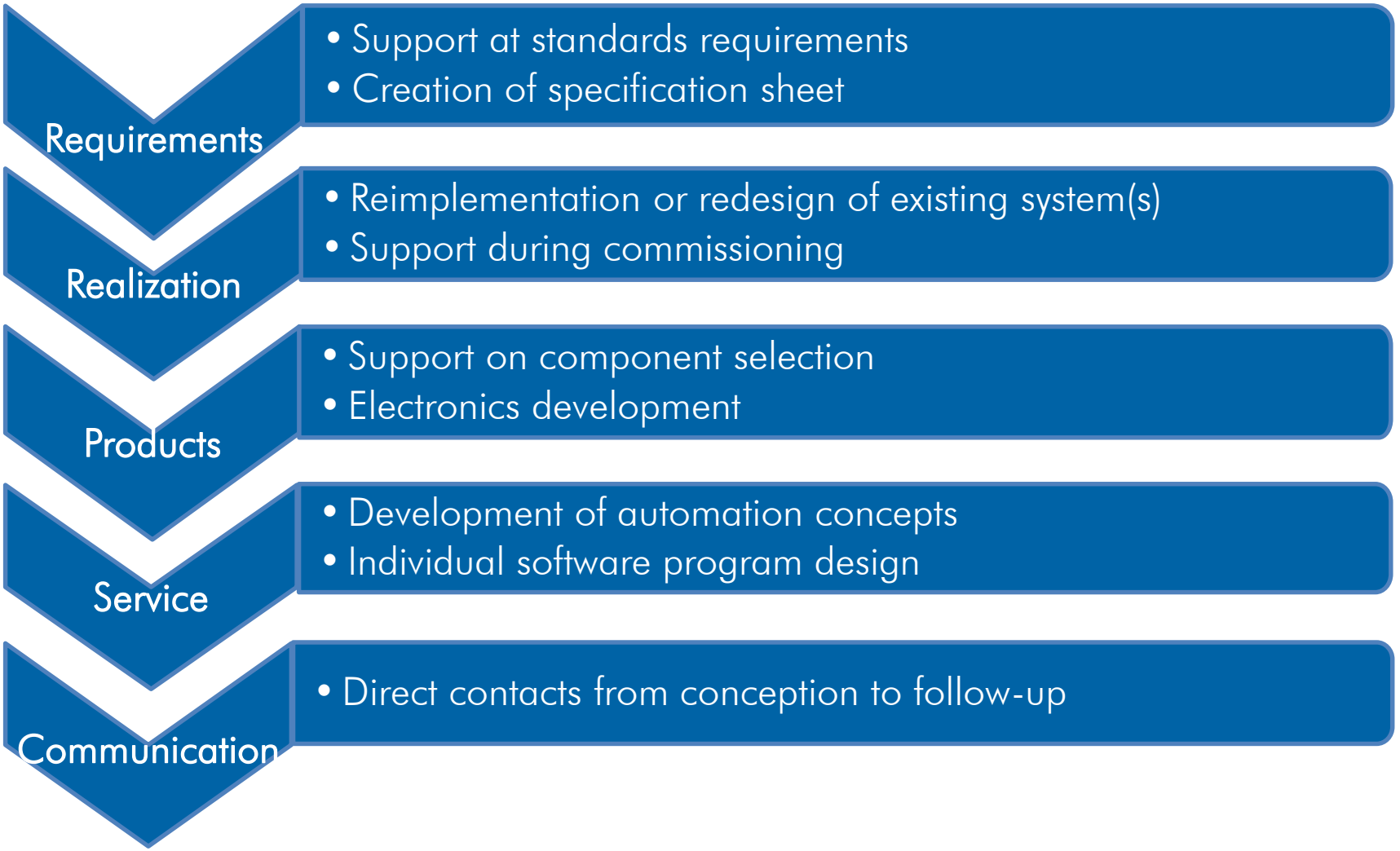
Engineering

ZANDER AACHEN

Application 9: Packaging street

- Encoder at conveyors
  - Positioning by SSI- Interface
    - Exact positioning of packaging at conveyors
    - Fast placement of boxes possible
  - Sorting by allocation to locks

Engineering



ZANDER AACHEN

Engineering & Industry 4.0

- Optimization of the machines communication structure and processes
- Optimization of the Human-Machine interaction
- Increase in efficiency

Goal

- Formation of our team „Process Intelligence 4.0“
- Software individualization and Hardware supply
- In practice: Creation of digital process twins with visualization of cutting-edge networked HMI solution (OPC UA) and SPS

Action & Concretization

Software-Development

- Software solution for your individual application
- Our small high-speed-controller can be programed in structured text based on your individual requirements
- Software programs for the series ZX09, ZX20 can be preinstalled

Software Service –
High Speed Controller

- Customer individual and certified safety solutions for your machines
- The controller contains already our certified program, which will free you from the whole safety programming effort
- Wire the TALOS controller, choose the program – plug & play

Software Service –
Safety Controller TALOS

Software Service for HMI MVisio in CoDeSys

- Creating individual automatization software in CoDeSys V3.5
- Remote maintenance and monitoring via OPC UA
- Fast diagnosis with the support of a digital twin
- Error history with textual description
- User friendly parameterization with trend indicator