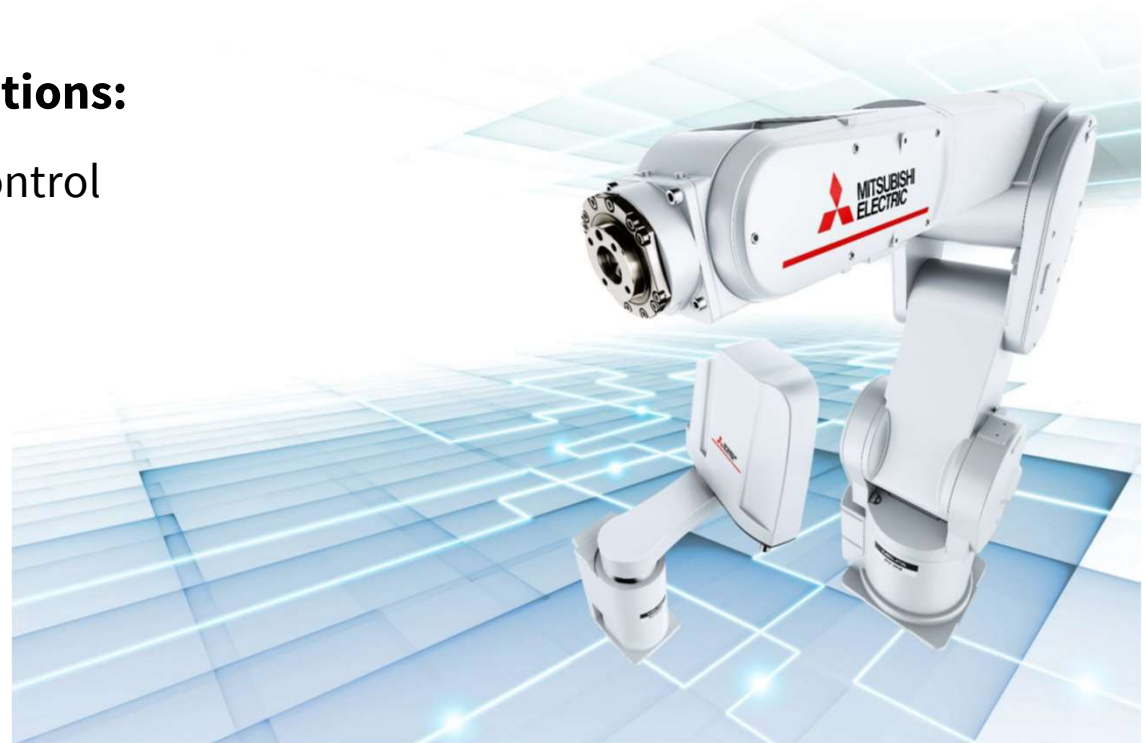# ADIRO

Didactic and Automation

Profile ADIRO Automatisierungstechnik

Consulting, planning and implementation of automation projects for industry, trade and educational institutions

Our core competencies - holistic problem solutions:

- Robotics in assembly, production and quality control

- Laboratory automation

- PLC controls and networking

- Operation, monitoring, visualization

- Optimization of plants and work processes

- Training, workshops, coaching

- Documentation

Profile ADIRO Automatisierungstechnik

Since our establishment in 1990, numerous national and international customers placed their trust in Adiro.

In the robotics sector, we are a certified member of the Automation network of Mitsubishi Electric.

We see our ISO 9001 certification as an obligation for continuous improvements for the benefit of our customers!
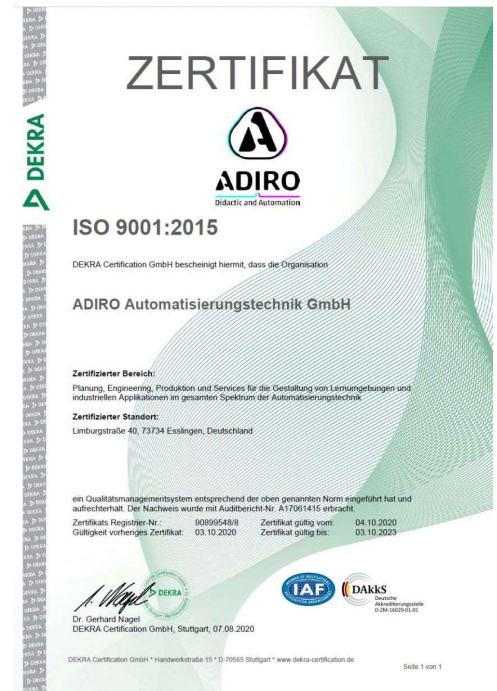
Profile ADIRO Automatisierungstechnik

In April 2020 ADIRO Automatisierungstechnik GmbH celebrated their 30th anniversary.

3 decades of innovative solutions in the broad spectrum of automation technology.

Prize winners of the competition:
100 locations for Industry 4.0 in Baden-Württemberg
Award for the development and implementation of an exemplary Industry 4.0 solution

AUSZEICHNUNG

für die Entwicklung und Umsetzung einer beispielhaften Industrie 4.0-Lösung verliehen an

Adiro Automatisierungstechnik GmbH

Das Land Baden-Württemberg spricht dem Unternehmen für diese hervorragende Innovationsleistung Dank und Anerkennung aus.

Stuttgart, 02. Juli 2018

Dr. Nicole Hoffmeister-Kraut MdL
Ministerin für Wirtschaft, Arbeit und Wohnungsbau
des Landes Baden-Württemberg

Baden-Württemberg
MINISTERIUM FÜR WIRTSCHAFT, ARBEIT UND WOHNUNGSBAU

Robotics system partner of Mitsubishi Electric

We have been a certified system partner for integration since May 2003 of Mitsubishi robot systems.

Based on decades of experience, we offer specialist knowledge in the following areas:

- Customized Training

- Feasibility studies, proof of process

- Integrations

- Programing

- Documentation

- Services / optimizations

Robot programing requirements

Process security, monitoring and communication

Processes that are becoming more complex with increasing demands on the software require a consistent communication structure. (Industry 4.0, AI, digital twin)

- Modern bus and communication systems for data transfer from the robot cell to the office world.

- Intelligent HMI (human-machine interfaces) are becoming more and more important to relieve the plant operator.

Quelle: www.pixabay.com
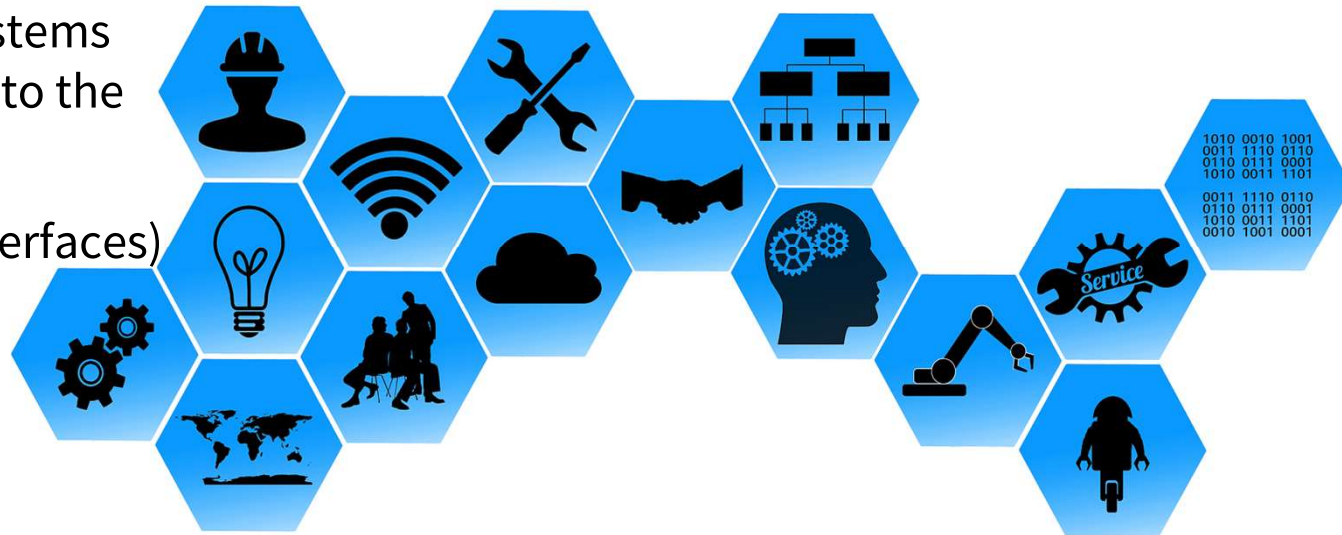
Robot programming requirements

## In addition to the sequence programming, further aspects must be taken into account:

- Create logistics and material flow concepts

- Adaptation to various software standards

- Integration of various automation components, PLC, vision systems, Lasers, CNC machines ...

- Establish system operation with the worker

- Consider safety aspects (MRL standard)

- Error behavior, -evaluation and –robustness

- Process modularity

- Amortization considerations, number of items, cycle times, variety of types, set-up time minimization ...

- Integration of IT world / IT security

"Office Floor" (Machine-to-Business)

ERP

PLM

MES

Logistics

"Shop Floor" (Machine-to-Machine)
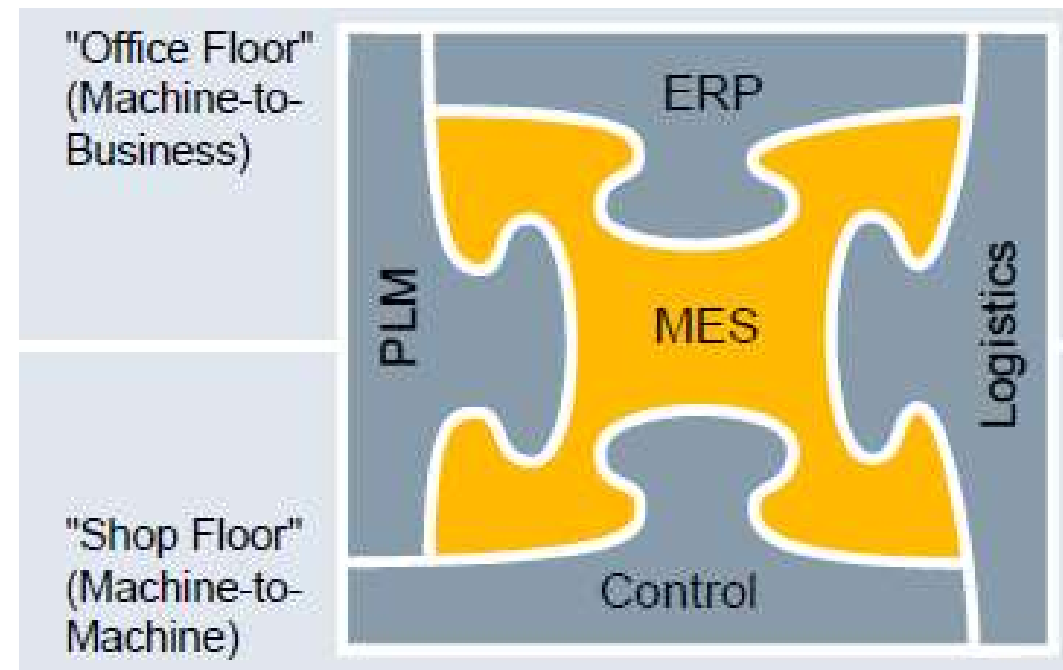
Control

Services

Application programming Robotic

- Complete control of systems, including visualization (HMI) and remote maintenance

- Camera-guided robot applications

- Control of additional axes

- Conveyor Tracking

- Automation solutions for CNC machines

- Operator interfaces (HMI)

- Real-time applications

- 3D Bin Picking (grap in the box)
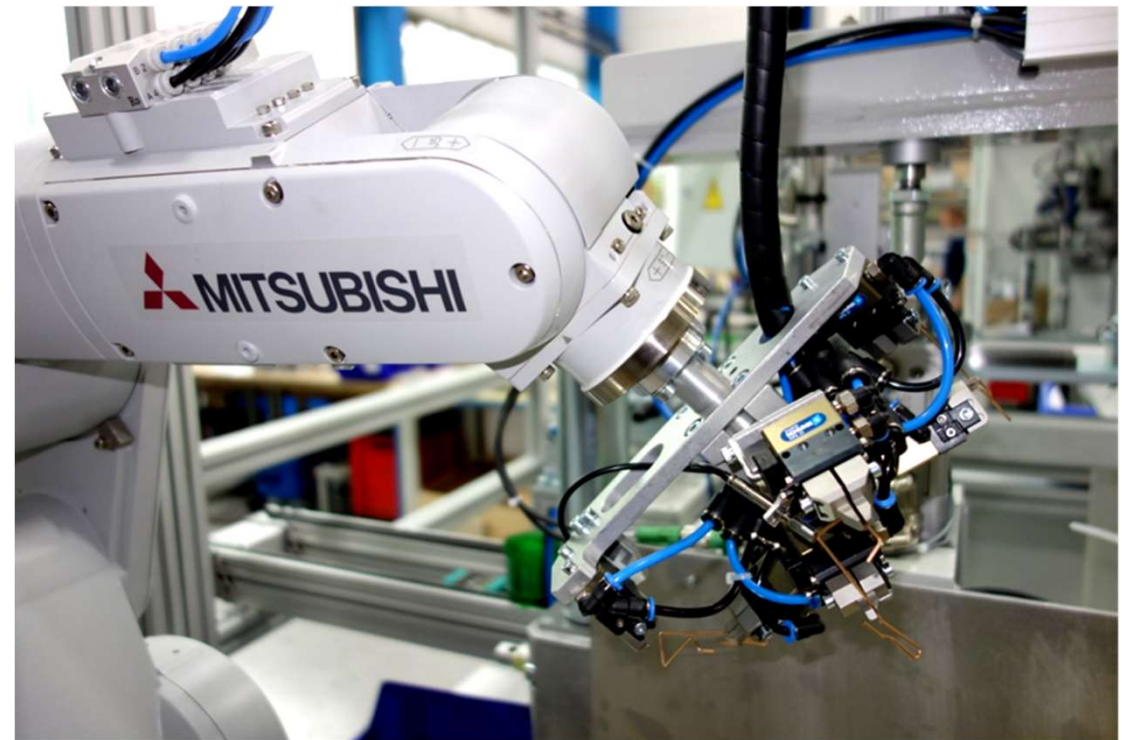
Services

Feasibility studies, simulation, cycle time analysis and optimization

- Preliminary tests for automation processes and -ideas with our demonstration robots in Adiro or at customers site.

- Cycle time analysis and optimization in the construction phase with RT Toolbox 2/3. (Virtual robot)

- Cycle time analysis and optimization on the real system

- Creation and elaboration of control concepts for entire systems
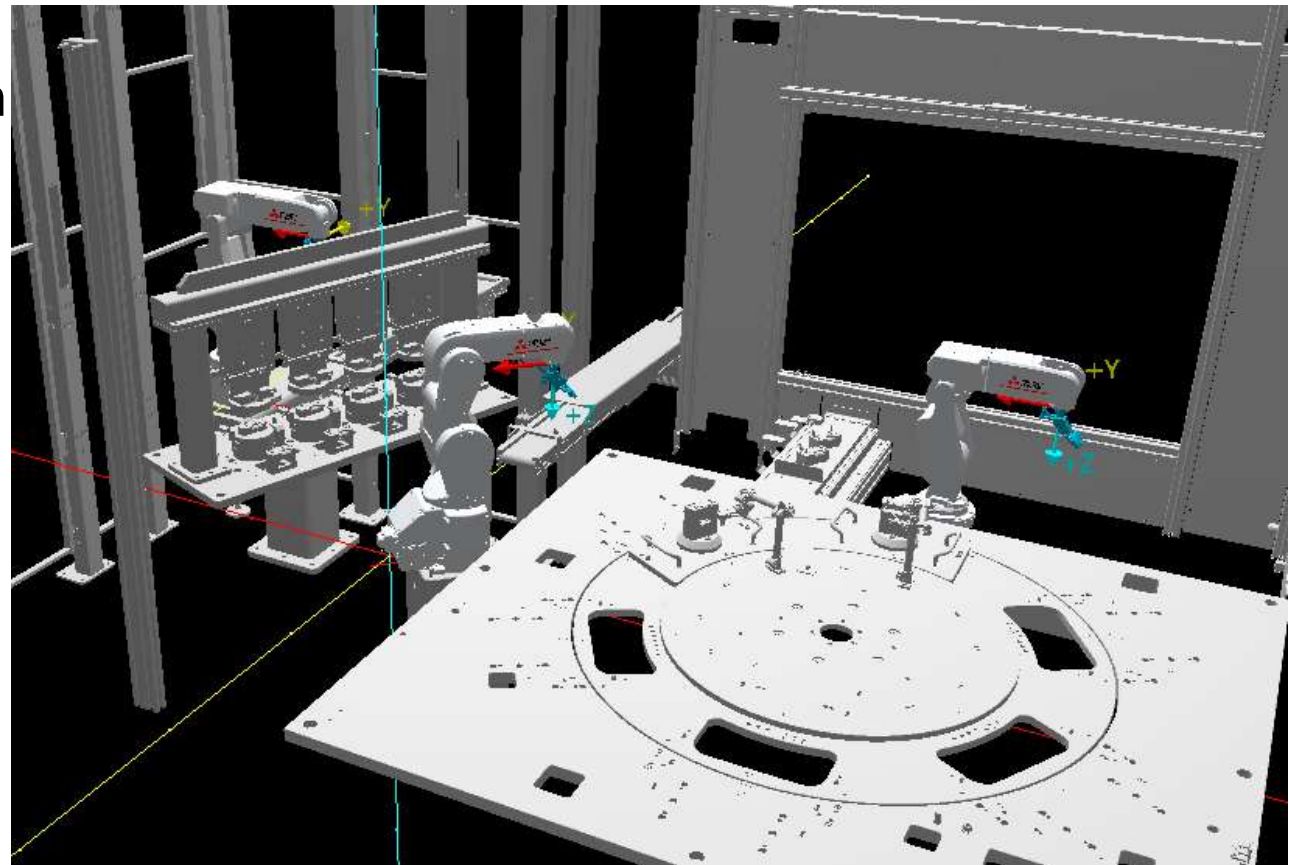
Services

Programming templates

- Development of customer-specific programming standards (templates) and interfaces

- Support and process support in the implementation of the templates for customer projects

```
1480  '*********************************
1481  ' Application main entry point
1482  '*********************************
1483  *Main
1484    DOTaskRequest=1              ' Set ready for task
1485      Wait DIStrobe=1           ' Wait for a new task
1486    DOTaskRequest=0             ' Reset ready for task
1487      iTask%=DITask            ' Read task data from PLC
1488      DOTask=iTask%            ' Mirror task data back to PLC
1489    DOTaskRead=1               ' Set 'task has been read' to PLC
1490      Wait DIStrobe=0          ' Wait for reset PLC signal
1491    DOTaskRead=0               ' Reset 'task has been read' to PLC
1492      If(iNeedToHome%=1 And iTask%<>1) Then Error 9105' Task selection not allowed -
1493  If(iTask%=1) Then GoTo *Homing         ' <Tasks Number="1" Label="*Homing" Descrip
1494  If(iTask%=2) Then GoTo *Service        ' <Tasks Number="2" Label="*Service" Descrip
1495  If(iTask%=3) Then GoTo *DropPart       ' <Tasks Number="3" Label="*DropPart" Descr
1496  If(iTask%=4) Then GoTo *Spare          ' <Tasks Number="4" Label="*Spare" Descripti
1497  If(iTask%=5) Then GoTo *PickFromConv   ' <Tasks Number="5" Label="*PickFromConv
1498  If(iTask%=6) Then GoTo *PlaceToRT      ' <Tasks Number="6" Label="*PlaceToRT" De
1499  If(iTask%=7) Then GoTo *PickFromDrawer ' <Tasks Number="7" Label="*PickFromDraw
1500    Error 9103                 ' Error: unknown task selection
1501  GoTo *Main                   ' Get back to main loop
1502  '
1503  '*********************************
1504  ' Homing Procedure
1505  '*********************************
```
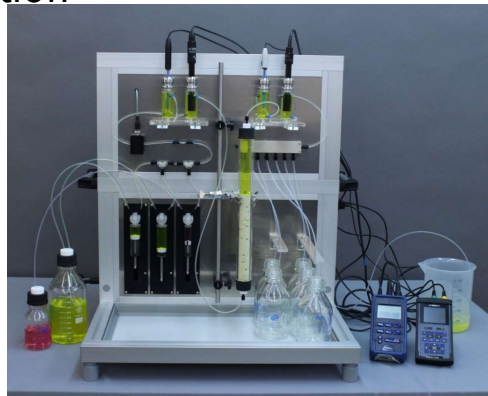
Services

Life Science

- As a flexible and innovative company, we can implement your requirements in a targeted manner thanks to our expertise in life sciences and automation technology

- Development and construction of laboratory equipment according to customer-specific requirements

Left picture: Ion exchanger
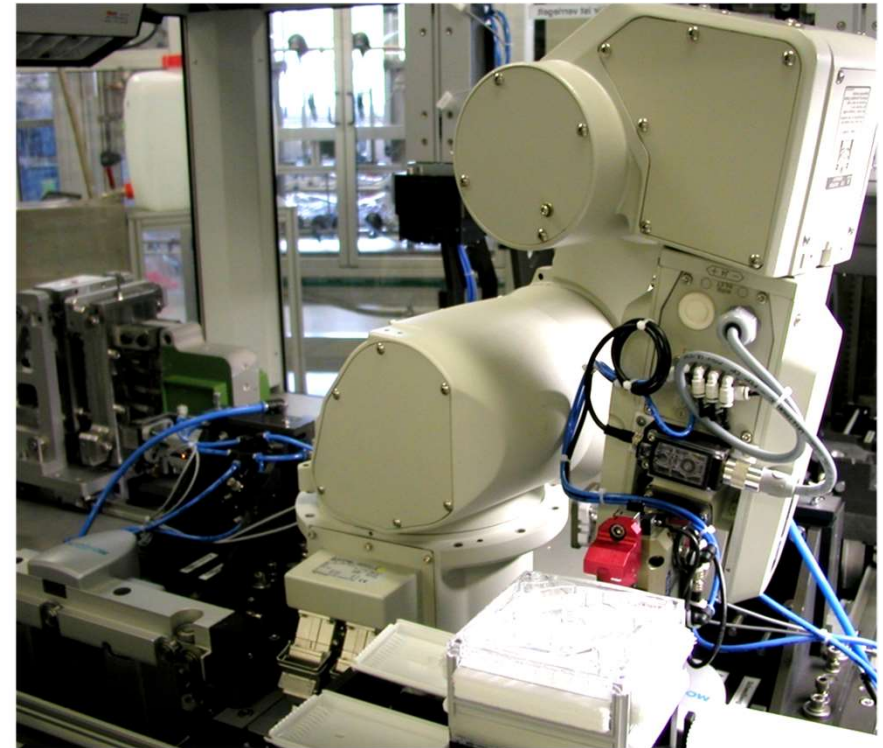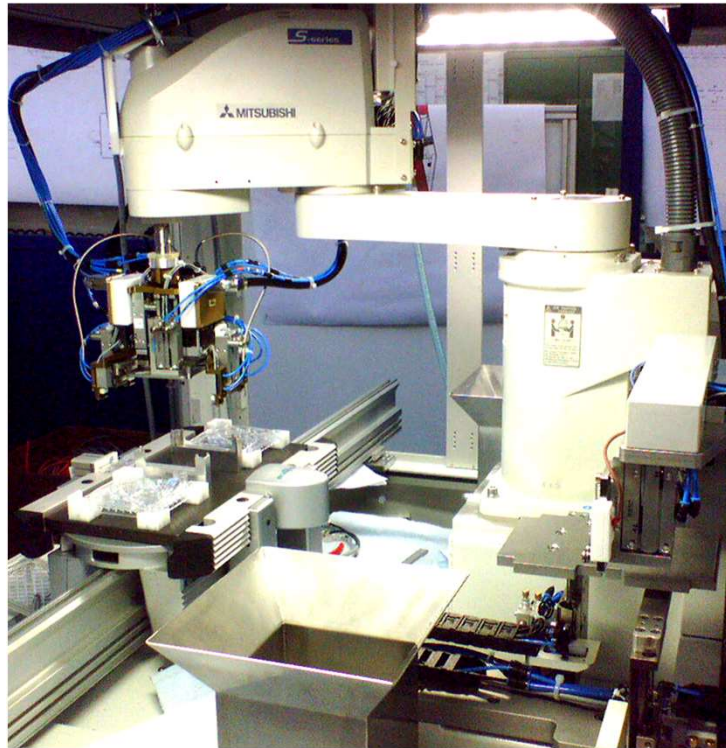
Services

Mechanics engineering

- 3D construction (Creo)
- Electrical construction (E-Plan)Montage
- Orbital welding
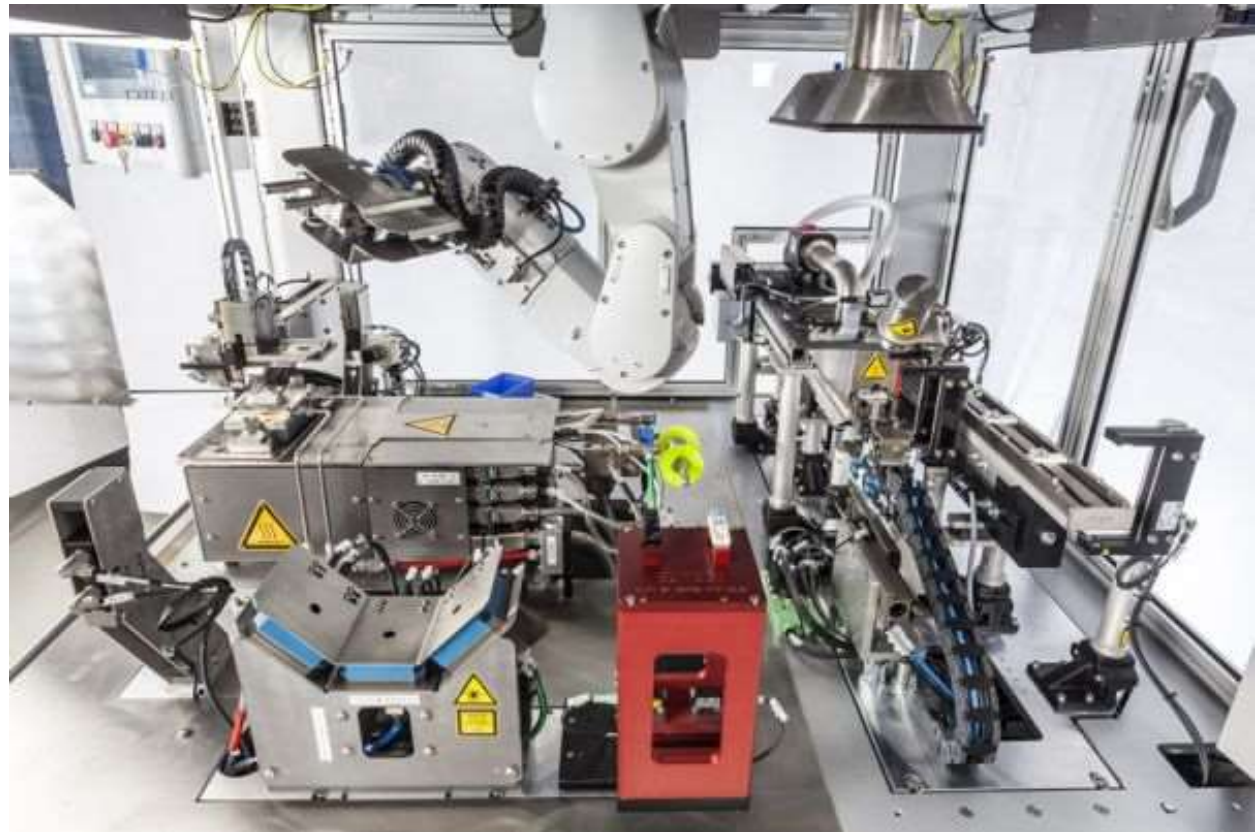
Industries

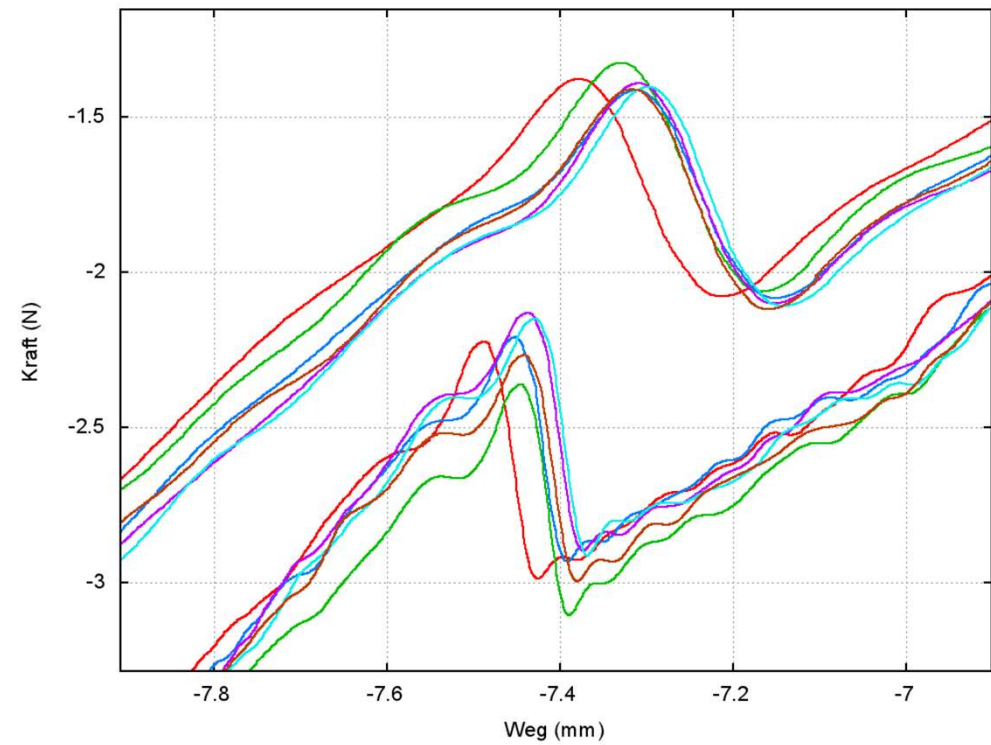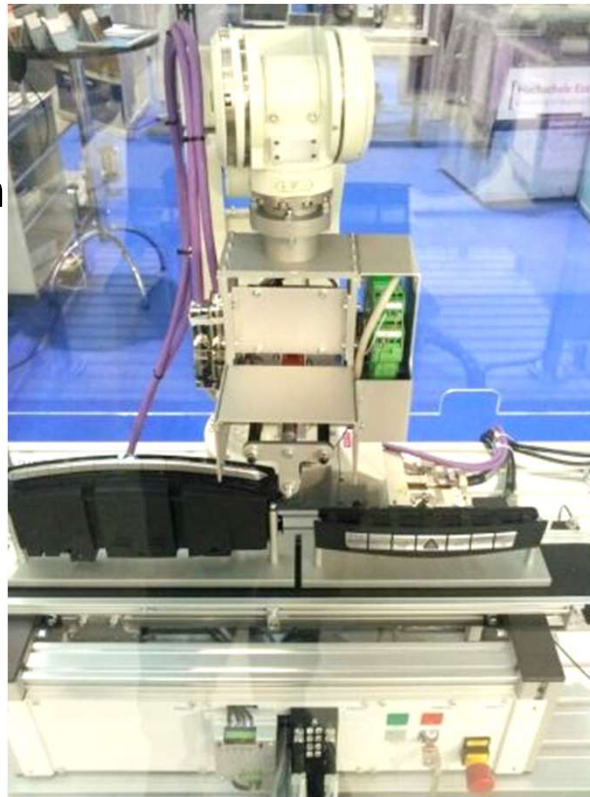## Medical, Pharma

Industries

Automotive

Industries

Electronics

Industries

Haptic

RoHaC®
developed in collaboration
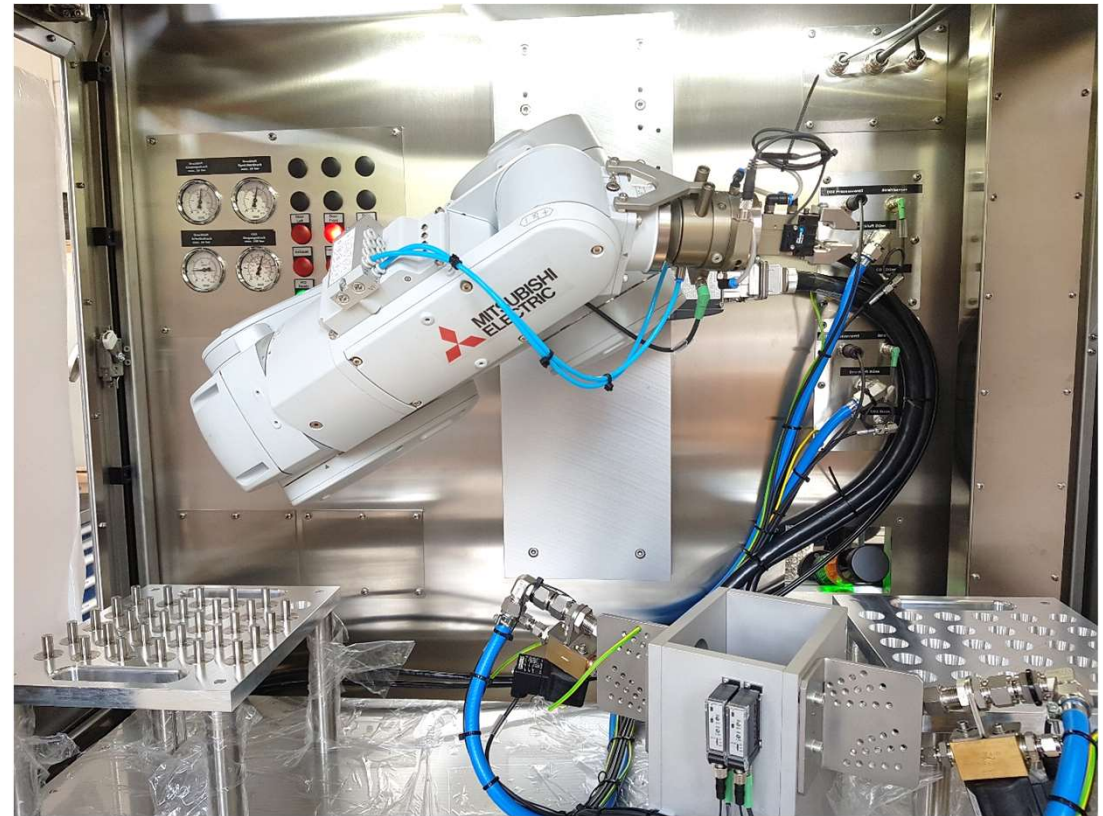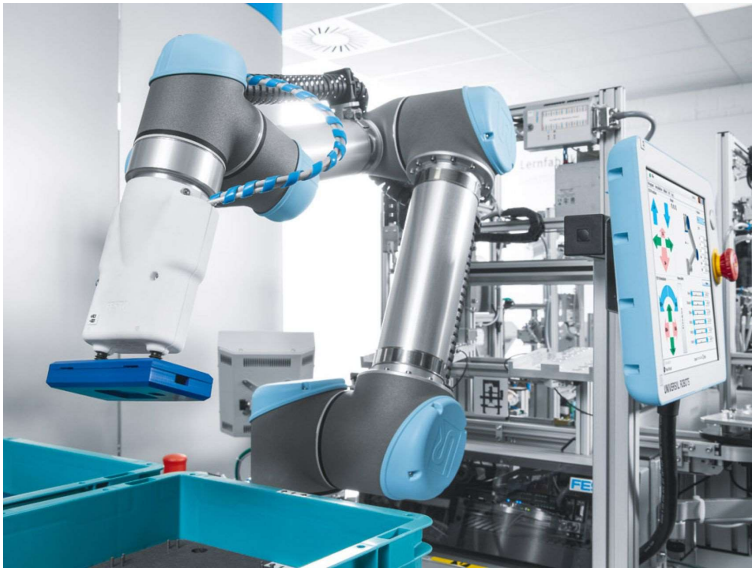with CMO-SYS GmbH
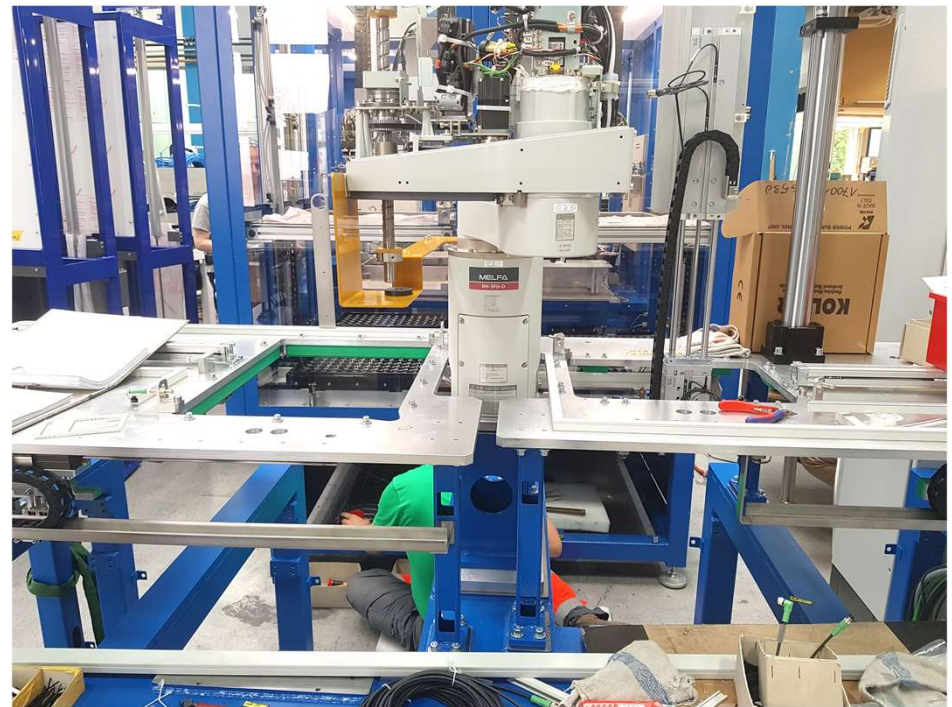
Industries

Packaging

Industries

Clean room

HRC (human robot collaboration)

Support

Robotic

- Software-Support
- Remote-Support
- Android Apps
  (Melfa client, Melfa Error)
- Documentation
- CE marking
- Assembly

Tools

Robotic (Mitsubishi)

- RT ToolBox2 / RT ToolBox3

- Ciros Studio

- ADIRO Apps (Melfa Client, Melfa Error)

- E-Designer

- **ADIRO Robot Studio** (Planning tool and for the automated creation of program code)

Training

Robot training (German / English)

- Ⓐ Lecturers for robotics (didactically and methodically trained)

- Ⓐ Partner for inter-company robot training

- Ⓐ Modular standard training program for professional teaching of the basics and expert knowledge in robotics

- Ⓐ In-house seminars for customers with training robots and / or with the real machine

- Ⓐ Seminar content specially oriented to customer demands

Project support, Coaching

Training on the Job, together with your employees (German / English)

- Ⓐ Setup of robots

- Ⓐ Elaboration of a program structure with the aim of developing a binding programming template

- Ⓐ Programming and commissioning of the robots

- Ⓐ Support through all project phases up to the acceptance of the machine

- Ⓐ Documentation

- Ⓐ Interim project management robotics

Consulting robot automation

Introduction and expansion of robot technology (German / English)

- Inventory of the current situation

- Determination of automation potential

- Optimization of existing processes

- Further development and feasibility studies

- Consulting and selection of the required robot system

- Project support
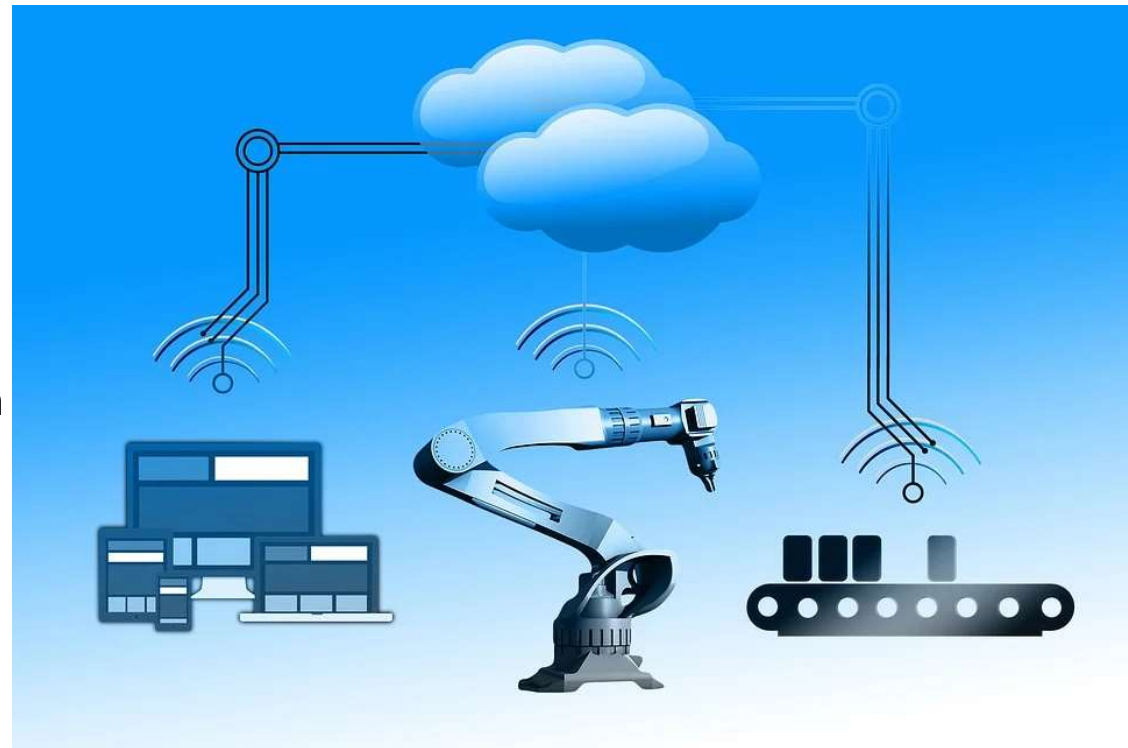
Manufacturer portfolio

Robotic Skills

- **Mitsubishi (First Choice)**
- ABB
- Yaskawa
- KUKA
- Fanuc
- Festo Robotino®

Questions?

Thank you for your attention!

S t e p h a n   K ü h n e

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