Best Practice:

Robot-assisted surface processing

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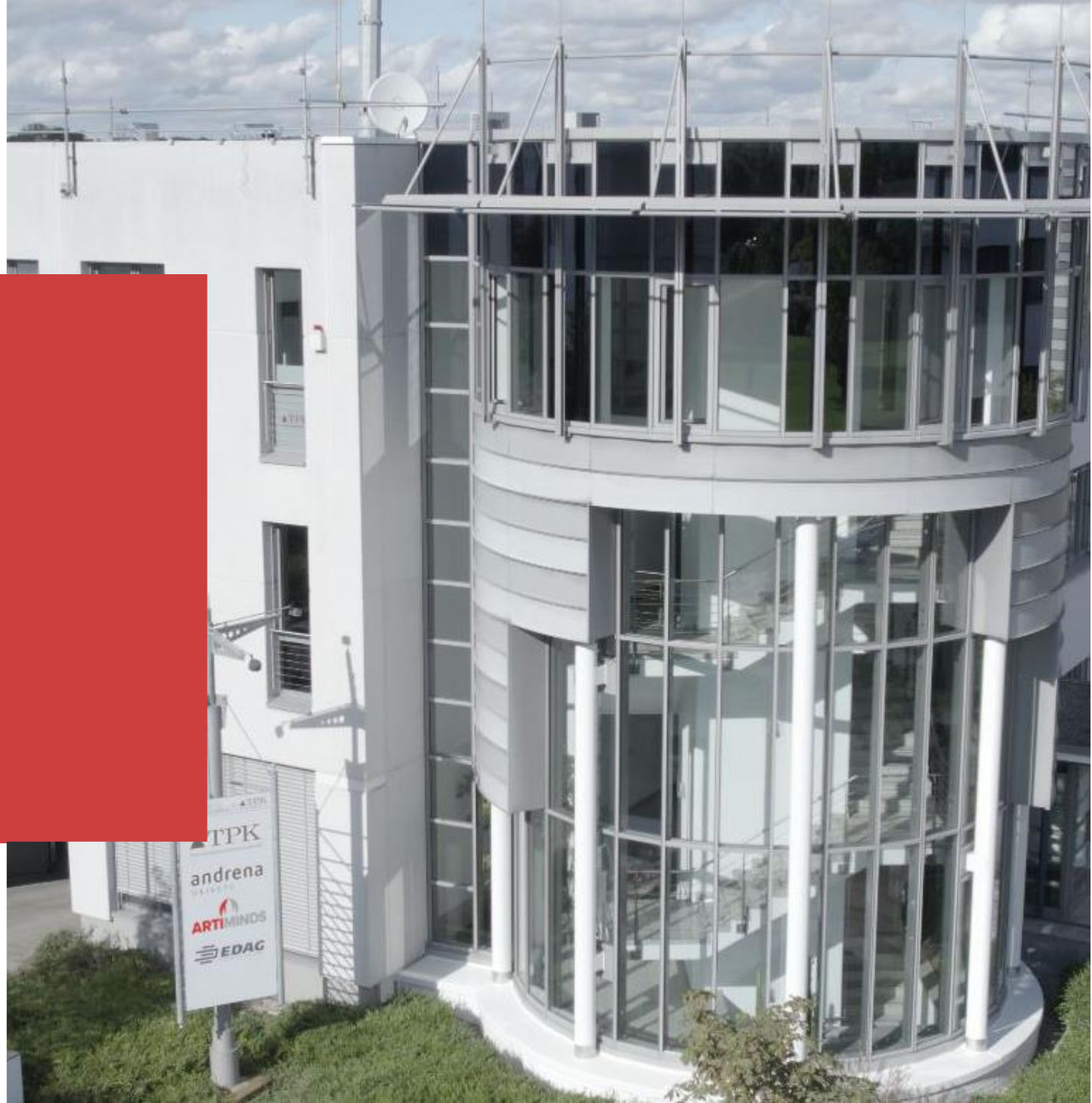
How simple implementation and robust processes succeed

ARTIMINDS

We simplify robot deployment

ARTIMINDS ROBOTICS



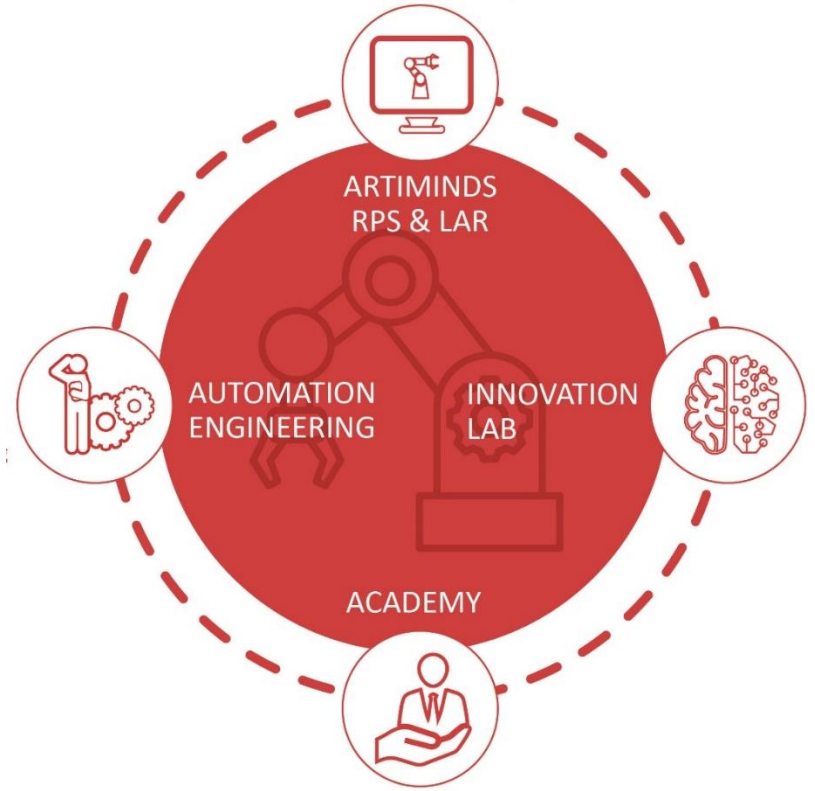
YOUR COMPREHENSIVE ROBOTICS PARTNER

PROGRAMMING & ANALYSIS SOFTWARE

Multi-vendor low-code software products for sensor-adaptive robot applications

ROBOTICS SERVICES

Project support, consulting & engineering



AI-RESEARCH

Development of state-of-the-art AI & Machine Learning technology for industrial robotics

TRAINING & EDUCATION

Software training, in-house training & know-how transfer workshops

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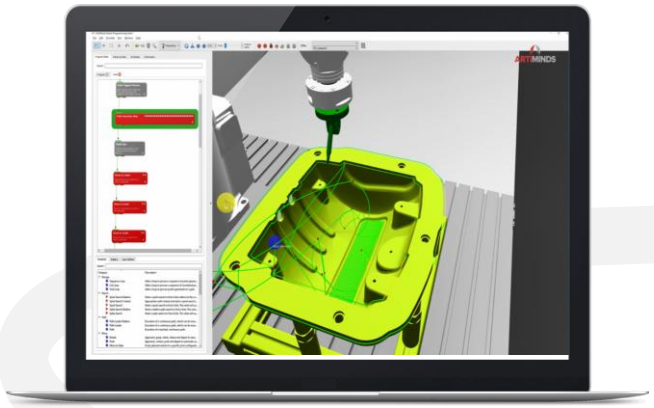
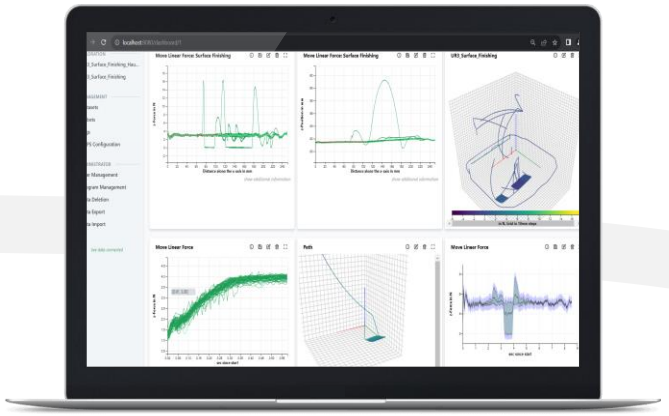
ARTIMINDS SOFTWARE PRODUCTS

ROBOT PROGRAMMING SUITE (RPS)



LEARNING & ANALYTICS FOR ROBOTS (LAR)



Plan/Simulate

Programming

Commissioning

Maintenance

Analysis / Optimization

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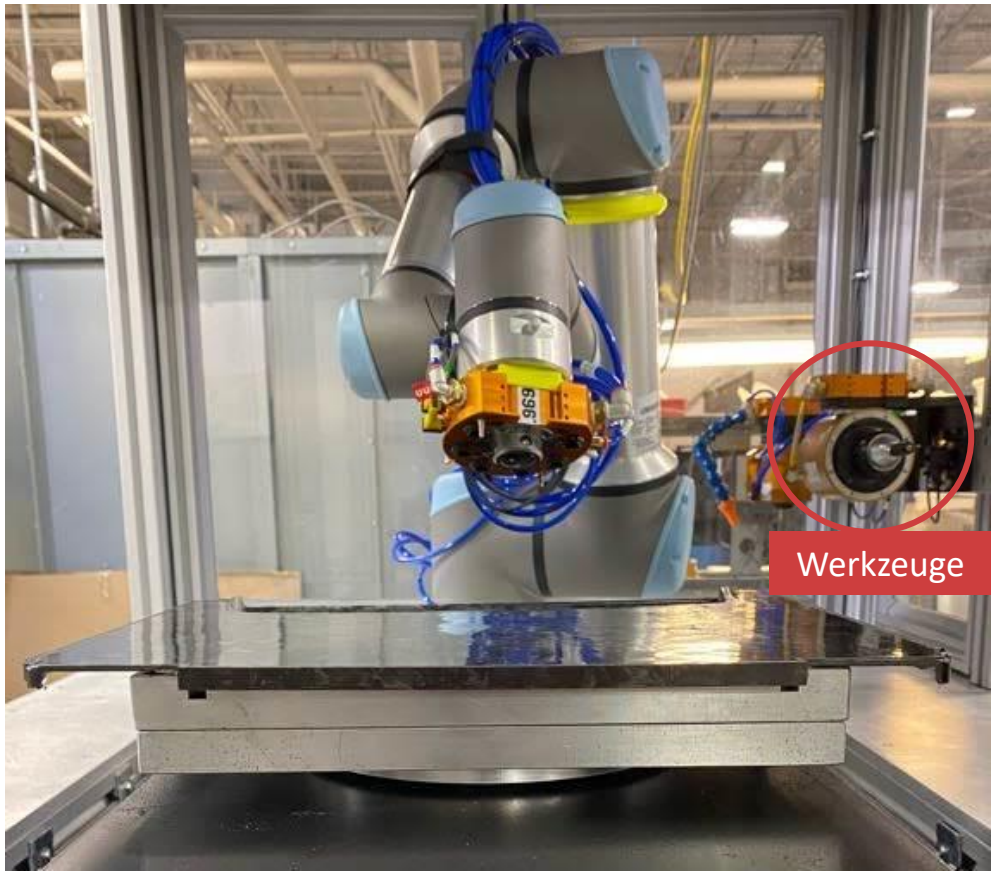
USE CASE 1: DEBURRING – TOOL-GUIDED

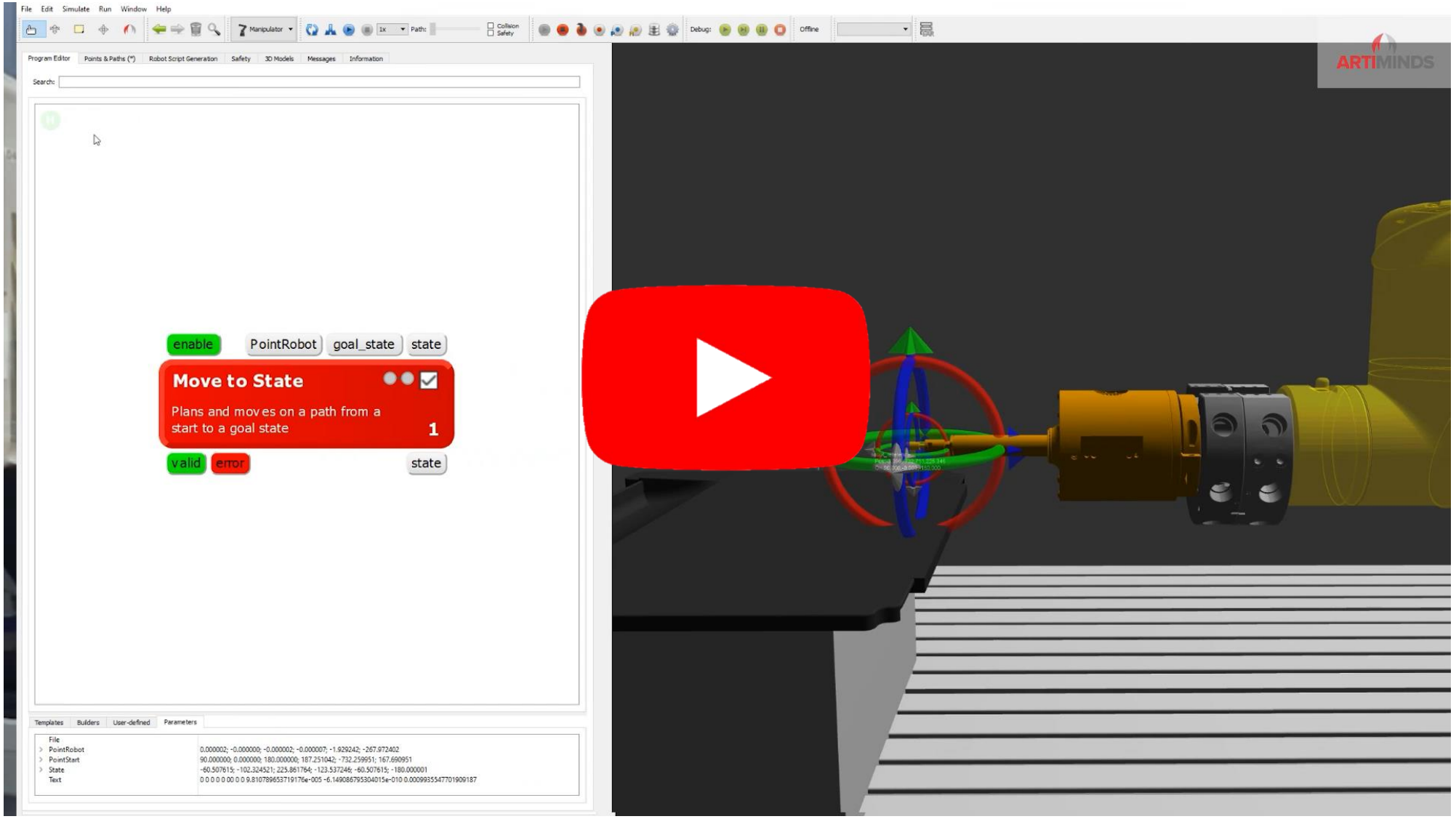
Task:
Deburring of sharp edges of composite material product

Challenges:
- High amount of edges to be processed & orientation changes
- High complexity of geometry
- High mix of product variants
- Communication of all components:
  (Robot, rotary table, tool changer, tool, HMI, PLC…)

Solution:
Quick programming with „*CAD2Path*“ feature
ArtiMinds = „Engineering“ software
for commissioning & communication of components



USE CASE 1: DEBURRING – TOOL-GUIDED

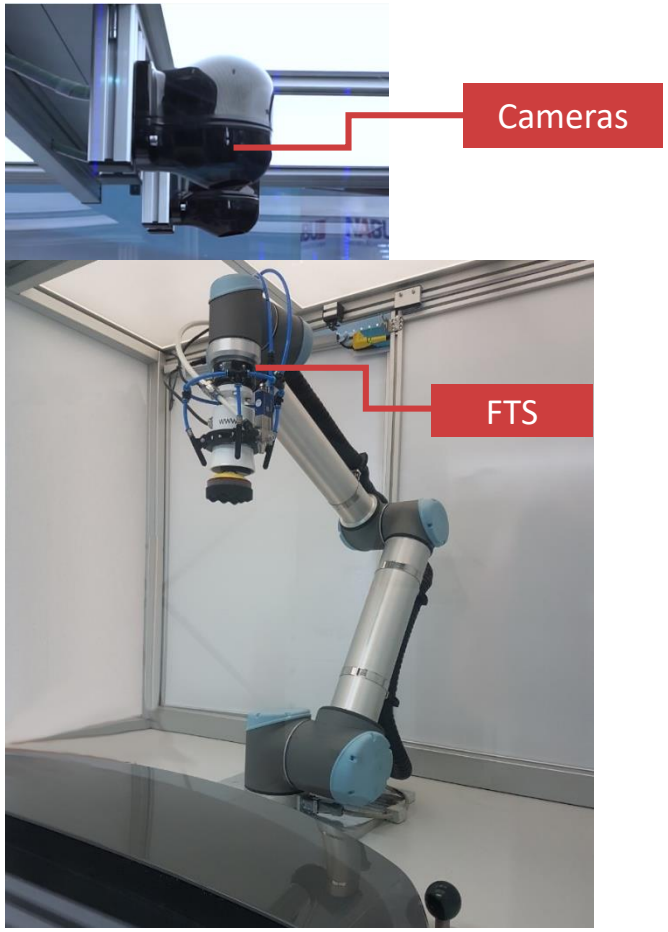


USE CASE 2: POLISHING OF DEFECTS

Task:
Polishing defect spots on workpiece

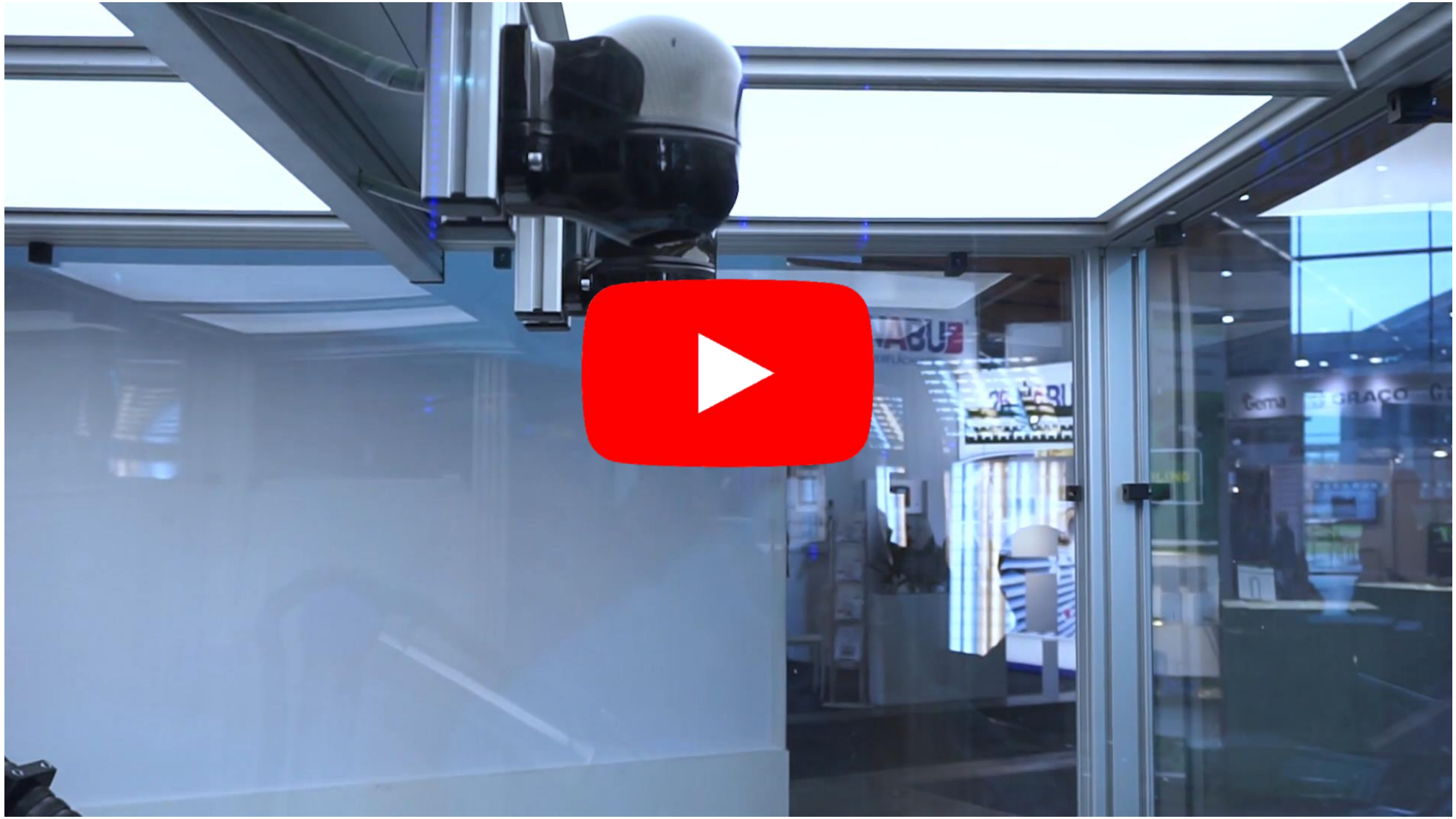
Challenges:
- Defect position varies per workpiece
- Surface treatment desired only in the area of defect
- Individual contact force necessary

Solution:
- Localization of defect via camera
- Robot approaches area of defect via Force-Torque-Sensor (FTS) and polishes with desired contact force



USE CASE 2: POLISHING OF DEFECTS

visomax



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USE CASE 3: GRINDING OF SHELL-MOLD – TOOL-GUIDED

Task:

- Grinding shell-mold made of aluminum to create necessary surface quality
- Support for worker (non-ergonomic tasks)

Challenges:

- Complex geometries
- Small lot sizes
- No prior experience in robotics
- Surface quality requires constant applied force

Solution:

Easy & independent implementation via *„CAD2Path-Force“*-function

USE CASE 3: GRINDING OF SHELL-MOLD – TOOL-GUIDED

MAUS

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USE CASE 4: GRINDING OF WELD SEAMS – WORKPIECE-GUIDED

Task:

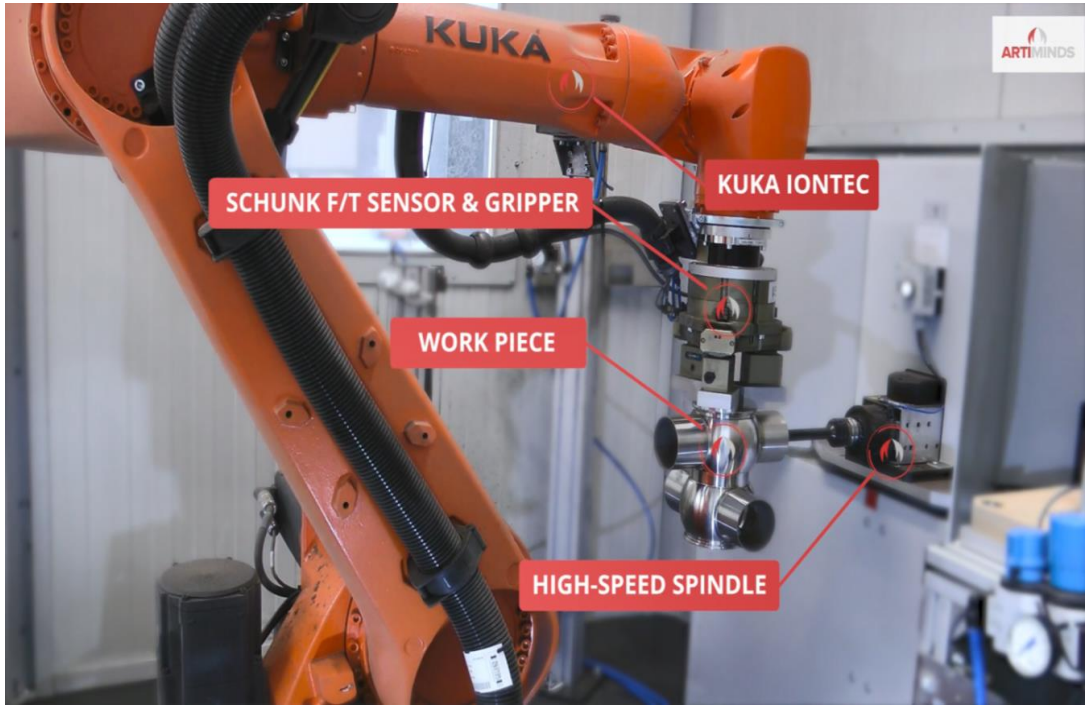
- Work piece tolerance specific treatment of inner side of pipes
- Sensor-based „digitized“ solution

Challenges:

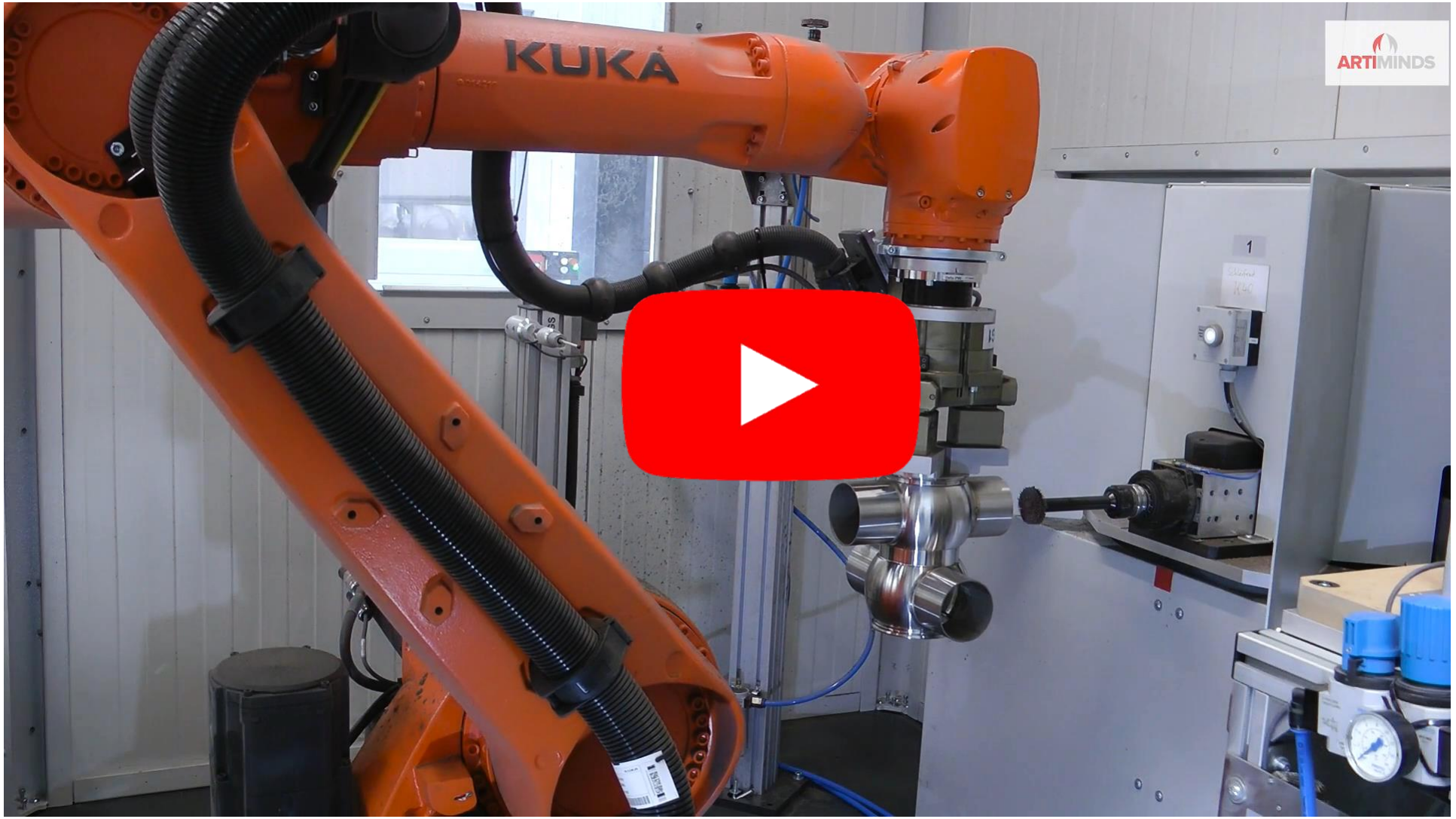
- Process requires oscillating movement on curved surface, thus complex programming task
- Compensation of tolerances: process requires constant application of force
- Choosing optimal control engineering parameters of *Force-Torque-Sensor*

Solution:

- Constant process monitoring
- Identification of optimization potential & quick adaption of process parameters via analysis software *ArtiMinds LAR*



USE CASE 4: GRINDING OF WELD SEAMS – WORKPIECE-GUIDED



SHL Automatisierungstechnik

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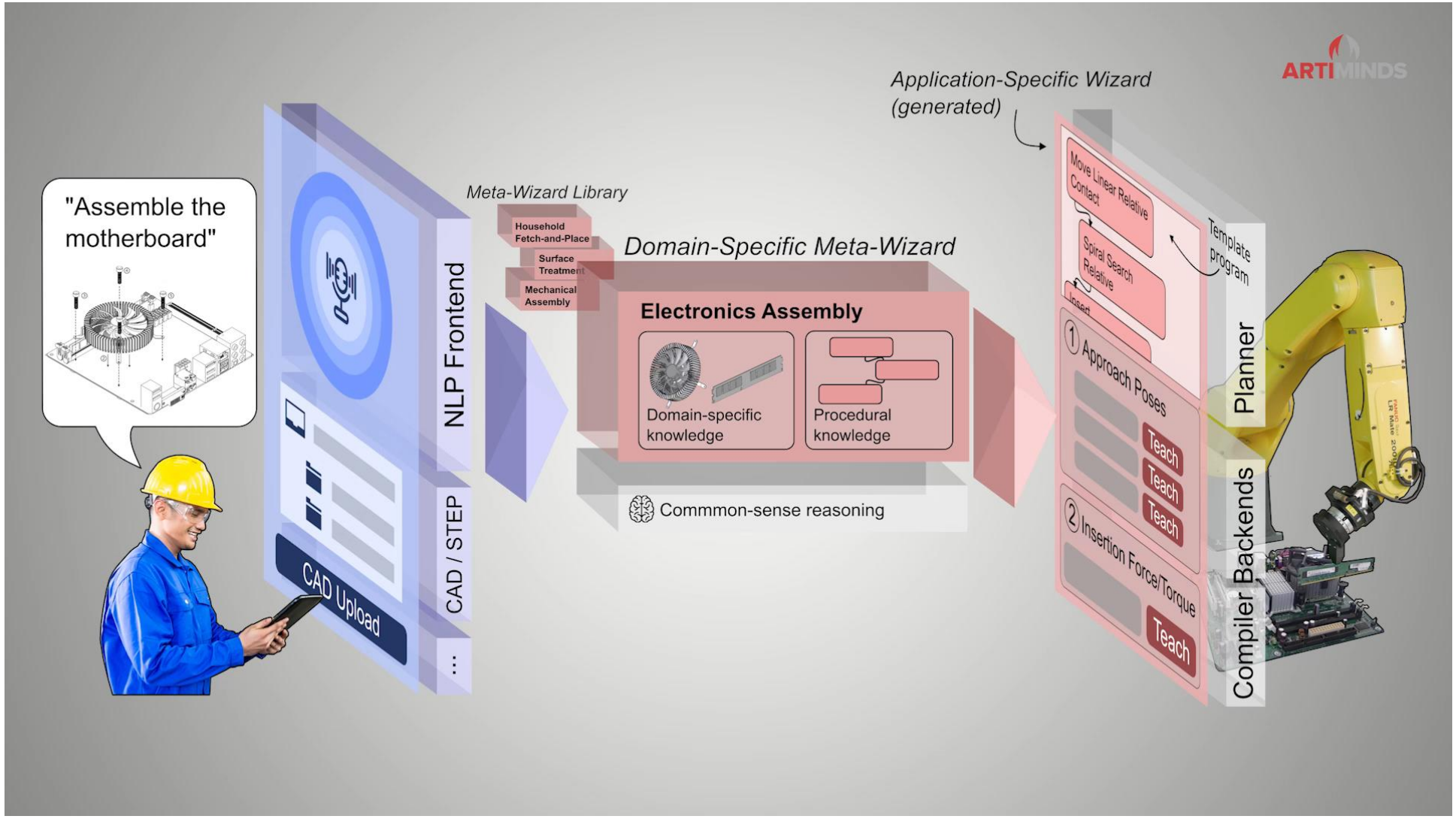
Outlook: AI-based process setup



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ArtiMinds Robotics GmbH

Interested in learning more?

Feel free to reach out to us.

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