We are Well Versed in:

Identification and Commissioning of Control Systems for Electromechanical Axes

Preparation of identification procedures for motion control applications up to industrial utilization

Feedback Controller Design for Mechatronic Systems

Multiple design specifications and extended control structures (e.g. hybrid force and position control) up to implementation in industrial drive systems

Control Loop Performance Monitoring in Drive Control

Development of monitoring functions for electromechanical axes

Set Point Value Generation

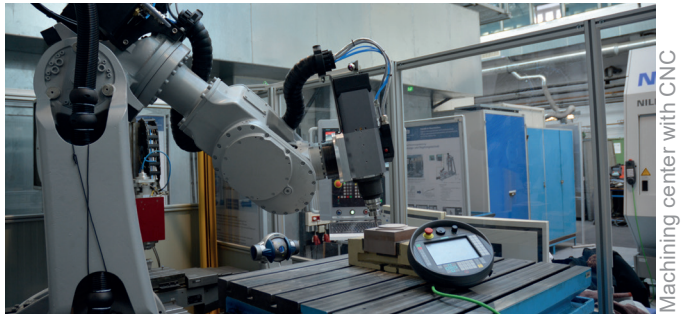
Path planning for robots and machine tools

Development of Automation Concepts and Feedback Control Strategies for Specific Problems

Implementation of complex motion control solutions for state-of-the-art controllers and drive hardware

Control and Monitoring of Production processes

E.g. force-controlled burnishing



Machining center with CNC controlled robot

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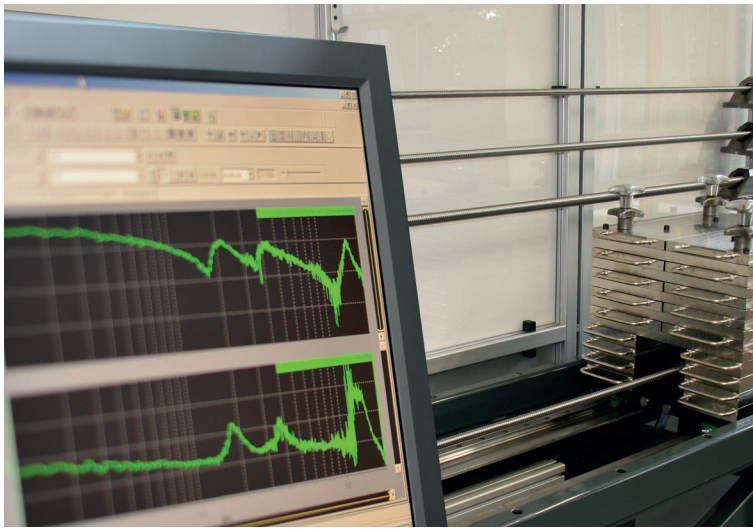


... we will control this matter for you

We are working on research and development tasks in the field of mechatronic systems, focusing on mechanical engineering and production.

Data recording on machine tool

What We Offer:

Concepts

- Development of automation solutions and feedback control strategies for specific problems

Network

- Network „META - Manufacturing 4.0 through development and transfer of progressive automation solutions“
- Support of small and medium-sized enterprises (SMEs) in the field of manufacturing technology by developing smart monitoring and automation solutions

Identification

- Investigation of dynamic characteristics (simulation, modeling) of mechatronic systems

Feedback Controller Design for Mechatronicn Systems

- Consideration of oscillatory control plants
- Consideration of special design specifications (dynamics, robustness, adjustment effort) and application of higher controller structures

Control Loop Monitoring

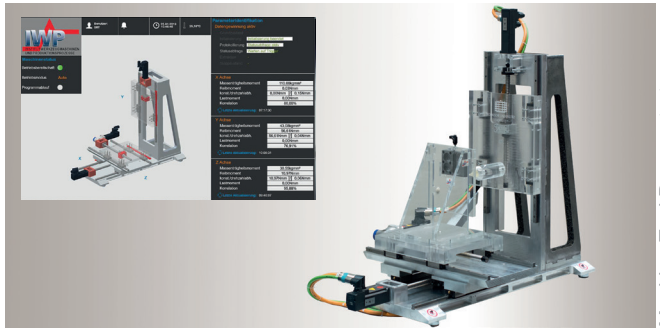
- Acquisition, fusion and algorithmic compression of existing control and sensor signals
- Generation of easily interpretable indicators for the control behavior (e.g. dynamics, energy efficiency) and detected vibrations
- Monitoring of control systems through long-term comparison
- Control implementation and evaluation

Tools

- Tools for data acquisition, transport and archiving of selected controls (CNC, MC, PLC)
- Provision of controller design tools and commissioning guidelines
- Implementation of complex solutions using PLC, MC and CNC

We are Equipped with:

- Linear motor test rig
  - 3-axis test bench equipped with synchronous linear motors and various mechanical coupling options as well as swiveling functional unit and variation of the load mass of each motor
- Manufacturing center with Comau robot
  - 6-axis Comau robot (130 kg payload, 2000 mm machining radius)
  - 3-axis milling machine Heckert CSK 300
  - Shared drive automation solution via CNC control 840d
- OBERON servo forming unit
  - Technology-oriented press force emulation with variable cutting and spring modules
  - Mutable controller structures and sensors
- Feed axis
  - Comprehensive, measuring equipment for control oriented investigations on ball screw drives with variable drives, loads, sensors and disturbances
- 3-axis machine tool as exhibition demonstrator and practical training test rig
- Motion control test rigs
  - Testing machine demonstrator with Beckhoff universal control
  - Flexible mechanical structures, extensive sensors
  - Simulation of mutable mechanical control plant properties such as friction, variable mass moments of inertia and load moments



Machine Tool Demonstrator