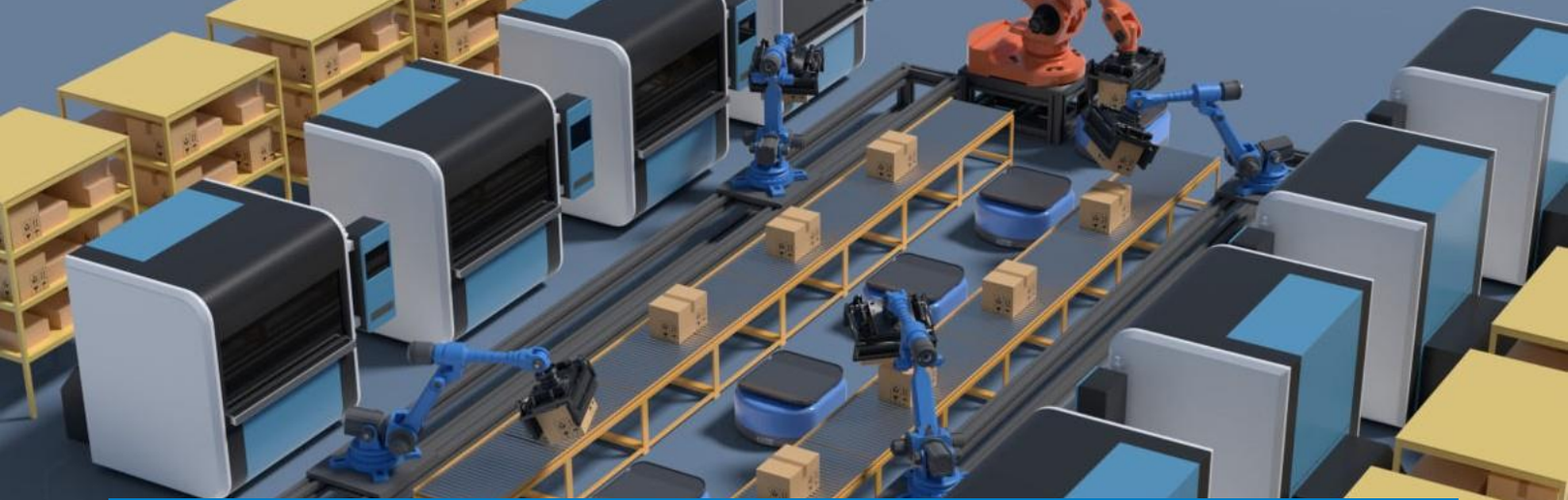

AUTOMATION

In the field of discrete automation, control tasks are typically performed by PLC (Programmable Logic Controller) systems. In the case of continuous and batch processes, Distributed Control Systems (DCS) play a decisive role. The focus of the competence area is on the design and implementation of control systems, which includes the design of the control network and the communication system, the selection and integration of the appropriate hardware and software components, and the implementation of the controlling, data communication and monitoring functions.

COMPETENCiES

- Assess the potential for automation of existing systems and processes with human labour
- Design of DCS and PLC systems
- Design, implementation and diagnostics of industrial communication systems
- PLC programming according to IEC 61131-3
- Development of control and data communication functions
- Implementation of HMI and SCADA systems

INSTRUMENTS

- Examination of automation possibilities of manufacturing and process control systems
- Training of PLC-based control systems
- HMI and PLC programming course
- Design and implementation of PLC systems
- Training of field instrumentation and distributed control systems
- Training of field communication technologies on a continuous technology experimental system

TOOLS

- Wago PFC100 controllers, digital and analog I/O modules, power measurement modules
- Siemens S7-200 and S7-300 controllers, remote I/O modules, communication modules
- Phoenix Contact ILC-130, ILC-350 and PLCnext controllers, digital and analog I/O modules, bus couplers, STME I/O modules
- Festo MPS demonstration system
- Softing PROFIBUS diagnostics tools
- Industrial Ethernet network diagnostics tools
- Interface modules (e.g., RS485/RS422, CAN/USB)
- ABB process control demonstration system
- Continuous technology demonstration system (Emerson DCS, DeltaV Workstation, Rosemount and ABB Transmitters)
- Profibus PA/DP-, Foundation Fieldbus- and wiHART-compatible field devices

REFERENCES

- PLC course for Nestlé Hungary
- PLC+HMI system development for DIPA Ltd