

CP Factory

The Universal Industry 4.0 Training Factory

FESTO



Training for tomorrow's factory

The term "Industry 4.0" represents the fundamental change currently taking place in the production and manufacturing industries. As real-world and virtual reality continue to merge, modern information and communication technologies have become combined with traditional industrial processes, thereby redefining numerous areas of production.

CP Factory (Cyber-Physical Factory) reflects this new Industry 4.0 production paradigm by offering a modular Smart Factory system for teaching and research purposes.

Benefits

- Practical teaching of Industry 4.0 topics
- Thematically holistic Industry 4.0 theory and practice
- Internal differentiation thanks to different application modules
- Two-team stations facilitate interdisciplinary teamwork
- Fast conversion to different training scenarios
- Key topics such as RFID, NFC and cloud computing
- Step-by-step introduction of CPS (Cyber-Physical System)
- Internal differentiation via diverse application modules
- Versatility demonstrated by the autonomous Robotino®
- Flexible robot cells with cameras, to industry standard
- Strong introduction to reliable machine networking
- Covers overarching competencies
- Encourages creativity, systematic thinking and integration competency
- Support for teaching through seminars, workshop and teachware

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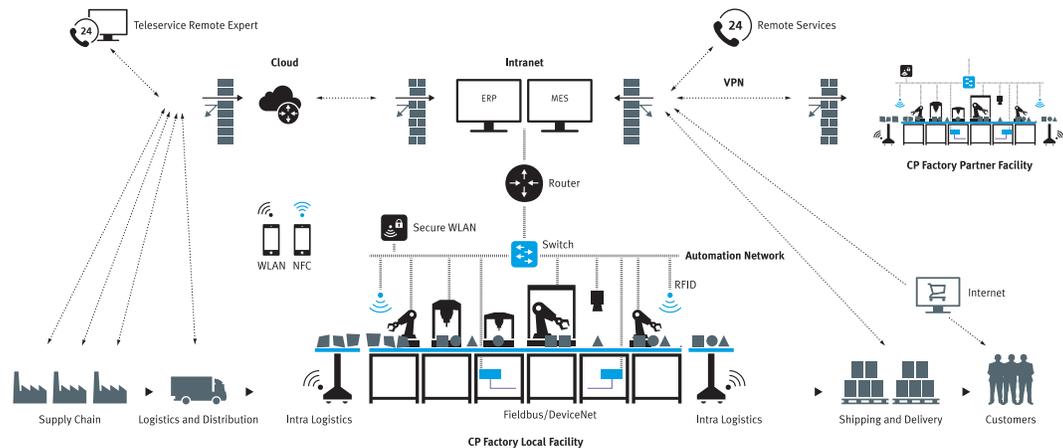
Training topics cover entire value chain

CP Factory illustrates the practical implementation of a networked factory. It is a comprehensive, modular and expandable Industry 4.0 factory model which can be used to represent the entire value chain. Training areas such as assembly line, logistics, production, production planning and control/MES (Manufacturing Execution System), lean production and quality assurance can be represented in didactic terms with this model.

Modular and flexible Industry 4.0 training system

The core of the system is its modularity which enables great flexibility by combining modules in different configurations for training in a variety of applications. The use of standard interfaces for each application module allows the modules to be interchanged in just a few minutes.

Application modules can retrieve and execute processing jobs individually using the unique RFID-provided identification and digital product memory of each piece, facilitating flexible production.



Training and experimentation with cyber-physical systems

Our intelligent opto-electrical sensors are one example of a cyber-physical system integrated into the learning environment. The energy monitoring and energy management option for individual modules expands the training focus to further current topics such as energy-efficient and energy-flexible production.

Global networking

A major prerequisite for the implementation of Industry 4.0 is the seamless networking of machines and plants together with all relevant IT systems, up to and including the Internet. The CP Factory covers all relevant communications systems, allowing a comprehensive simulation of real-world industrial processes.

Technologies in the Industry 4.0 training factory

- Standardized, mobile factory modules
- Transformable production through variable layout
- Open interfaces which conform to industrial standards
- Plug & produce methods
- Flexible material flow through autonomous mobile robotics
- Digital product memory with RFID
- Training with CPS
- MES in SOA (Service Oriented Architecture) structure
- Integrated energy monitoring and energy management
- Simulation with CIROS®

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