Trendsetting automation for the entire value chain - Digital Engineering with SIMATIC Automation Designer

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Agenda

Current demands on the production industry
Digital Engineering with Automation Designer
Outlook: Digital Engineering in the future
The Expectation of Our Customers

Increase of the productivity
despite increasing product variety and shorter life cycles...

... when engineering and operating machines/plants
The Requirements over the life cycle

SIMATIC Automation Designer

demands

Digital Engineering

Outlook

Engineering

Faster from design to production

Tailored automation solutions that grow with your company

Operation

Making production processes flexible while taking account of the overall supply chain

Avoid production failures and reduce maintenance overhead

Digital Engineering – Trendsetting automation for the entire value chain

A&D AS, Weber, 07.07. 4
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The Requirements in the engineering phase

**Engineering**
- Faster from design to production
- Tailored automation solutions that grow with your company
- Making production processes flexible while taking account of the overall supply chain

**Operation**
- Avoid production failures and reduce maintenance overhead

**Digital Factory**
- Seamless integration of the entire tool chain
- Verification through production simulation
- Automatic configuration of resources
- Automatic generation of shop floor data
- Data management for shop floor data
- Simplest usability of powerful tools

The Requirements in the engineering phase

Digital Engineering – Trendsetting automation for the entire value chain
From „digital“ to „real“ factory

The seamless transition from digital process model to real production enables integrated engineering

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Origin of a production plant

**Demand**
- End customer
- General contractor / Plant supplier

**Digital Engineering**
- Proposal/Performance specification
- Specification

**Automation engineering**
- Mechanical engineering
- Electrical engineering
- Automation engineering

**Operational phase**
- Commissioning/Start-up
- Production/Maintenance
- Modernization/Expansion

**End customer**

**Product-development**

**Process-planning**

**Resources-planning**

**Design phase**

**Detailing phase**

**Construction and engineering phase**

**Implementation phase**

**UGS / Tecnomatix**

**SIEMENS**

**Digital Engineering – Trendsetting automation for the entire value chain**
Reusability

- Hierarchical structure of technological components
- Parameterizable templates of resources designed in different software tools
- Mapping with CAD-Layout

- Reusability of resources results in significant time saving
- Enhanced configuring results
- Easy change management results in costs savings

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Automatic project generation

- Generating of symbols, PLC programs, HW configuration
- Rule-based, with consideration given to customer standards
- With freely definable granularity (from block to subsystem)
- Optimum support for SIMATIC CPUs
Openness

for...
- Sector-specific and customer-specific expansions
- Integration into a customer-specific system environment
- Exchange of jointly used data

Automation Designer offers...
- Data interfaces for easy data links
- Function interfaces for a close connection

Customer tools and processes
- Options
- Add-on
- Customizing

SIMATIC Automation Designer

Integration in the customer’s workflow
Integration in a customer-specific tool landscape
Consideration of customer standards
Virtual Commissioning

- Testing of the plant by simulating the process together with the real hardware and real software configurations
- Verification of configuration / training of personnel

The link between Digital Factory and real factory is ...
...real automation hardware and software
synchronous digital manufacturing

In future a digital model of the real factory exists synchronously to the regular business.
The Digital Factory enters the shop floor

The software-tools for plant engineering in the digital factory will be used also for commissioning and plant operation.

- Consistency of data usage
- Consistency of digital and real plant
- Enhanced possibilities for the operational phase
Automation engineering lets the digital factory get real

Thank you for your attention