

Faster Design by automating processes Equals Reduced Engineering Costs

SmartPlant[®]
Instrumentation

THOMAS
industrial network 

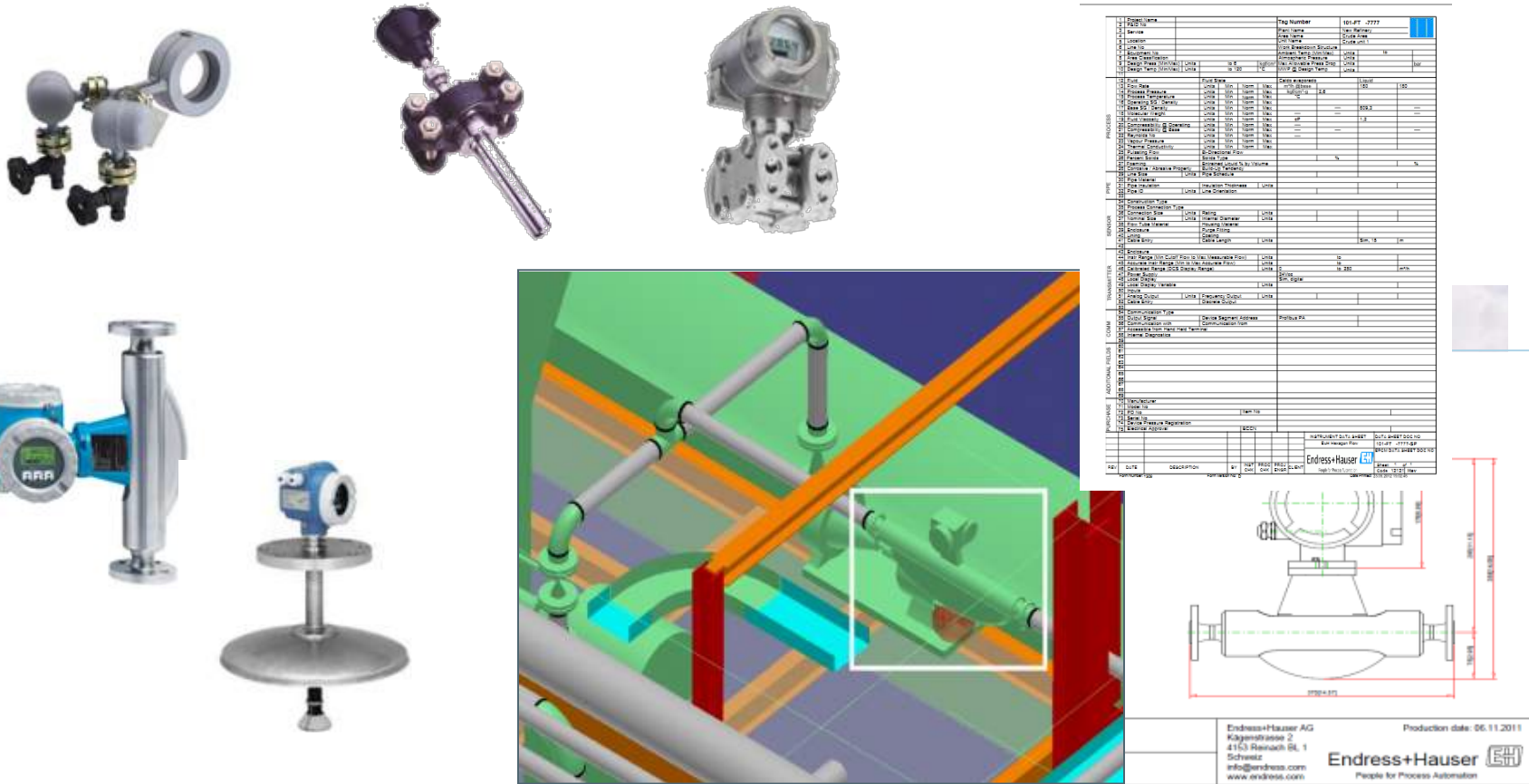


Overview

- Introduction
- Instruments simple components but may variants
- Faster design by automating the processes
- Integrated specification sheet workflow
- Automated creation of 3D Models and 2D Drawings
- Summary

Instrumentation: Simple components many variants

- A typical mid sized process plant might have 10000 instruments that need basic and detailed engineering (selecting, sizing, documenting)




The collage illustrates the variety of instrumentation used in process plants. It includes:

- Three different types of valves and actuators at the top left.
- A blue and silver flowmeter on the middle left.
- A blue and silver pressure transmitter on the bottom left.
- A 3D CAD model of a piping system with an instrument installed, shown in the center.
- A detailed technical drawing of an instrument with dimensions (e.g., 1000x500, 1000x1000, 1000x1000) on the bottom right.
- A technical specification table on the right side of the slide.

| Item No. | Designation | Unit | Material | Quantity | Remarks |
|----------|----------------------|------|----------|----------|----------------------|
| 1 | Flowmeter | 1 | SS 316 | 1 | Flowmeter |
| 2 | Pressure Transmitter | 1 | SS 316 | 1 | Pressure Transmitter |
| 3 | Valve | 1 | SS 316 | 1 | Valve |
| 4 | Actuator | 1 | SS 316 | 1 | Actuator |
| 5 | Instrument | 1 | SS 316 | 1 | Instrument |
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www.endress.com

Production date: 06.11.2011

Endress+Hauser 

People for Process Automation

Linking into customer tools and processes! – Customers do not want more tools – but valid information!

Endress+Hauser Tools



Customer side

SmartPlant
Instrumentation

Customer
Asset
Management
Strategy

Customer
operative needs

Endress+Hauser
Products

Endress+Hauser
Services

Overview of the Endress+Hauser Life Cycle Concept

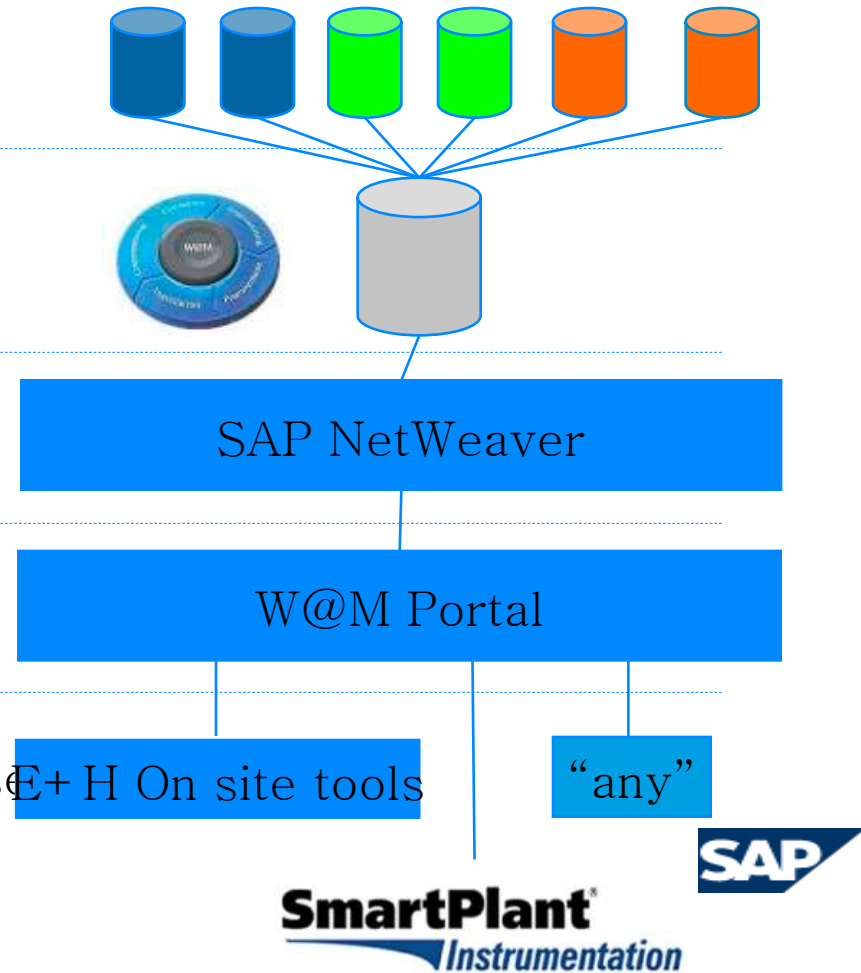
Many different databases (Engineering data, spare parts, certificates, records etc)

Connected via 1 central database (Common equipment record)

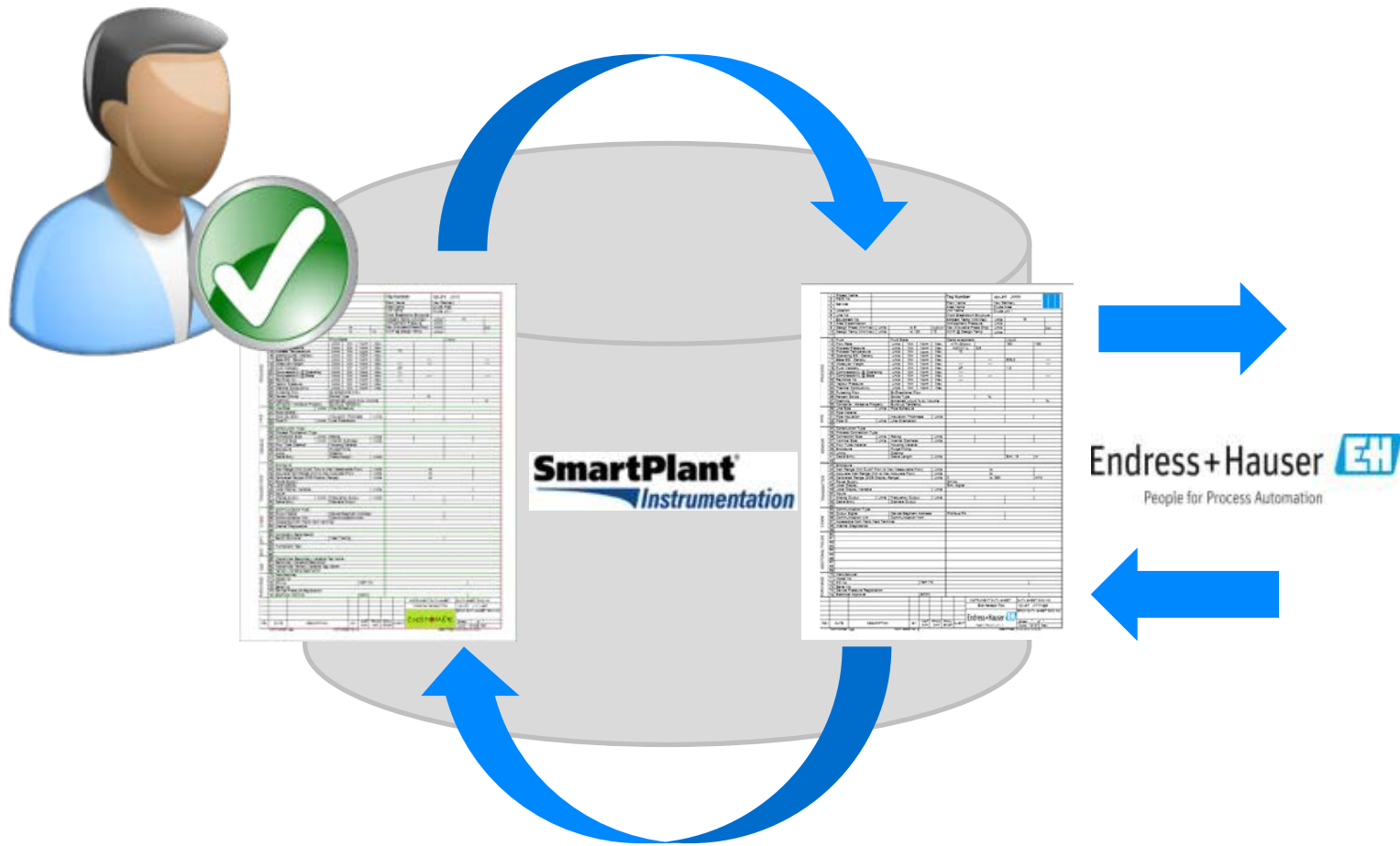
Available via NetWeaver®

W@M provides direct access to ALL Asset information

Existing on-site tools can access these E+H On site tools databases

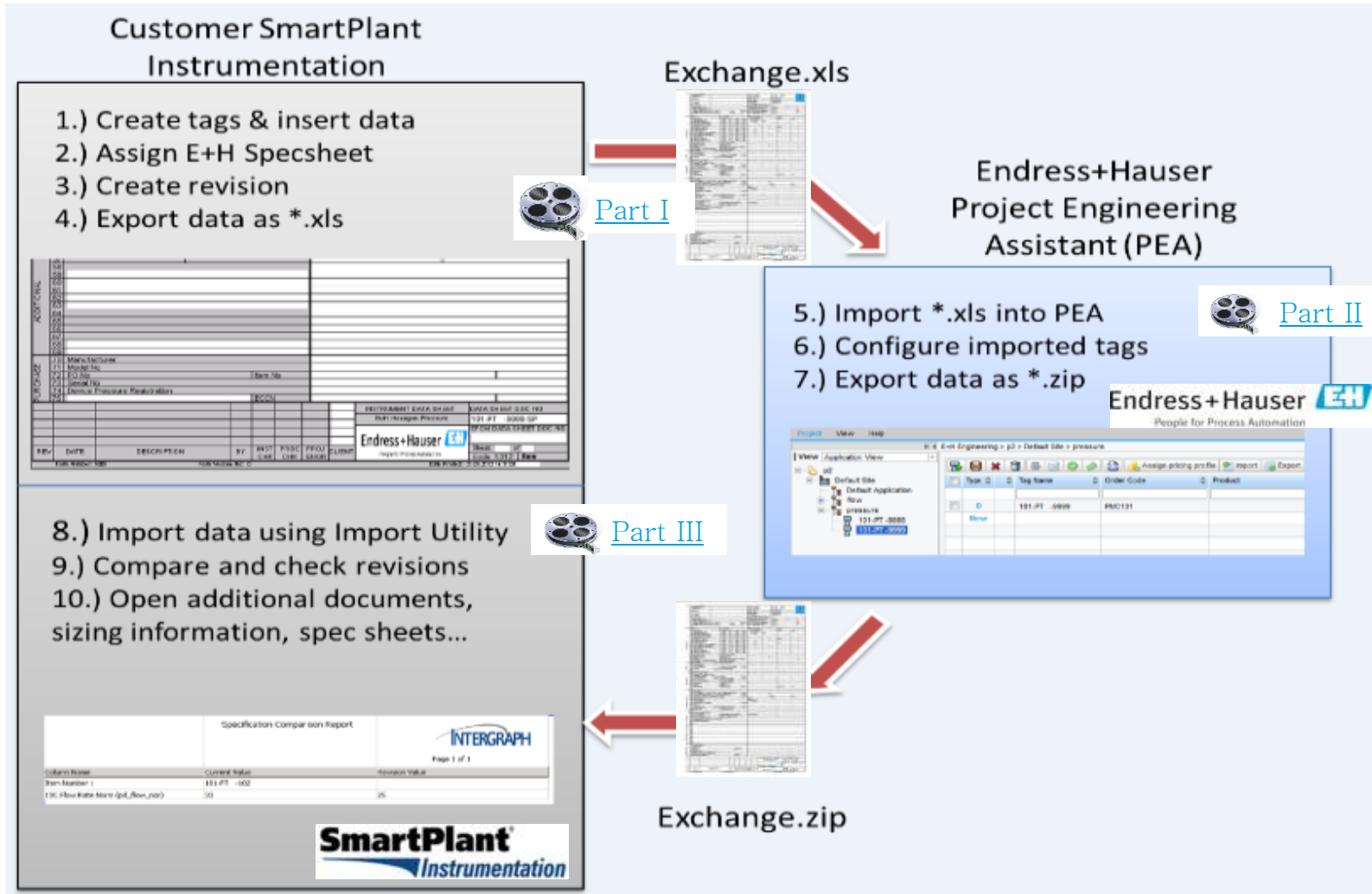


Automated Spec' Sheet Exchange



So you work in SPI and we work in our environment populating the
Spec sheets and adding technical data as required

Data Exchange Process using predefined Spec Forms Workflow Demonstration



SPI Integration: What have we done so far

- Jointly developed the interface and work flow with Intergraph and a Global Customer
- Conducted and passed the “work flow” proof of concept
- Embedded first 21 spec forms into SPI
- Currently ensuring QA for data flow out of SPI into the Endress+Hauser Engineering tools.
- Acceptance testing on all 21 spec forms with customer scheduled for Q4/2013
- First project 7,000 instruments kicks off end of 2013

…but once you have selected the device and provided supplementary documentation what next?

From the specified instrument part number to detailed 3D Models and Drawings

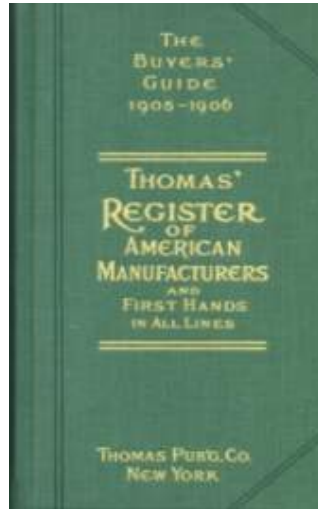
- Endress+Hauser work exclusively with Thomas Net to create their 3D models for import into Smart Plant



| PROPERTY | | Tag Number | 101-87 -7777 |
|----------|-----------------------|-----------------------|--------------|
| 1 | Instrument Name | Instrument Name | 101-87 -7777 |
| 2 | Process No | Process No | 101-87 -7777 |
| 3 | Service | Service | 101-87 -7777 |
| 4 | Location | Location | 101-87 -7777 |
| 5 | Unit No | Unit No | 101-87 -7777 |
| 6 | Process No | Process No | 101-87 -7777 |
| 7 | Design Temp (Min/Max) | Design Temp (Min/Max) | 101-87 -7777 |
| 8 | Design Temp (Min/Max) | Design Temp (Min/Max) | 101-87 -7777 |
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Partner – Thomas Industrial Network




- Unit of Thomas Publishing Company, operating since 1898
- Formerly known for the Thomas Register of American Manufacturers industrial print directory.
- Operate the world's largest online B2B industrial vertical website focused on connecting industrial buyers and sellers – www.ThomasNet.com
- They have a CAD engine it can output 3D/2D drawing's in all commercially available format
- Endress+Hauser work exclusively with Thomas Net to create their 3D models for import into



3D Model, 2D Drawing Creation – Demonstration

| | | Tag Number | | 101-87 - 7777 | |
|-----|-----------------------------|------------|-------|---------------|------|
| 1 | Process Name | | | | |
| 2 | Process No. | | | | |
| 3 | Service | | | | |
| 4 | Location | | | | |
| 5 | Unit No. | | | | |
| 6 | Equipment No. | | | | |
| 7 | Unit Description | | | | |
| 8 | Design Class (Optional) | UNIT | IS 8 | IS/ST | UNIT |
| 9 | Design Temp (Min/Max) | UNIT | IS 32 | IC | UNIT |
| 10 | Design Temp (Min/Max) | UNIT | IS 32 | IC | UNIT |
| 11 | Fluid | Fluid Name | | | |
| 12 | Process Pressure | UNIT | UNIT | UNIT | UNIT |
| 13 | Process Temperature | UNIT | UNIT | UNIT | UNIT |
| 14 | Design PS Density | UNIT | UNIT | UNIT | UNIT |
| 15 | Design PS Viscosity | UNIT | UNIT | UNIT | UNIT |
| 16 | Process PS Density | UNIT | UNIT | UNIT | UNIT |
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 [Part IV](#)

Summary 3D Models, 2D Drawings

- Project with Thomas Industrial Network kicked off 01 July 2012
- First 105 Endress+Hauser Instrument Types currently being modeled. On track for release end of 2013 for internal Endress+Hauser use
- Market release planned Q2/2014
- Approximately 35 products currently adapted with additional attribute data for import into Smart Plant. Creation completed, final QA ongoing.
- Next batch of instruments assigned for 2014...mainly new product models and special variants on existing products

Summary – Reduced Engineering Cost?

The newly designed workflow is paperless, eliminates manual entry errors and we estimate reduces the engineer's work time by a minimum of one hour per data sheet. With the ability to map changes, it also ensures traceability of work across the design to the procurement stages and into the plant operations phase.

Once a device is specified then 3D Models and 2D drawings are accurately created. Another hour is saved

In a the design of a typically sized plant with 10,000 devices, saving two hours per device amounts to ten man years of engineering time

Want to find out more visit us at our Booth 308/309

