Process Device Profiles Come to Life

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Endress + Hauser

Process application

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Personas

Isabelle

Instrument Technician

Cassie

Control Systems Engineer

Sam

Security Architect

Edward

Instrument Engineer

Ned

Network Engineer

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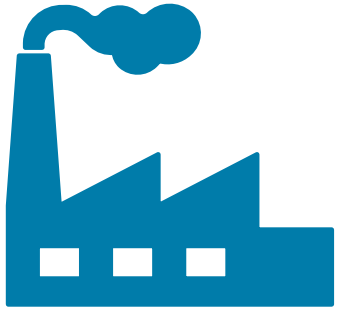
Process Industry needs

Safety

Hazardous area



24/7 Uptime

Configuration

Secure remote access

Process improvement

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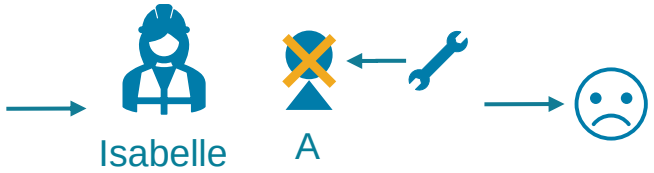
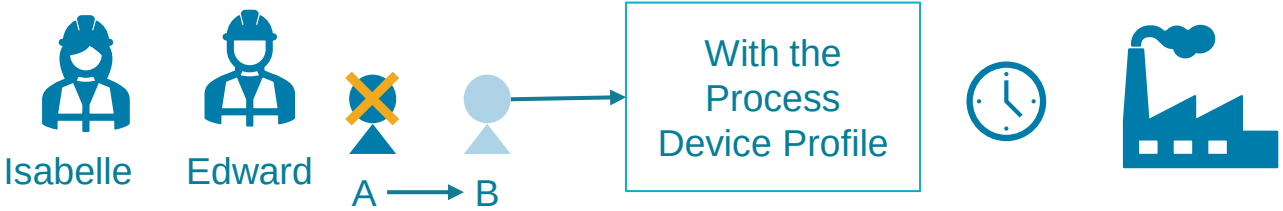
A scenario in a process plant – Device Interchangeability





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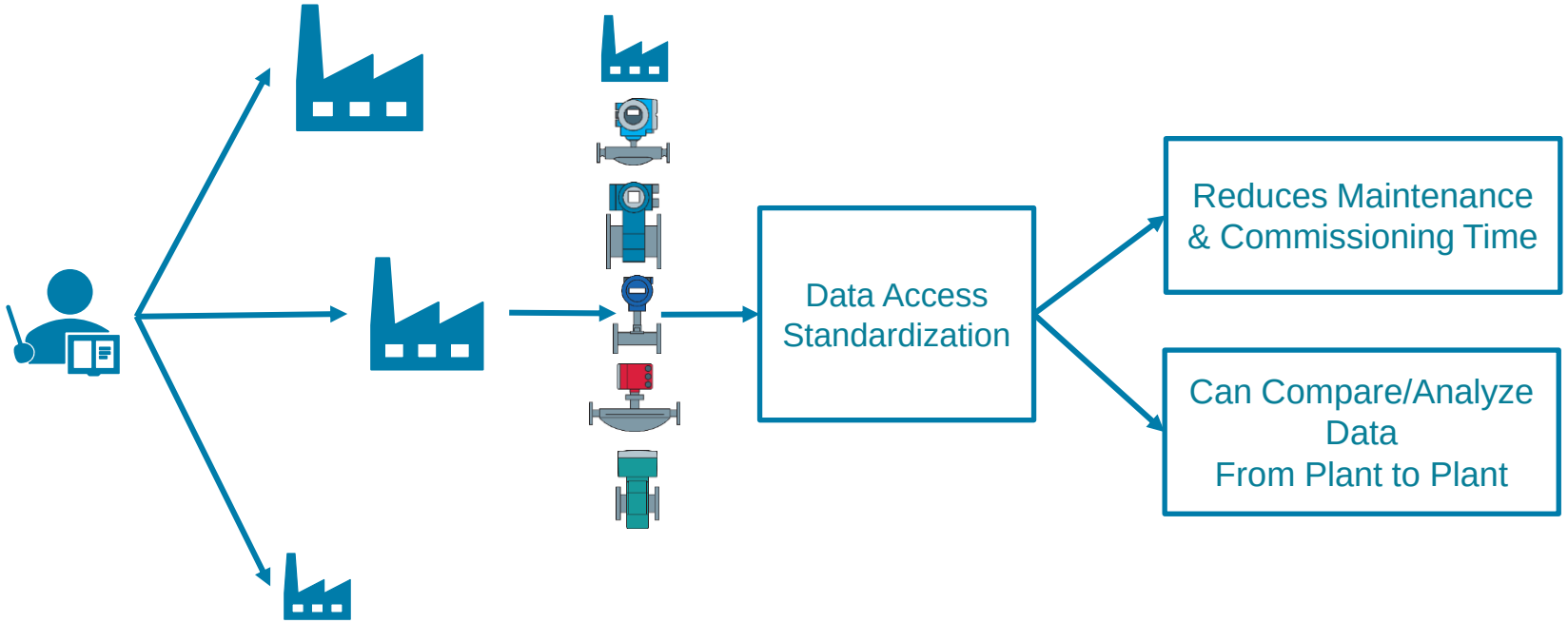
Why Process Device Profiles?



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Why Process Device Profiles?

NAMUR

Reducing Maintenance & Commissioning Time

Compare/Analyze Data from Plant to Plant

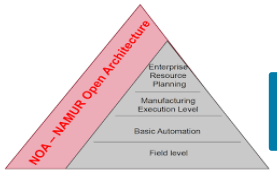
Self-Monitoring and Diagnosis of Field Devices

NE107

Field devices for standard applications

NE131

Open Architecture (NOA)



PA-DIM

Process Device Profile

Integration into PLC/DCS

Interchangeability

Cloud computing Asset monitoring

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What specification enhancements were made?

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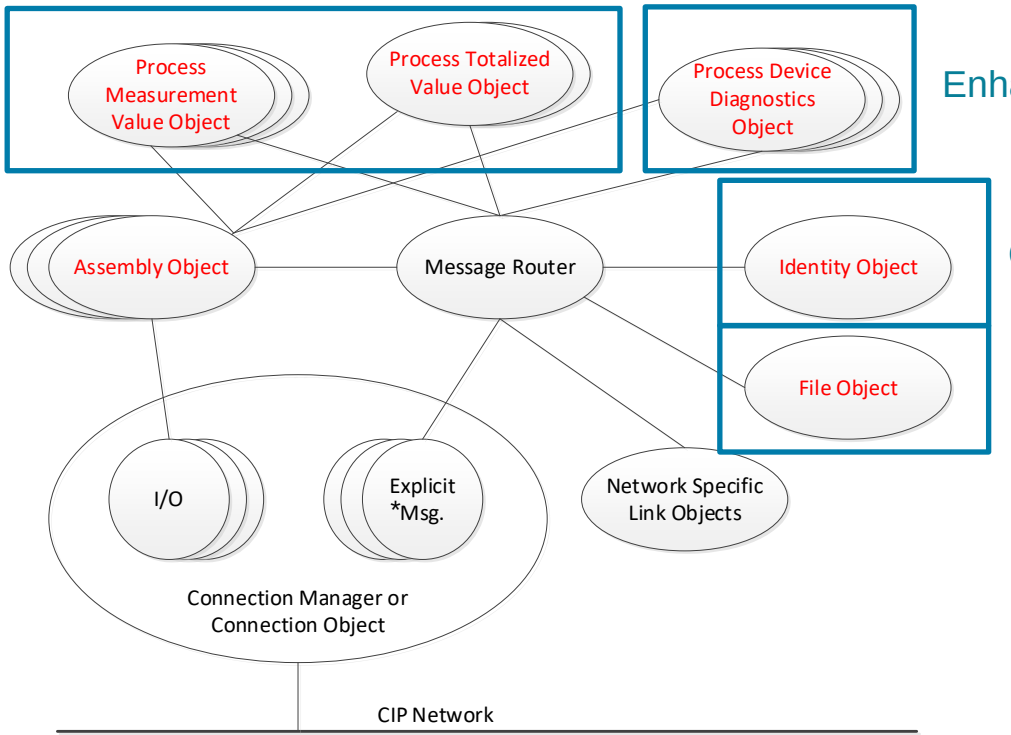
What is Inside the Process Device Profiles?

Volume 1, Chapter 6

New Objects



Enhance Object

Conform with PA-DIM

Profile EDS

Vendor EDS with Profile

* Msg.: Message

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What is Inside the Process Device Profiles?

- Five new Device Types:
  - Standard Pressure, Scaled Pressure
  - Coriolis Flow, Electromagnetic Flow and Vortex Flow

- Added concept of Device Type Revision
  - New Identity Object attribute: *Supported Device Type Revisions*

- New Profile Vendor ID (0xFFFB)
- Standardized NE 107 diagnostic
- PA-DIM alignment:
  - New Identity Object attributes
  - Attributes added in the new process objects

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New Object - Process Measurement Value Object

- Process Measurement Value Object (class code 0x112)
  - Attributes include:
    - Name string
    - Value, Status, Engineering Units
    - Damping, Zero Point, Low Cutoff, etc
  - Supports Simulation of Value and Status
  - One instance's value can be derived from that of another instance
    - Example: "pressure" instance can be used to derive a "level" measurement

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New Object - Process Totalized Value Object

- Process Totalized Value Object (class code 0x113)
  - Totalizer: Total volume that passed through a flow meter over a period of time
  - Attributes include:
    - Process Measurement Value Path (link to Process Measurement Value instance)
    - Double Value (in addition to REAL value), Status, Engineering Units
    - Totalizer Control, Totalizer Reset
  - Supports Simulation through the Process Measurement Value Object

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Enhanced Object - Process Device Diagnostics Object

- Process Device Diagnostics Object (class code 0x108)
  - NAMUR NE 107 based representations of diagnostic information
  - Object supports simulation of reported diagnostics conditions

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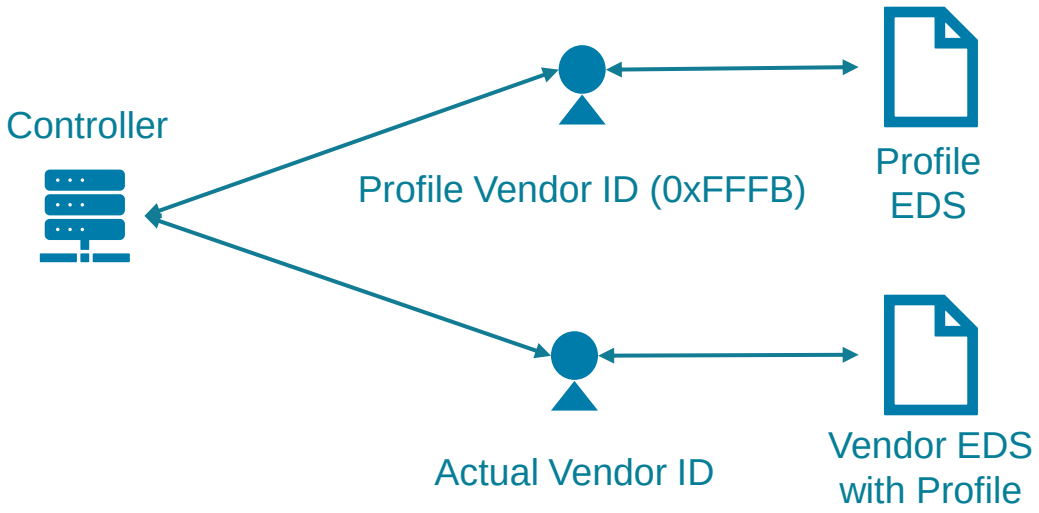
What should vendors keep in mind



ODVA will create and maintain EDS files using the Profile Vendor ID that strictly follow the documented Process Device Profiles

Vendors will create a vendor-specific EDS file to include vendor-specific and profile features

At application design time, users opt for cross-vendor interchangeability by selecting a Device that employs the Profile Vendor ID (0xFFFB).

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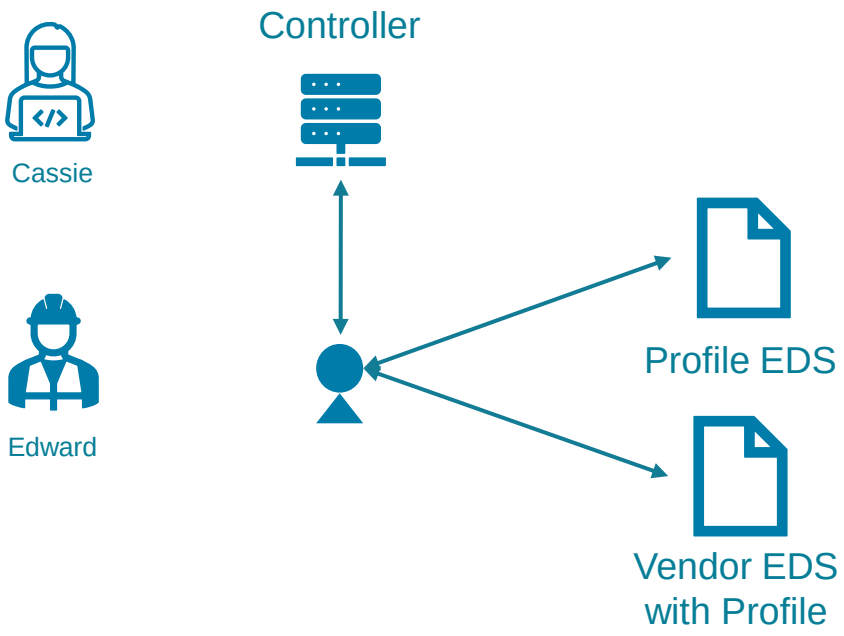
What should end users keep in mind



- Cross-Vendor Interchangeability
- Includes PA-DIM support

- No Cross-Vendor Interchangeability
- Includes PA-DIM support
- Additionally supports Vendor specific features

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The Demonstration

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