



Endress+Hauser

Verlaging van risico's door optimalisatie van IE systeemintegratie

A decorative banner at the bottom of the slide. It has a dark blue background with a red arrow pointing right on the left side. The text 'Industrial Ethernet' is written in white, bold, sans-serif font in the center. On the right side, there is a blue and white abstract graphic resembling a network or data flow.

Industrial Ethernet

Reduction of risk by optimizing IE system integration



Endress+Hauser

Introduction

Endress+Hauser laat in deze presentatie zien hoe bij de bouw van een **nieuwe fabriek** de **integratie risico's** voor het **automatiseringssysteem** tot een minimum zijn beperkt en hoe de **werkprocessen** voor **onderhoud** en **beheer** zijn geoptimaliseerd door de implementatie van een Plant Asset Management systeem op basis van Industrial Ethernet (IE).



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Vreugdenhil company profile



- Vreugdenhil Dairy Foods was established in 1954 at Driebergen. Main office of Vreugdenhil relocated to Voorthuizen in 1964. In 2014 new main office was built in Nijkerk.
- Vreugdenhil is a global player specialising in high-quality milk powders and dairy ingredients for the food and beverage industry.
- Vreugdenhil has three production facilities in the Netherlands
 - **Gorinchem** process milk into milk powders for consumers (milk, yogurt, for cooking ingredient).
 - **Scharsterbrug** process milk into milk powders for industry (ice cream, chocolate, dairy industry).
 - **Barneveld** produces special blends for consumers and industrial sector.



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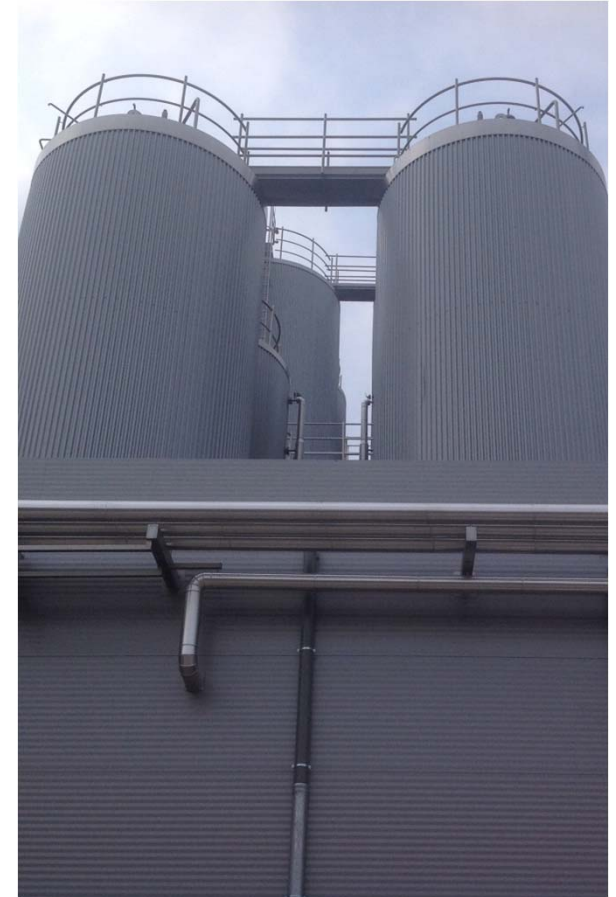
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Reason for new construction

With the expiration of the milk quota system in 2015, Vreugdenhil wants to respond to the changing market.

The construction of their new production facility is intended to deliver a significant increase in production capacity. The fast pace with which the project needed to be realized, demanded an optimum cooperation between all disciplines, processes and stakeholders.

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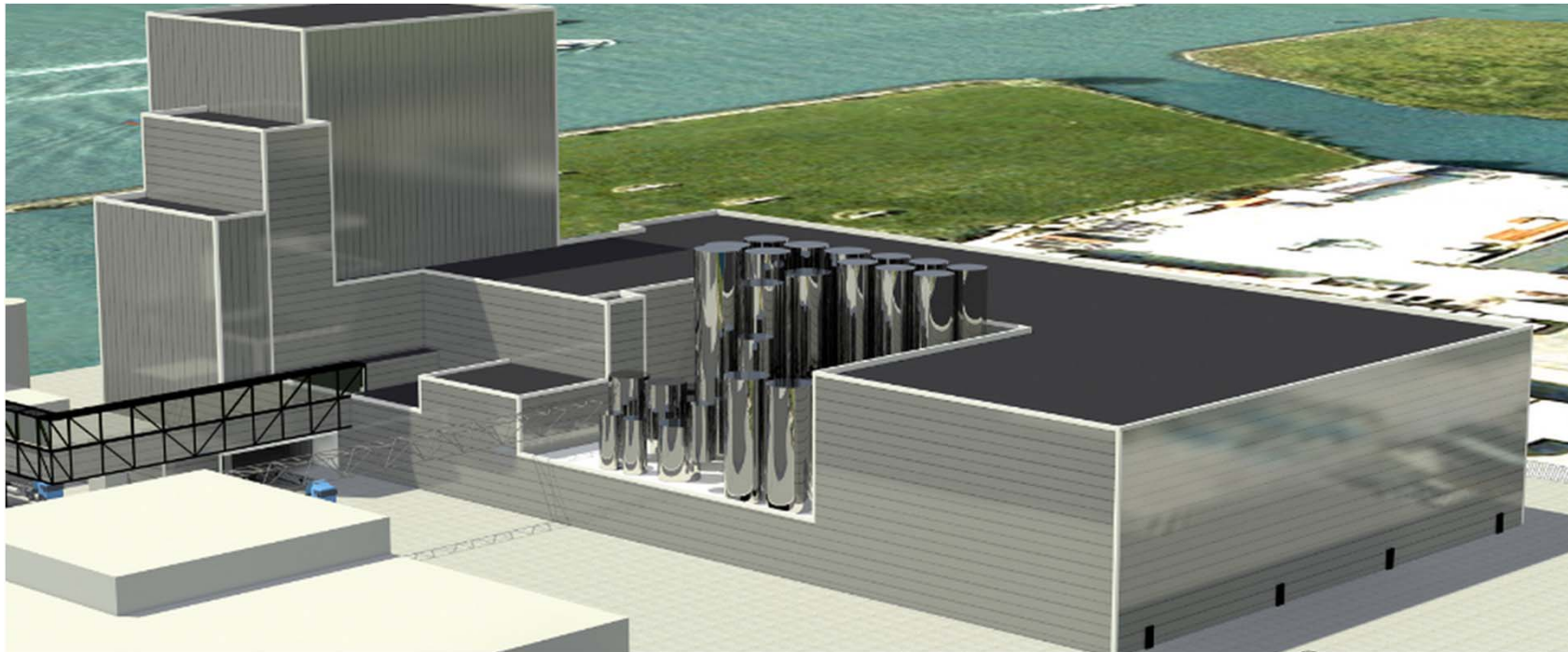
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Construction milk powder factory

- Vreugdenhil Dairy Foods builds a **new milk powder factory** next to the current factory in Gorinchem (operational July, 2015)



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Challenges and Considerations

‘Vreugdenhil innovation is aimed at improving the **production, automation, cleaning time, energy consumption and emissions to the outside.**’

‘Improve effectiveness of packaging lines, introduction of productivity reports, **reducing interruptions, improve and refine standard procedures.**’

The **decrease** in total **energy consumption** compared to 2005 was **16%**




For the construction of the new plant, the most **durable devices** and **systems** are used with the aim to make the plant **20% more energy efficient**

A banner with a dark blue background and a red arrow pointing right. The text 'Industrial Ethernet' is written in large white letters. The background features abstract blue and white geometric shapes.

Industrial Ethernet

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IE enables multi-vendor and multi-protocol interoperable installation

- **Industrial Ethernet** 
 - Variable Speed Drives
 - Operator terminals
 - Energy power monitors
 - Flow measurement (electromagnetic, coriolis mass)
- **Ethernet (HTTP)**
 - Camera's
- **Conventional** 4-20 mA + 
 - Flow (vortex), level (hydrostatic), temperature, pressure, liquid analysis (pH/ORP, Cond, Doxygen)
 - Positioner
- **Fieldbus** 
 - Hygienic valves, gateways



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EtherNet/IP facts

EtherNet/IP™

- EtherNet/IP (Ethernet Industrial Protocol) is an open communications protocol developed in the late 1990's by Rockwell Automation.
- EtherNet/IP was designed for use in process control and other industrial automation applications.
- EtherNet/IP is managed by the ODVA
- EtherNet/IP makes use of existing network infrastructure (Ethernet) so no special hardware is required to implement it.
- EtherNet/IP is built on the standard TCP/IP suite so no special software is required.

ODVA™



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IE is backbone for control and maintenance

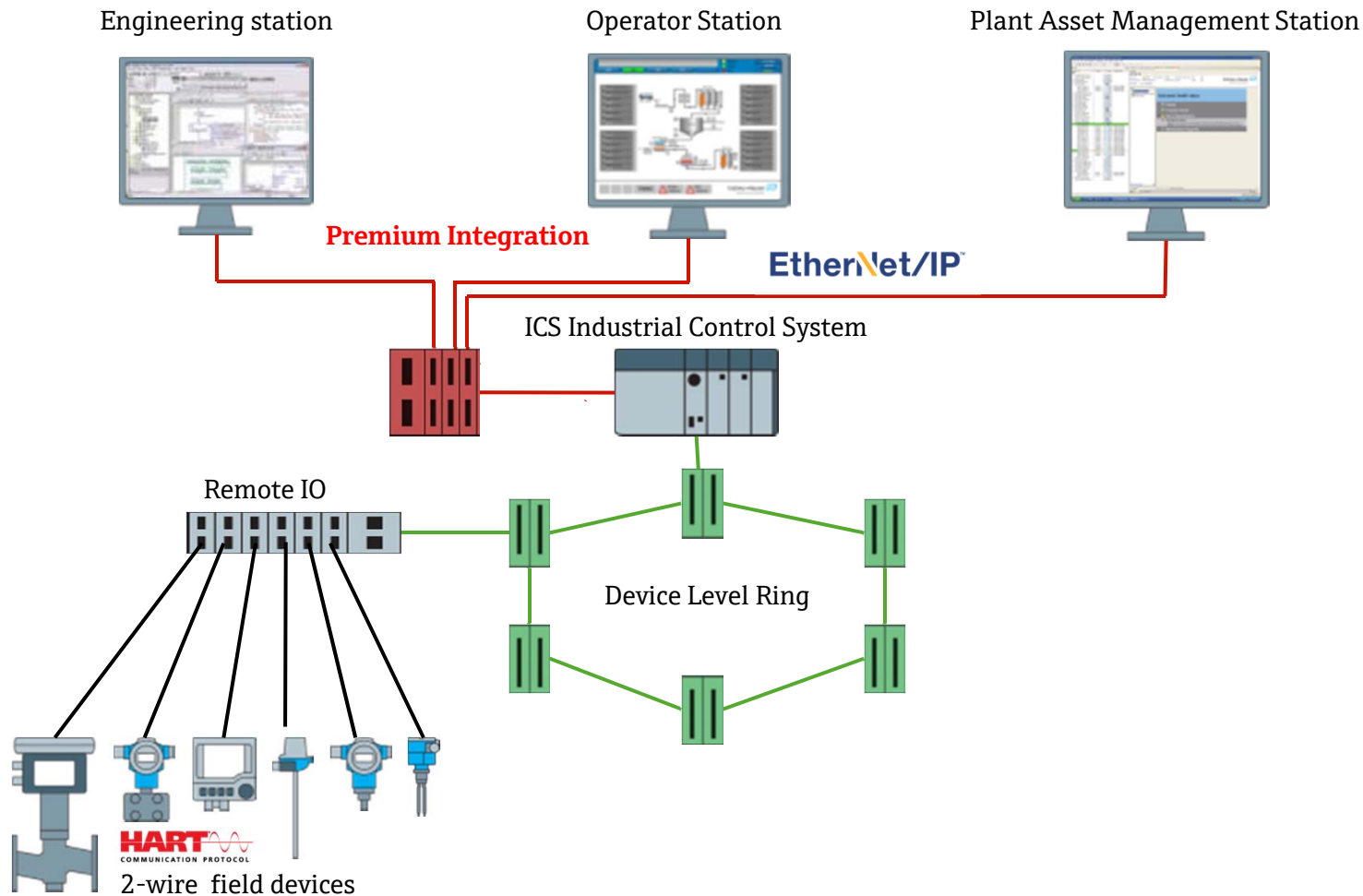
- **Industrial Control System**
(Rockwell Automation Plant PAX)
 - Controllers (ProcessLogix)
 - Managed switches (Device Level Ring)
(AB Stratix 8000, ETAP)
 - Unmanaged switches
 - Remote IO
(FlexIO + HART pass-through)
 - Gateways for building automation (Priva)
and sub-systems (Siemens)
- **Plant Asset Management System**
(Endress+Hauser FieldCare | W@M)
 - FDT/DTM



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IE Architecture



Industrial Ethernet

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Premium Integration for Process Industry

Integrated Device Package

- **Electronic Data Sheets (EDS)**

Can be downloaded from Internet

EDS files are used to identify and commission the device on a network.

- **Add-On Profile (AOP)**

Can be downloaded from Internet

AOP standardize module configuration, reduce programming and configuration errors and increase productivity.



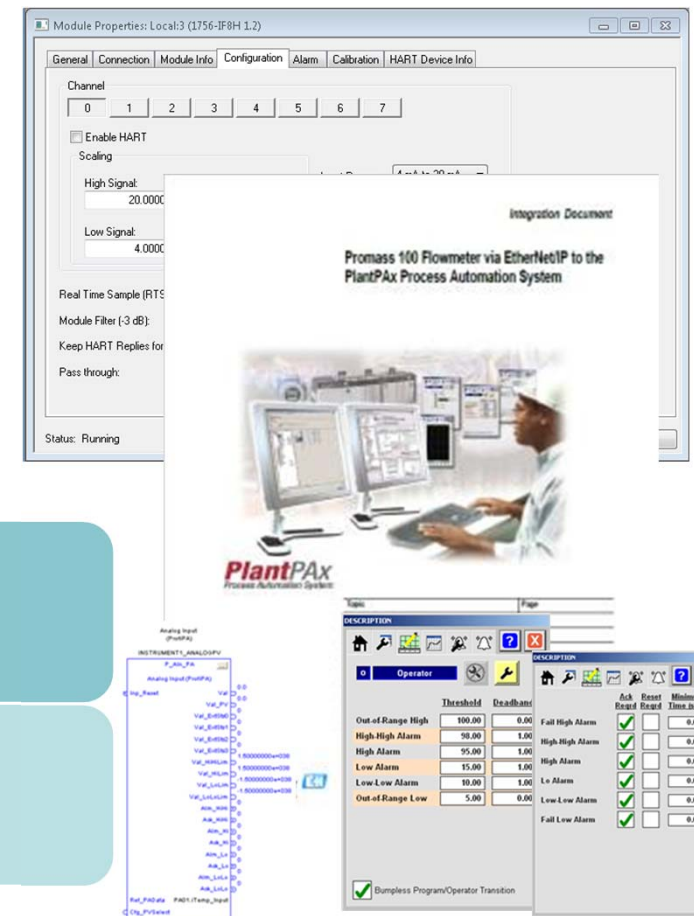
- **System Integration Document**

can be downloaded from Internet

Provides a step-by-step approach for integrating a device

- **Add-On Instruction (AOI) and Faceplates**

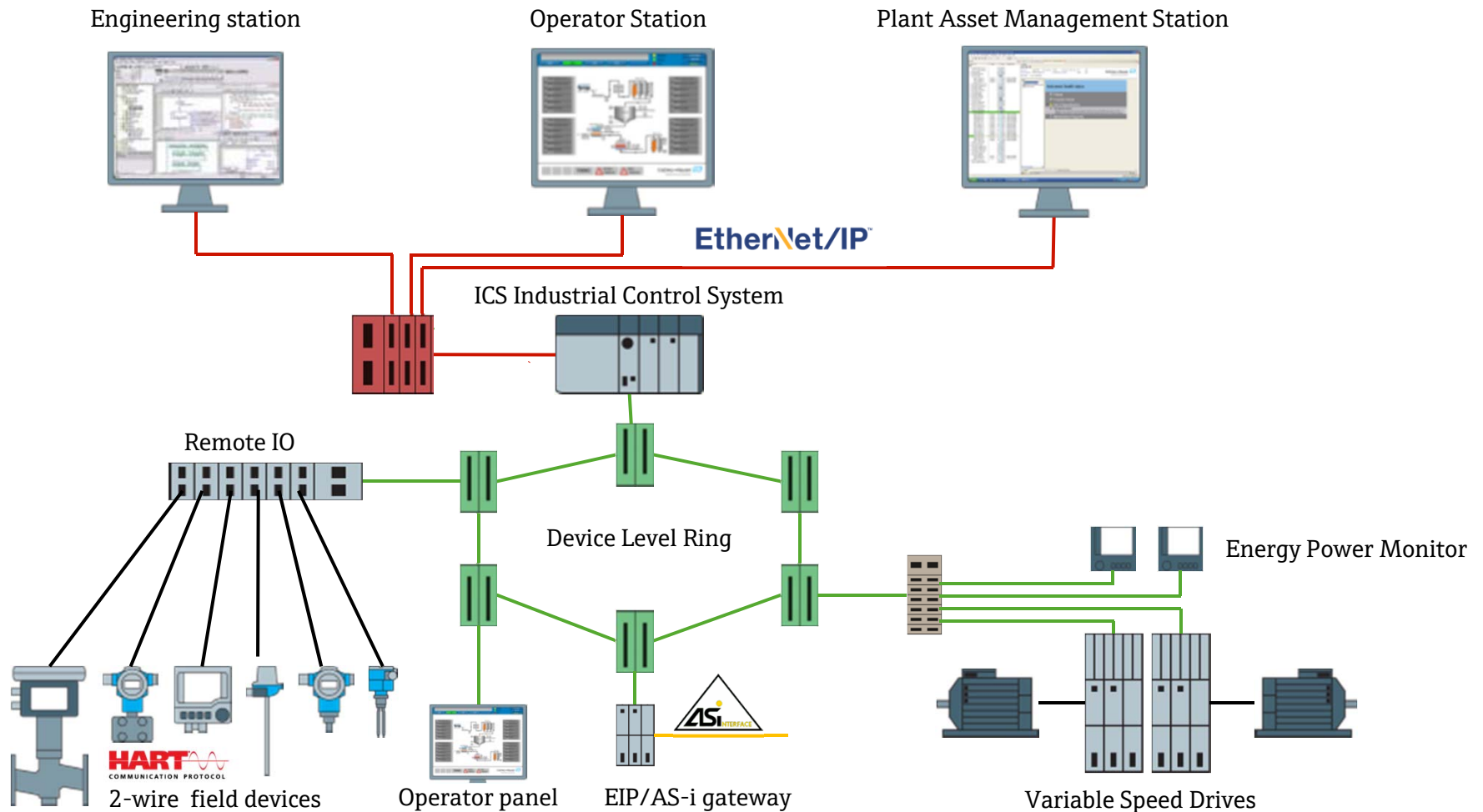
Available within the PlantPAx Library of Process Objects



Industrial Ethernet

Reduction of risk by optimizing IE system integration

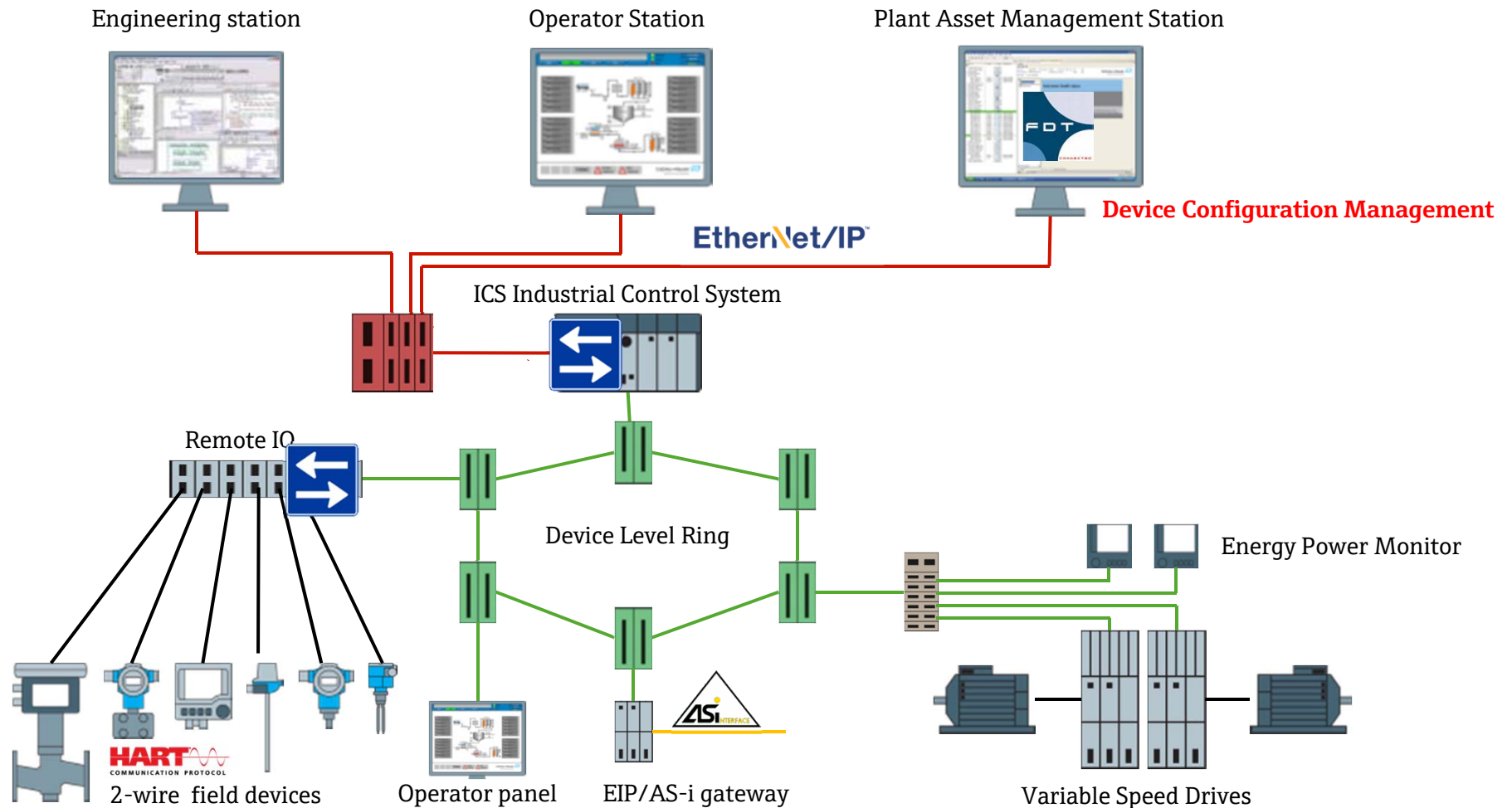
IE Architecture



Industrial Ethernet

Reduction of risk by optimizing IE system integration

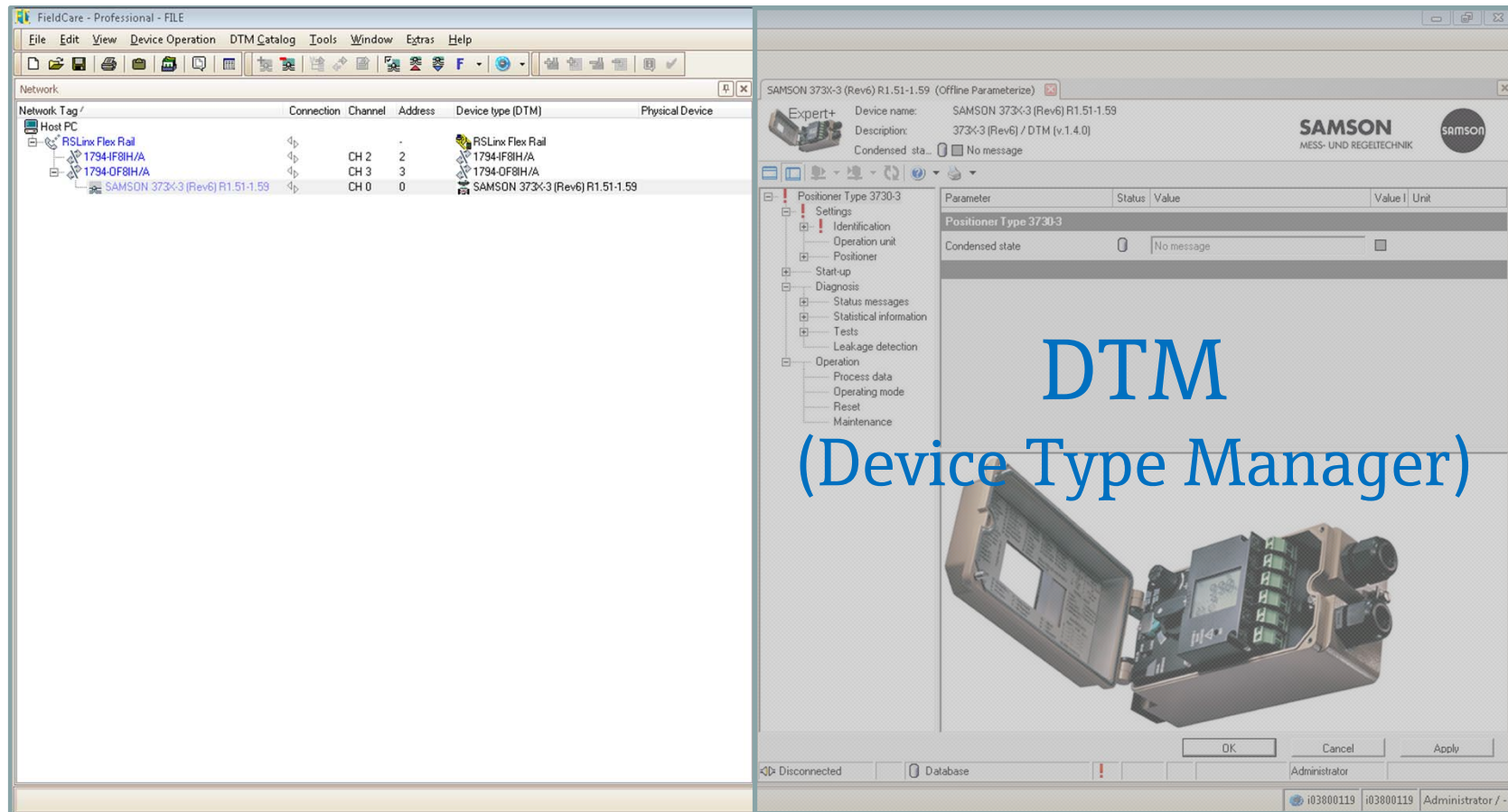
IE Architecture



Industrial Ethernet

Reduction of risk by optimizing IE system integration

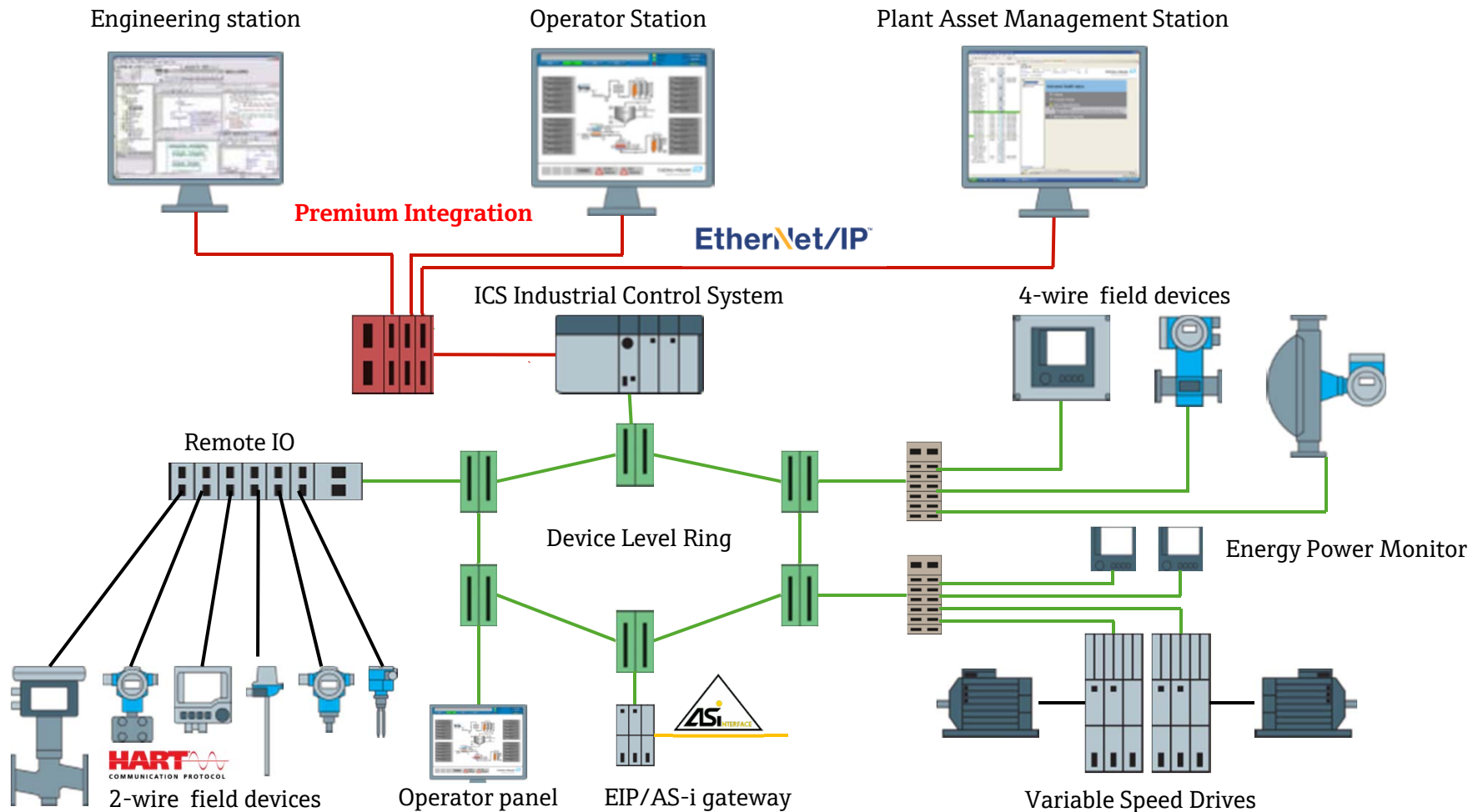
Device Configuration Management



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IE Architecture



Industrial Ethernet

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Premium Integration for Process Industry

Integrated Device Package

- **Electronic Data Sheets (EDS)**

Can be downloaded from Internet and from device

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- **System Integration Document**

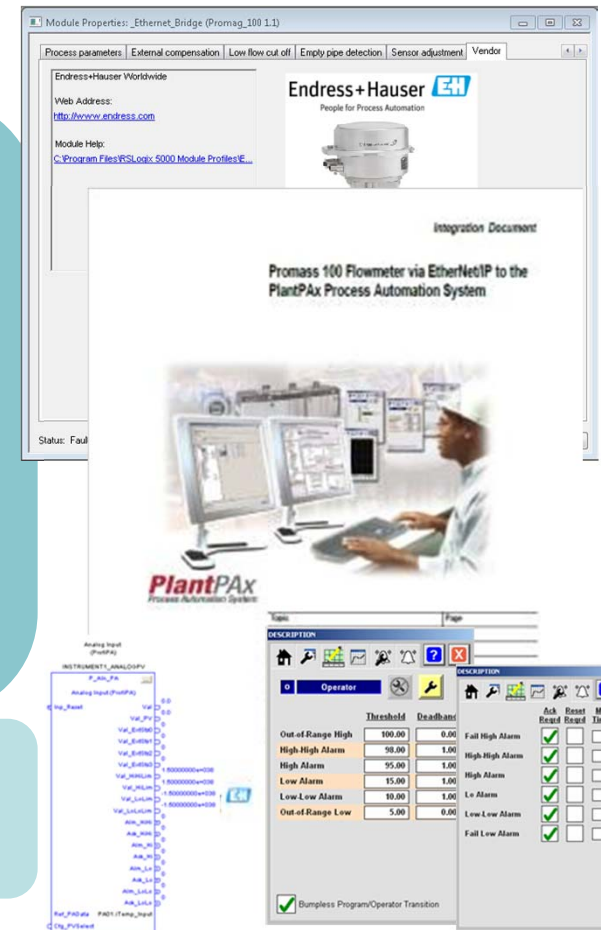
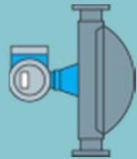
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Provides a step-by-step approach for integrating a device

- **Add-On Instruction (AOI) and Faceplates**

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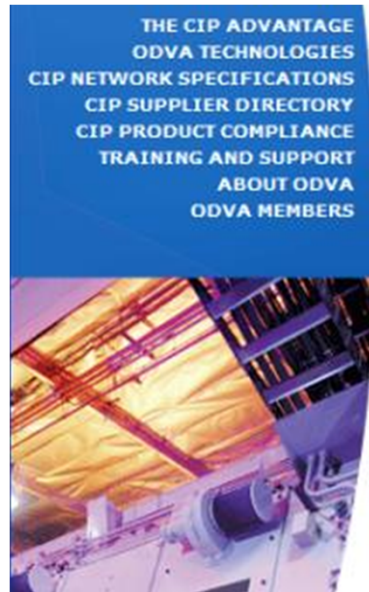
EtherNet/IP™



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EtherNet/IP conformance tested devices



ODVA

Sort By Manufacturer

Sort By Category

Welcome to the EtherNet/IP Supplier Directory. Products in this directory the manufacturer names to view products advertised by ODVA members. supplier directory listings.

Click here to view **Products Sorted by Product Category.**

EtherNet/IP Products by Manufacturer



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Liquiline CM44x

Liquistation CSFxx

Promag 100

Promag 400

Promag 53

Promass 100

Promass 83

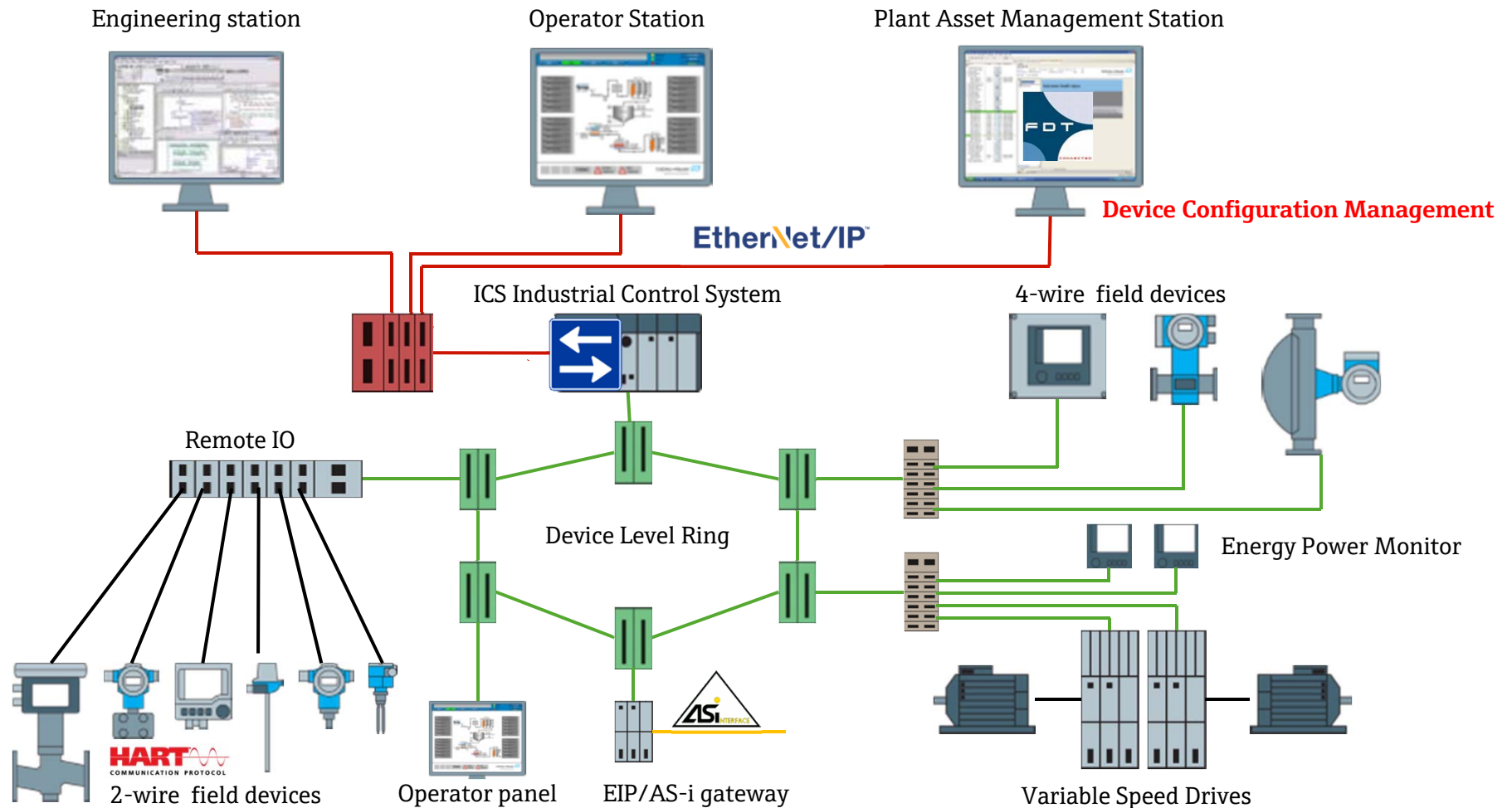


Network Features Supported
Device Profile Type:
Generic Device 0x2B
Total CIP Connections Supported:
Total Max # of connections: 10
Explicit Messaging:
<input checked="" type="checkbox"/> Originator Max # of connections: 10
<input checked="" type="checkbox"/> Max # of connections: 10
I/O Messaging:
<input checked="" type="checkbox"/> (Scanner) Max # of connections: 10
<input type="checkbox"/> Target (Adapter) Max # of connections:
CIP Safety Node:
<input type="checkbox"/> Vendor Specific
<input type="checkbox"/> Safety Discrete I/O
Device Configuration Options:
<input checked="" type="checkbox"/> Hardware Switches
<input checked="" type="checkbox"/> EDS
<input checked="" type="checkbox"/> EDS File Instance in Device
<input type="checkbox"/> Parameter Objects
<input checked="" type="checkbox"/> Custom Software
MAC Parameter Configuration:
Speed: <input type="checkbox"/> 10Mbps <input type="checkbox"/> 100Mbps <input checked="" type="checkbox"/> Auto <input type="checkbox"/> Manual
Duplex: <input type="checkbox"/> Half <input type="checkbox"/> Full <input checked="" type="checkbox"/> Auto <input type="checkbox"/> Manual
Address Configuration:
<input checked="" type="checkbox"/> Hardware Switches
<input type="checkbox"/> BootP
<input checked="" type="checkbox"/> DHCP
<input checked="" type="checkbox"/> Custom Software

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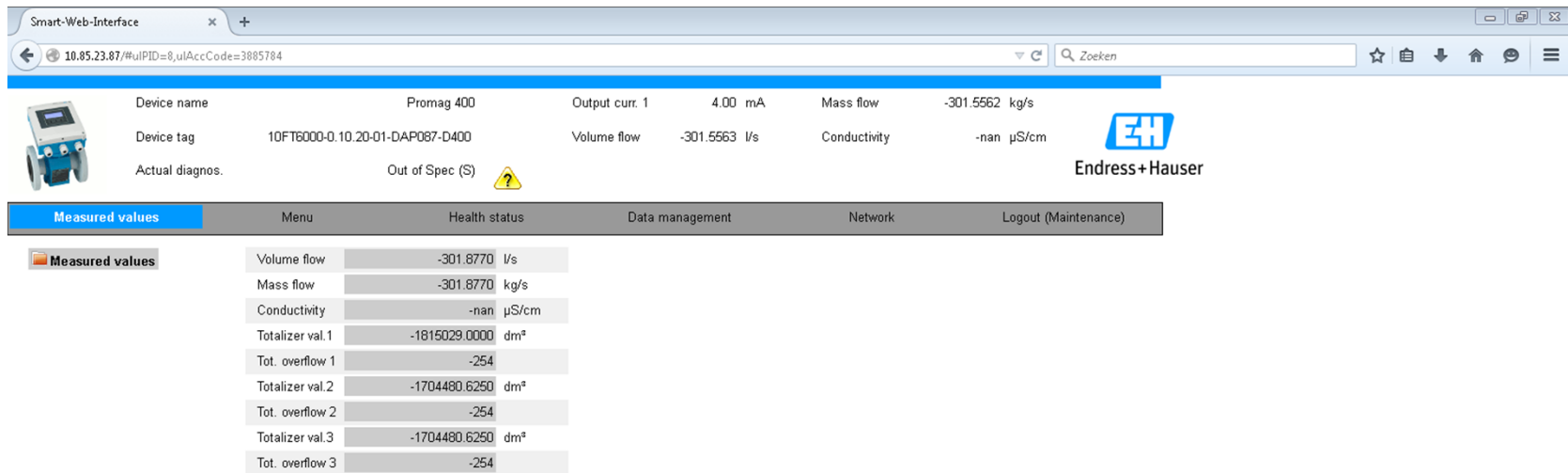
IE Architecture



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Device Configuration Management **EtherNet/IP™**




Smart-Web-Interface

10.85.23.87/#uiPID=8,uiAccCode=3885784

Device name: Promag 400

Device tag: 10FT6000-0.10.20-01-DAP087-D400

Actual diagnos.: Out of Spec (S) 

Output curr. 1: 4.00 mA

Volume flow: -301.5563 l/s

Mass flow: -301.5562 kg/s

Conductivity: -nan µS/cm

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Measured values

Menu	Health status	Data management	Network	Logout (Maintenance)
Measured values				
Volume flow	-301.8770 l/s			
Mass flow	-301.8770 kg/s			
Conductivity	-nan µS/cm			
Totalizer val.1	-1815029.0000 dm³			
Tot. overflow 1	-254			
Totalizer val.2	-1704480.6250 dm³			
Tot. overflow 2	-254			
Totalizer val.3	-1704480.6250 dm³			
Tot. overflow 3	-254			

The integrated Web server provides an overview of all the measured values and the actual/previous system conditions in compliance with NAMUR NE107 including cause/remedy.

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Results for Vreugdenhil

- **Simplicity and speed** for engineering, integration and commissioning of field devices
- **Higher bandwidth** for more services running in parallel on “highway of data”.
- **More flexible**, modular field infrastructure installation.
- **Fewer networks** and hardware to engineer, configure, commission and maintain.
- **Easier integration** into existing Ethernet installations and corporate networks, no special requirements or conditions to meet.



Industrial Ethernet

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Information

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M 06-53729616

Plant Asset Management solutions
Industrial Communication Technologies



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What is coming next?

A horizontal banner with a dark blue and red background. On the left, there are stylized arrows pointing right. In the center, the text "Industrial Ethernet" is written in white. On the right, there is a blue and white abstract graphic.

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