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## L14 - Efficient Process Instrumentation and Asset Management for Easier Diagnostics and Calibration

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# Today's Agenda

- PlantPAx Field Device Integration/Management
- Process Instruments
- Process Device Connectivity
- Process Device Integration Tools
- Process Device Config. and Asset Management
- Lab Overview



# Automation for the Process Industry

## Field Device Integration & Asset Management



## System Core



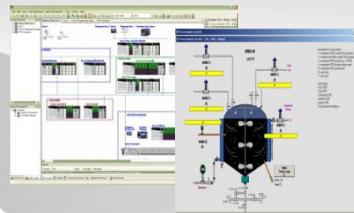
## Process Information



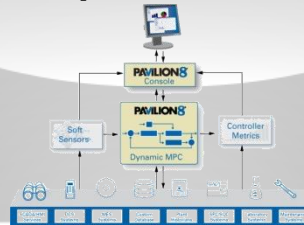
## Batch Management & Control



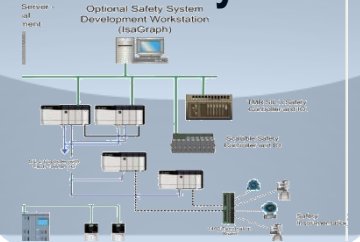
## System Migration Tools



## Process Optimization



## Critical Control & Safety

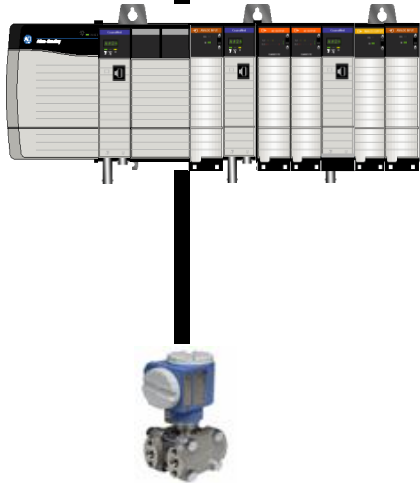


**PlantPax**  
Process Automation System

# Process Instruments Today

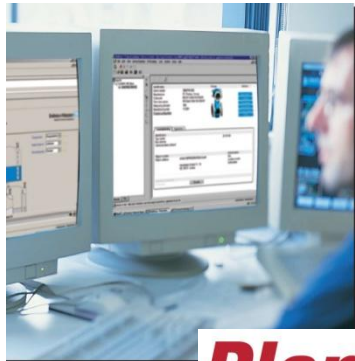


**PlantPax**  
Process Automation System

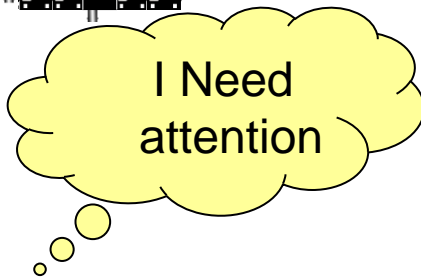


- Smart instrumentation and intelligent I/O bridge the traditional separation between automation systems and field devices
- Results of using Intelligent Devices
  - Network-based instrument configuration
  - Increased diagnostic coverage
  - Predictive and enhanced preventive maintenance
  - Remote servicing

# Process Instruments Today

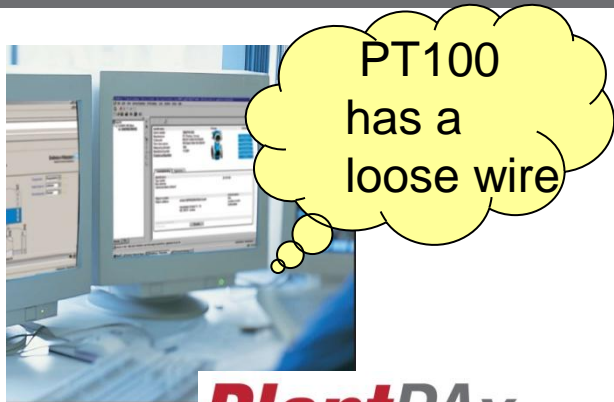


**PlantPax**  
Process Automation System

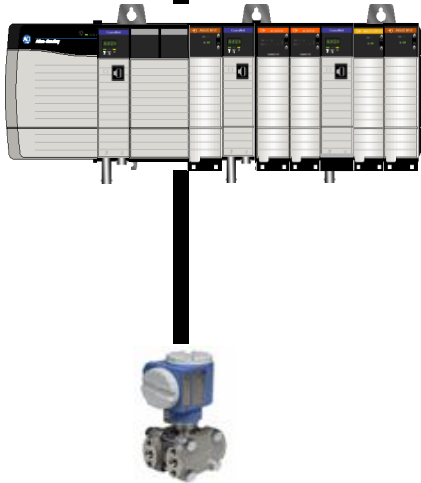


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# Process Instruments Today



**PlantPax**  
Process Automation System



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# Digital Communication

## READ

- PV: Mass Flow Rate
- SV: Totalizer 1
- TV: Density
- FV: Temperature
- Volume Flow
- Std. Volume Flow
- Target Flow
- Carrier Flow
- Calculated Density
- Totalizer 2



**Endress + Hauser  
Mass Flow Meter**

## Write

- Set Flow Units
- Reset Totalizers
- Set Range
  - Zero & Full Scale
- Change K Factor
- Change Pipe Diameter
- Set Flow Direction
- Set “Low Flow Cutoff”
- Make Density Adjustments

Over 32 Million Intelligent Process Devices Sold (ARC, 2007)  
Flow, Pressure, Temp, Level, Analytical and Valve Positioners

# More Field Device Integration Options Than Ever

Engineering Work Station



Operator Work Stations



Asset Management

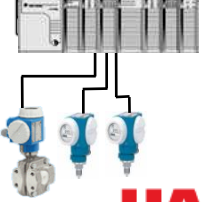


Ethernet (supervisory network)

Process Controller



Compact



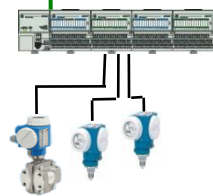
ControlNet

1756 Hart IO



HART COMMUNICATION FOUNDATION

Flex HART



EtherNet/IP

FFLDC



FFLD



FF H1

FF H1

Drives

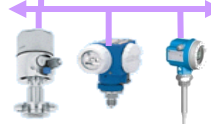
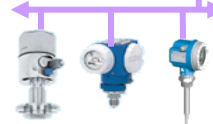


Motor Control Centers

CN2PA

EN2PA

Profi PA



PROFI BUS

WirelessHART



# Device Integration Tools

## Integration Document

- Details on field instrument and control system
- System specifications
- Installation – how to:
  - Connect instrument to network interface
- Configuration – how to:
  - Configure network interface
  - Configure instrument
- Visualization
  - Add-On Instructions and Faceplates



4. Promass 83 Flowmeter via HART to Integrated Architecture for Process Control

**Application Overview** This document provides a step-by-step approach to integrating an Emerson™ Promass 83 Coriolis mass flowmeter into a Rockwell Automation Integrated Architecture for Process Control system.

This Section	Describes
Application overview	Details about the field instrument and control system.
System details	Specifications on the required hardware and software components.
Installation	How to: <ul style="list-style-type: none"><li>• Connect the measurement instrument to the HART I/O module.</li><li>• Connect a HART handheld device.</li></ul>
Configuration	How to: <ul style="list-style-type: none"><li>• Configure the HART I/O module.</li><li>• Configure the measurement instrument and manage parameters.</li></ul>
Visualization	How to implement and configure a graphical display of device information.

The ControlLogix platform provides a full range of input and output modules to span a wide variety of applications. The ControlLogix architecture uses producer/consumer technology, allowing input information and output status to be shared by all ControlLogix controllers in the system.

**Integrated Asset Management**

5. From the Device Operation/Add Device menu, select the RSLinx 1756 Backplane and click OK.

6. To configure the RSLinx backplane, double-click on the RSLinx backplane in the left pane.

7. Click Select Path and drill down to the ControlLogix backplane.

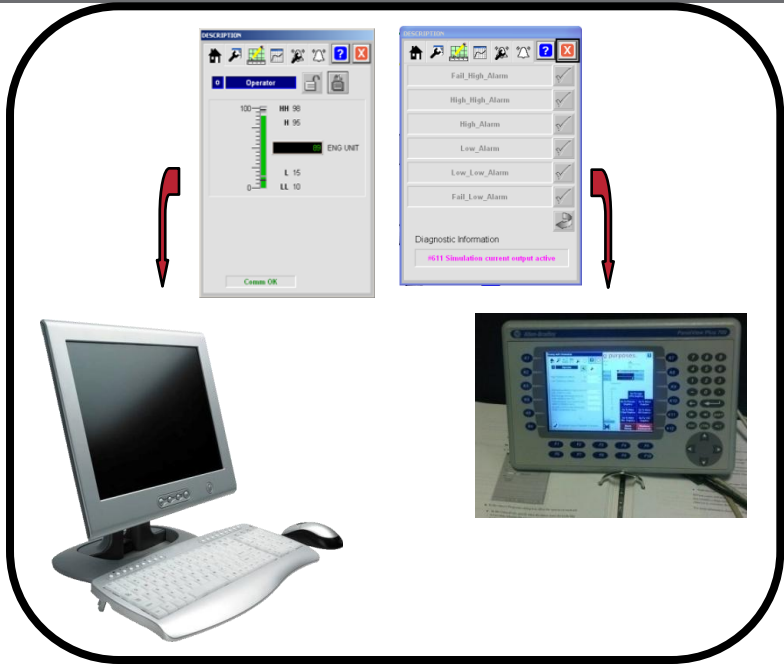
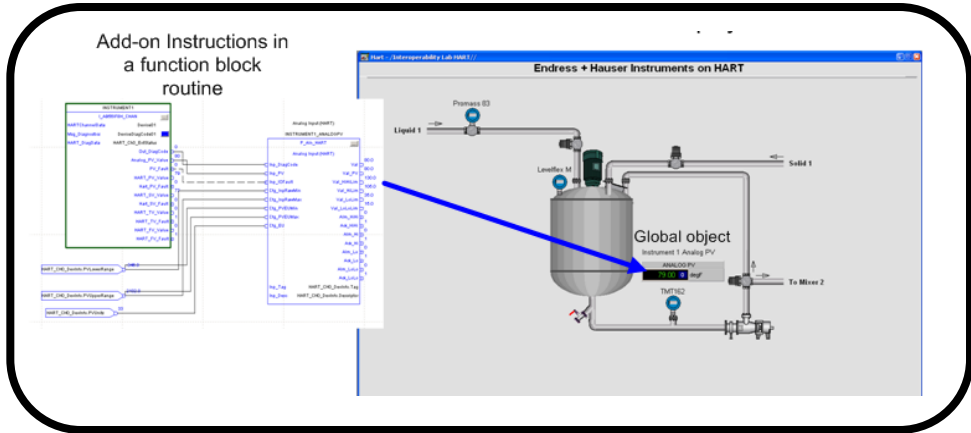
This integration document assumes you have a working knowledge of ControlLogix systems. For more details regarding the equipment and tasks described in this document, see [Additional Resources](#) on page 31.

Publication PROCES-AP006A-EN-P - August 2008

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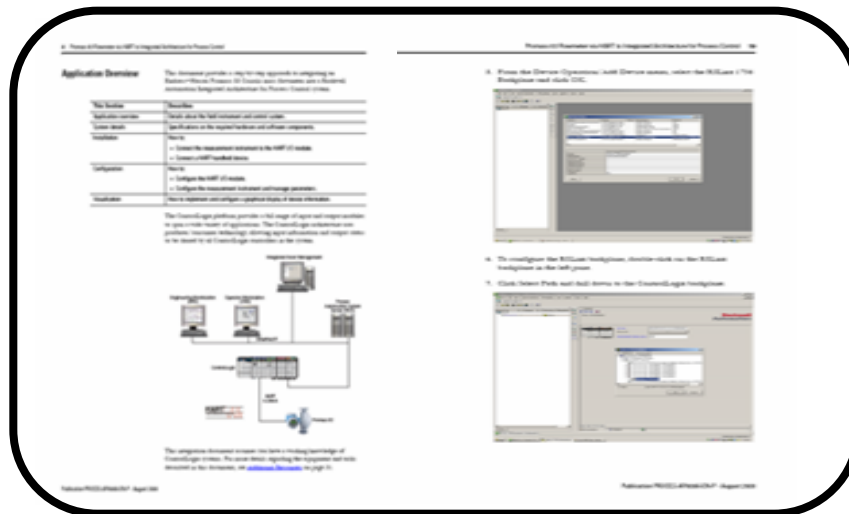
<http://www.rockwellautomation.com/solutions/process/integrationdocs.html>

# Integration Tools Simplify Implementation of Smart Devices



**PlantPAX**  
Process Automation System

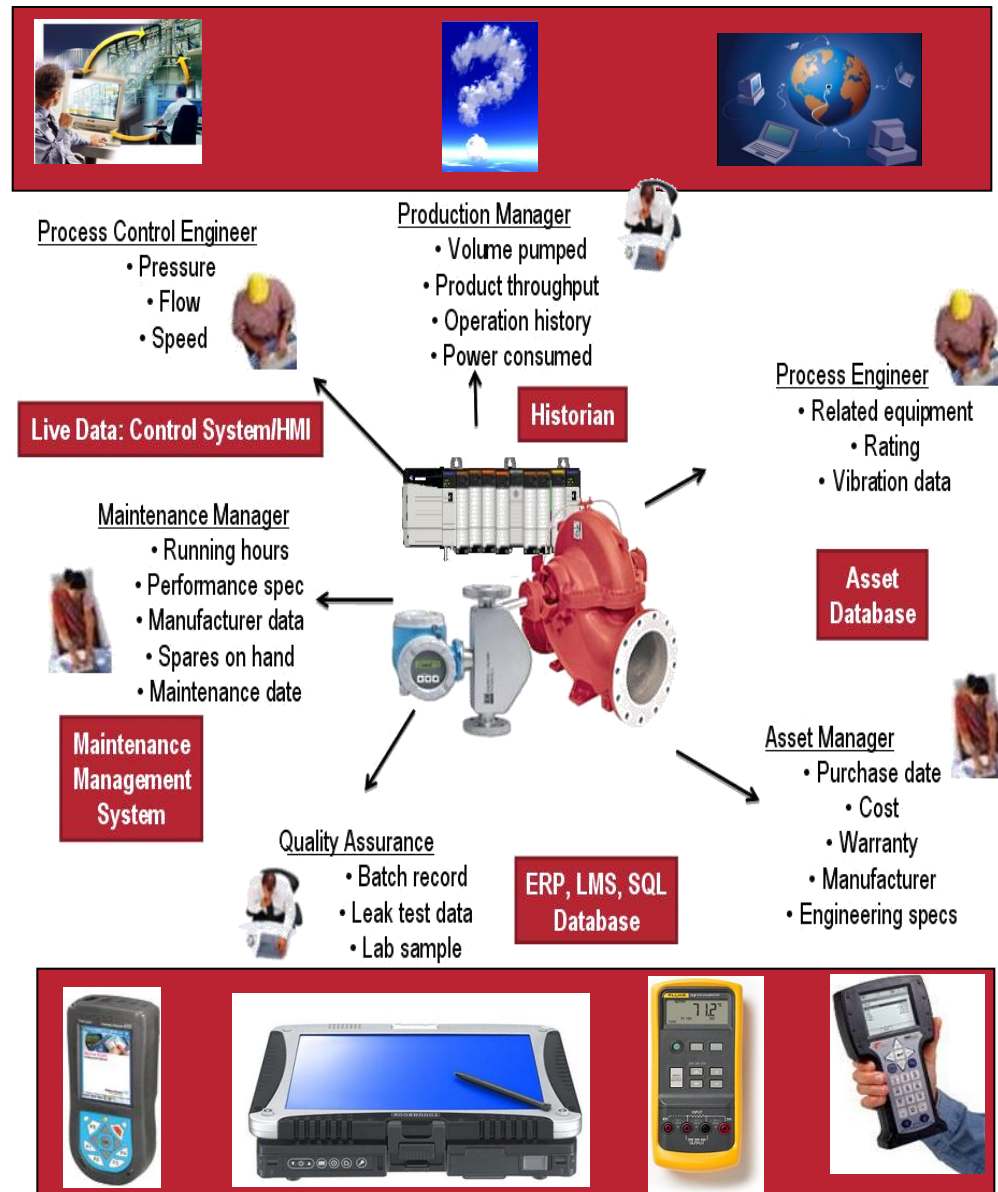
Integration Documents



Application Notes

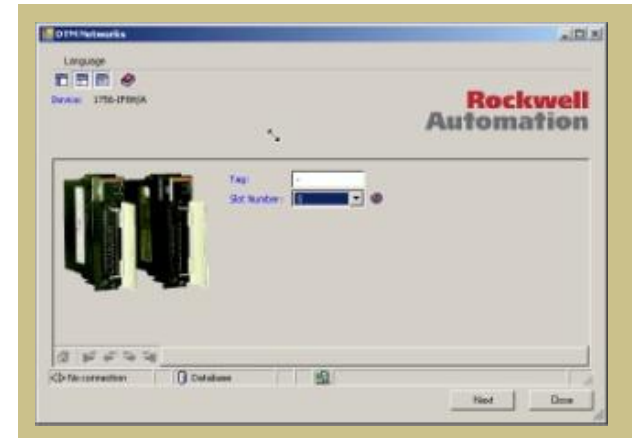
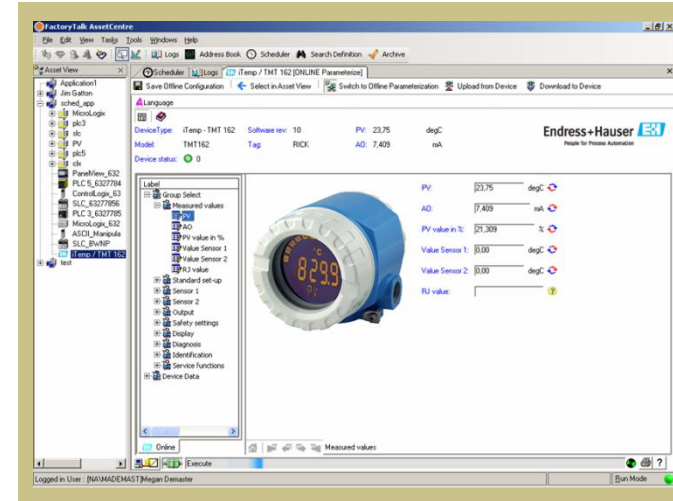
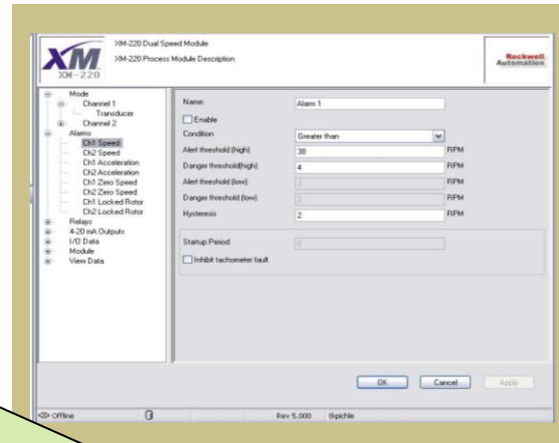
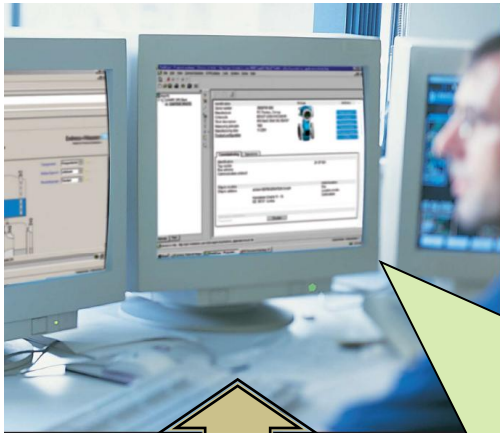
# Device Information throughout the facility

- Using information available in connected assets
- Asset Management is Integrating a variety of functionalities and bringing them together in new ways
- Device Data integrated throughout the organization

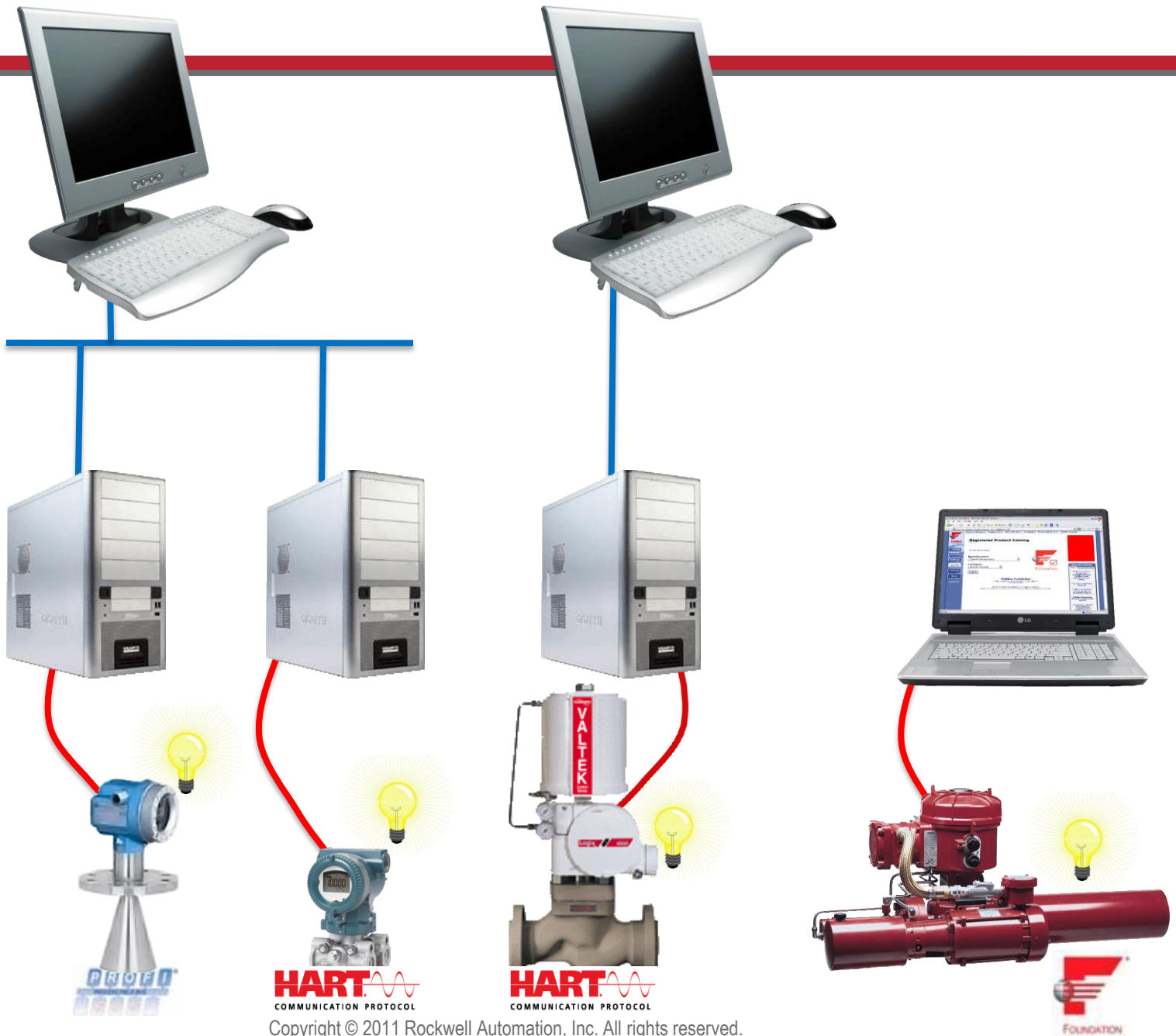


# Standards Based Device Management

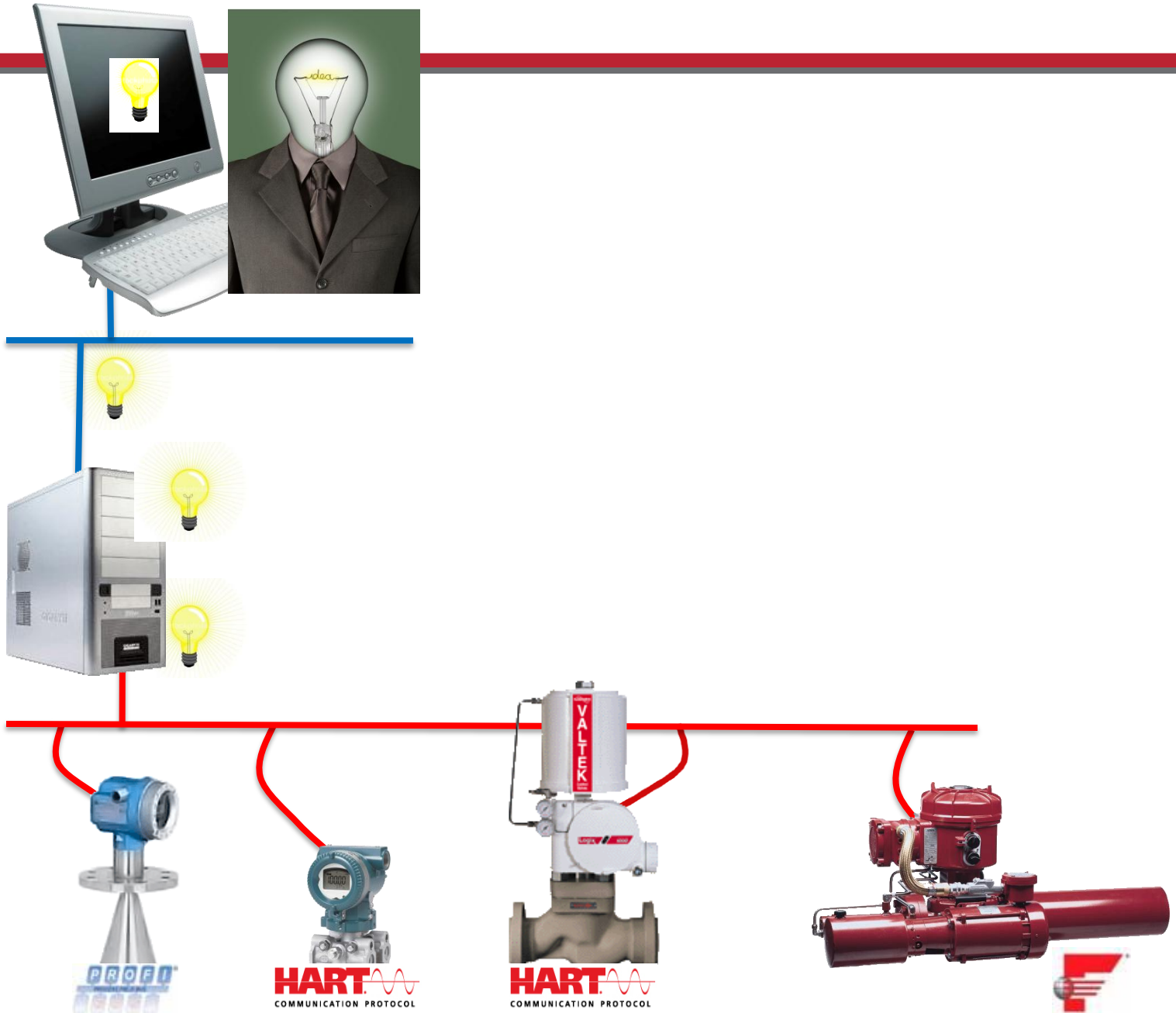
- **Process Device Configuration**
  - Supports a wide variety of field devices and networks



# Without Standardized Technology...



# One Tool Empowering decision making...



# Interoperability: Reduced Risk during Development , Engineering & Start-up...

- Reduced Engineering Costs
  - Faster Deployment Time
    - Improved Quality
  - Implementation Consistency
  - Lower Total Cost of Ownership
- Ensures solid foundation for asset management
- Take integration time and money savings and apply to asset management activities

# PlantPax HART Lab Overview

1. Configure the HART CerabarS using Process Device Configuration (PDC) in FT AssetCentre.
2. Setup Logix Project (Controller and IO) with RSLogix5000.
3. Download Project to Controller using RSLogix5000.
4. Setup Pop-up Faceplate on a Graphic Display using FT View Studio.
5. Open the modified Graphic Display in FT View SE Client and View Faceplate Parameters.
6. Optional: Open ProCal in FT AssetCentre and perform a mock calibration.



# PlantPax Foundation Fieldbus and Profibus PA Lab Overview

1. Configure the CerabarS and FFLD or EN2PA connections.
2. Download the FFLD or EN2PA configuration.
3. Setup Logix Project (Controller and Linking Device) with RSLogix5000.
4. Download Project to Controller using RSLogix5000.
5. Setup Faceplate on a Graphic Display using FT View Studio.
6. Open Graphic Display in FT View SE Client and view Faceplate parameters.
7. View FF Instrument Configuration with PDC in FT AssetCentre.
8. Optional: Open ProCal in FT AssetCentre and Perform a Mock Calibration.



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Questions ?