



Smart Wireless Solutions

Truong Vuu
SPI Meeting

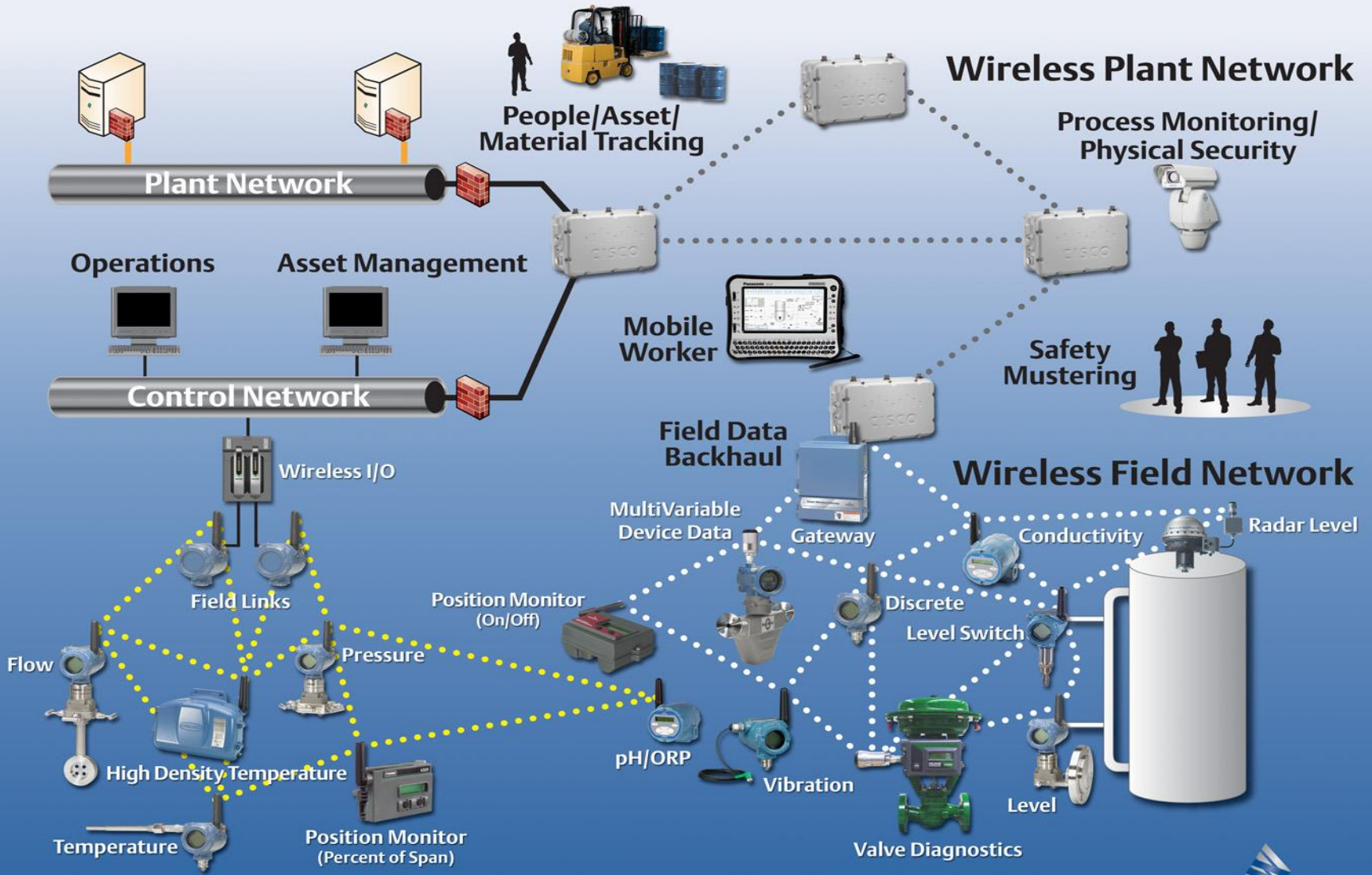


EMERSONTM
Process Management

Agenda

- **Emerson Smart Wireless Architecture**
 - Wireless Plant Network
 - Wireless Field Network
 - Differences of WPN and WFN
- **Why Choose Emerson Smart Wireless**
 - Scalable, Reliable, Secure, Standards-based
 - Ease of Integration to Host Systems
 - Reduced Cost and Complexity
 - Help improve start-up and commissioning
 - Experience and Expertise you can rely on
- **Who Are Emerson Wireless Customers?**

Emerson Smart Wireless



Field and Plant Networks Have Different Technical Considerations

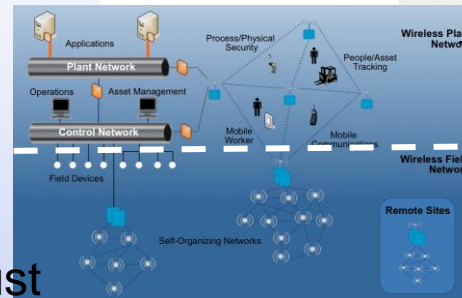
Wireless HART Field Networks

Bandwidth: Lower - Short, high priority communications

Security/Reliability: We cannot 'drop a call'...Must coexist and perform in dynamic, harsh plant environment

Power: LOW...lots of devices, widely distributed in harsh environments, batteries must last 5-10 years

Standards: Driven by Process community (WirelessHART)



Wireless Plant Networks

Bandwidth: High – Multiple applications must share the same wireless infrastructure

Security/Reliability: Industrial security and robust coexistence essential... Must pass IT muster

Power: Devices can be line powered or recharged daily

Standards: Driven by IT Community Wi-Fi (802.11)

Wireless Deployment is Driven by Customer Business Need

Wireless **Field Networks**

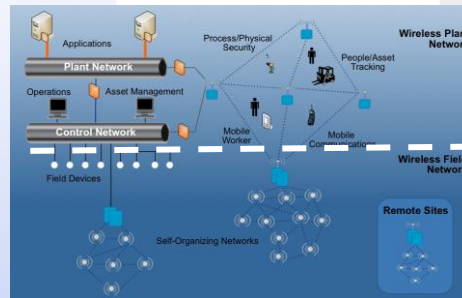
Top 11 Applications: Process

1. Remote Process Monitoring
2. Machinery Health
3. Environment
4. Asset Management
5. Safety System Status
6. Operator Safety
7. On/Off Valve Position
8. Process Startup
9. Temporary Installations
10. Wired Alternative
11. Disaster Recovery

Wireless **Plant Networks**

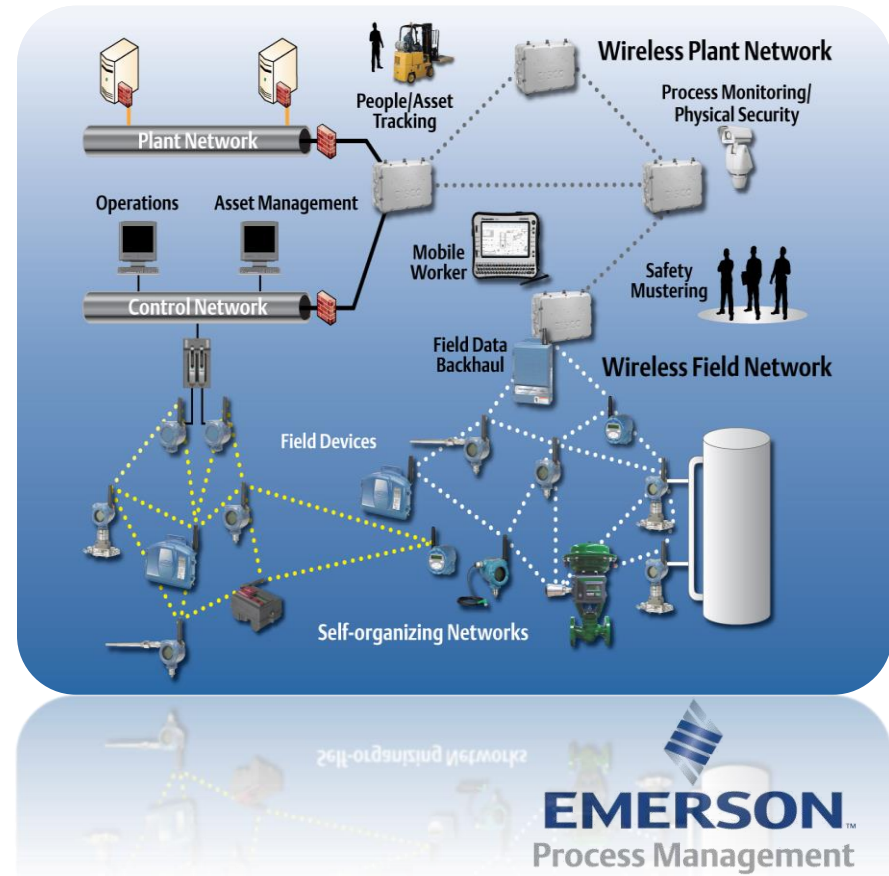
Top 8 Applications: Operation

1. Field Data Backhaul
2. Mobile Worker
3. Bridging
4. Video - Security
5. Video - Process
6. Location Tracking
7. Safety Mustering
8. Voice Over WLAN



Smart Wireless Enables Business Need to Drive Wireless Starting Point

- Allows users to cost effectively and easily implement a solution that meets differing technical requirements of wireless field and plant networks
- Start Anywhere
- Go Everywhere
- Need Plant Applications?
 - Install open, Cisco Unified Wireless coverage and add applications as necessary
- Need Process Information?
 - Easily install and add WirelessHART devices as necessary



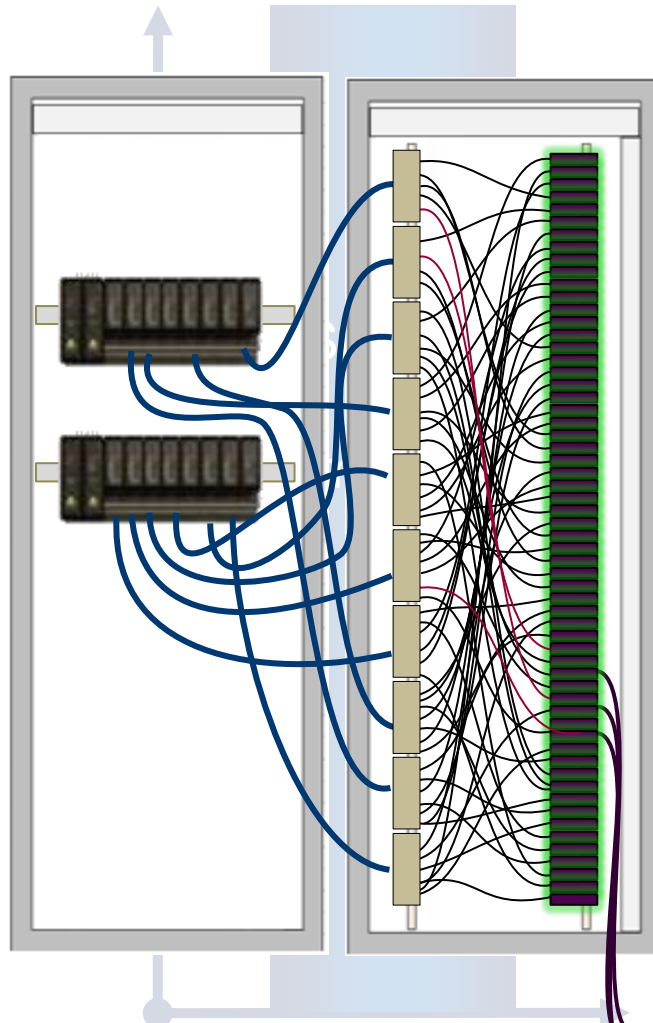
Why Emerson Smart Wireless?



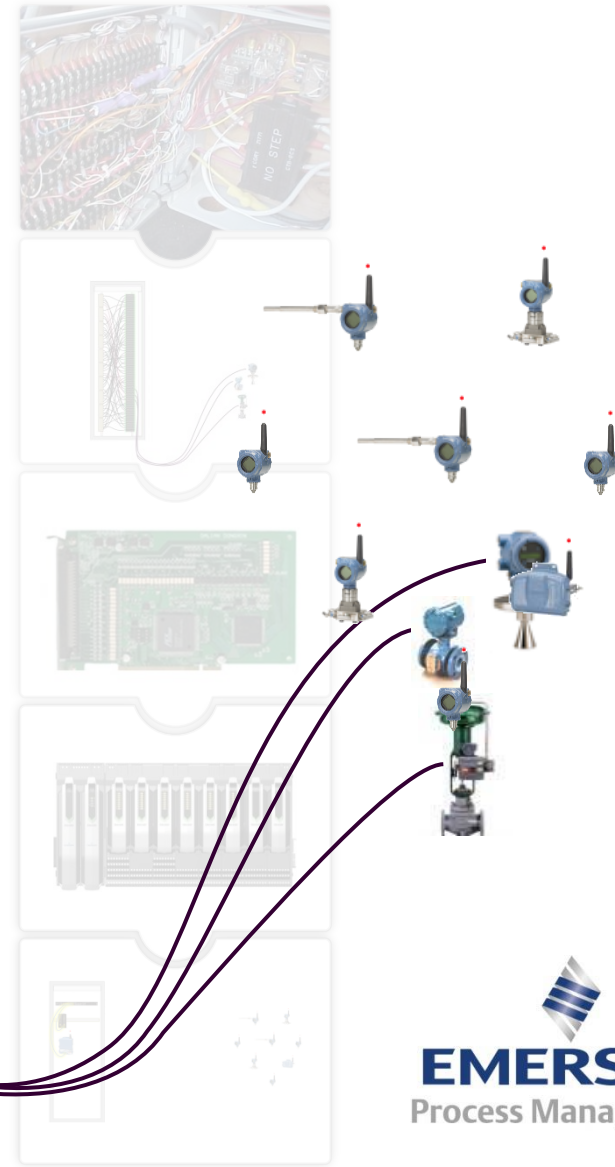
Why Emerson Smart Wireless?



Reduced Complexity



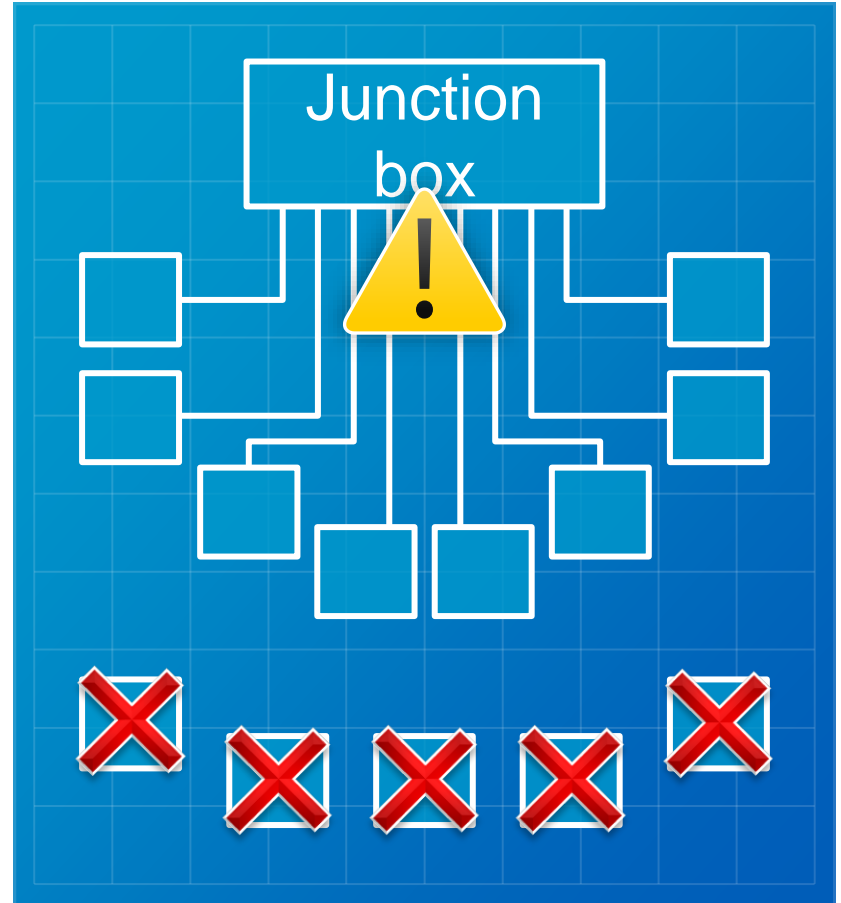
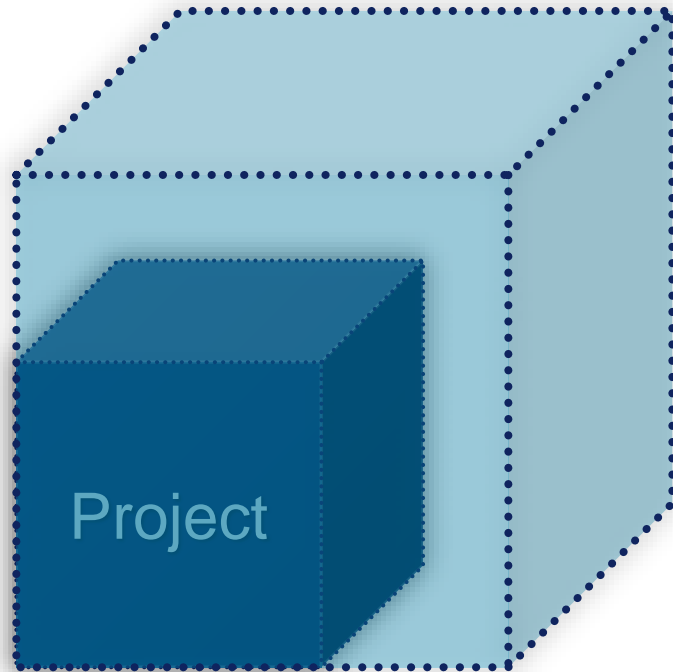
Installation effort



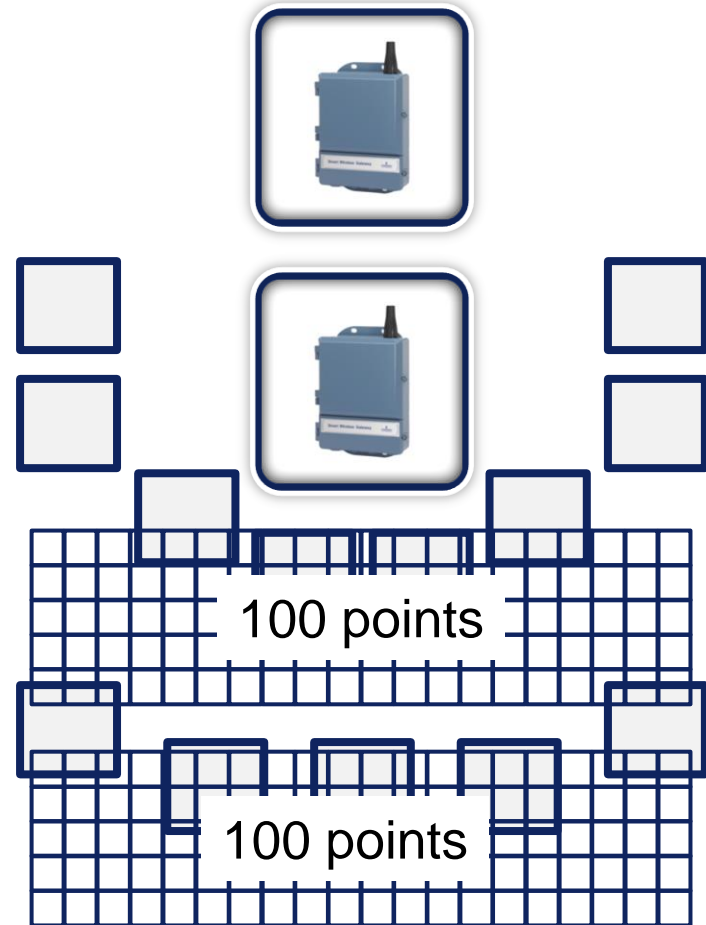
Why Emerson Smart Wireless?



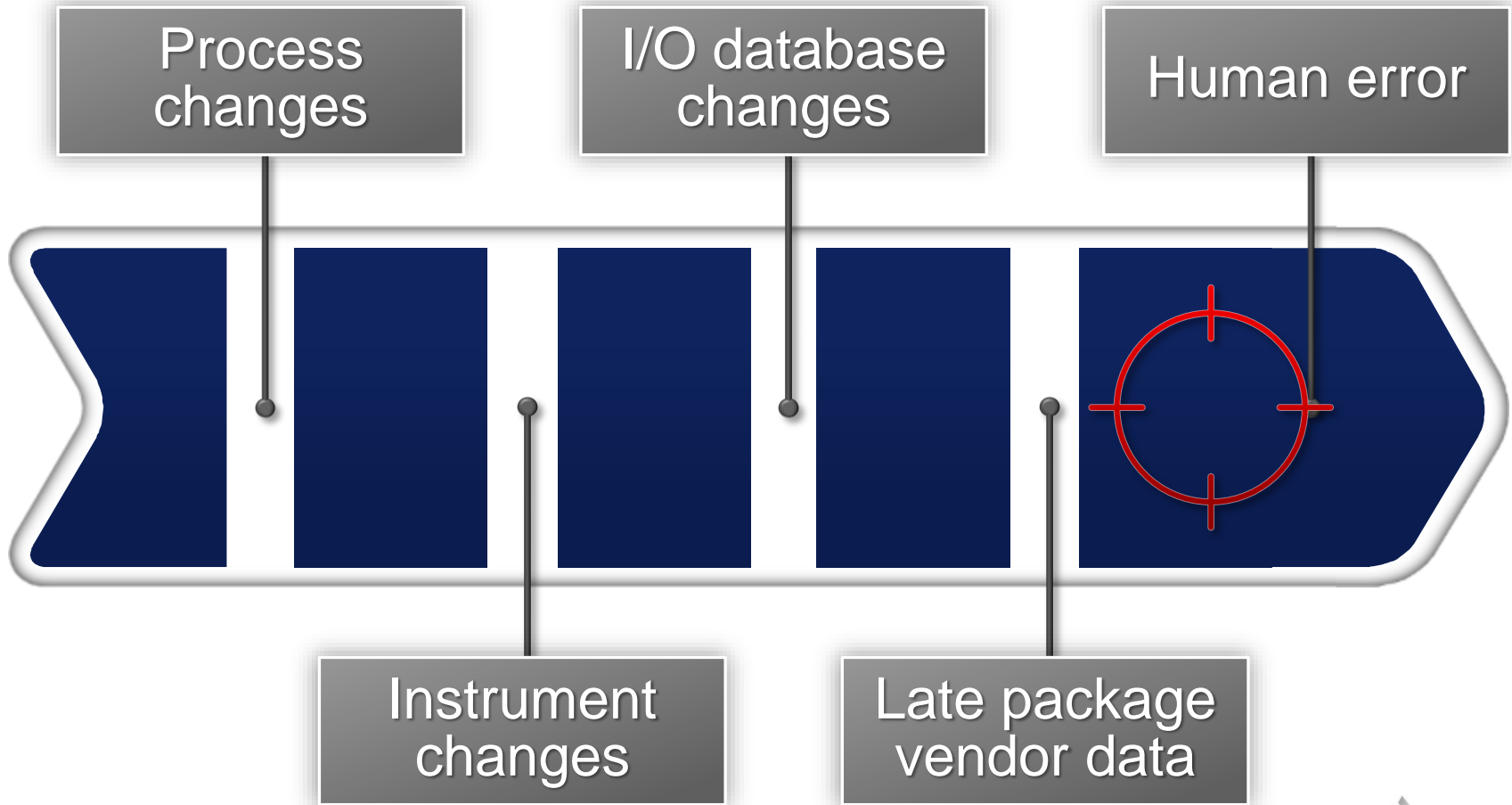
Scalability



Scalability



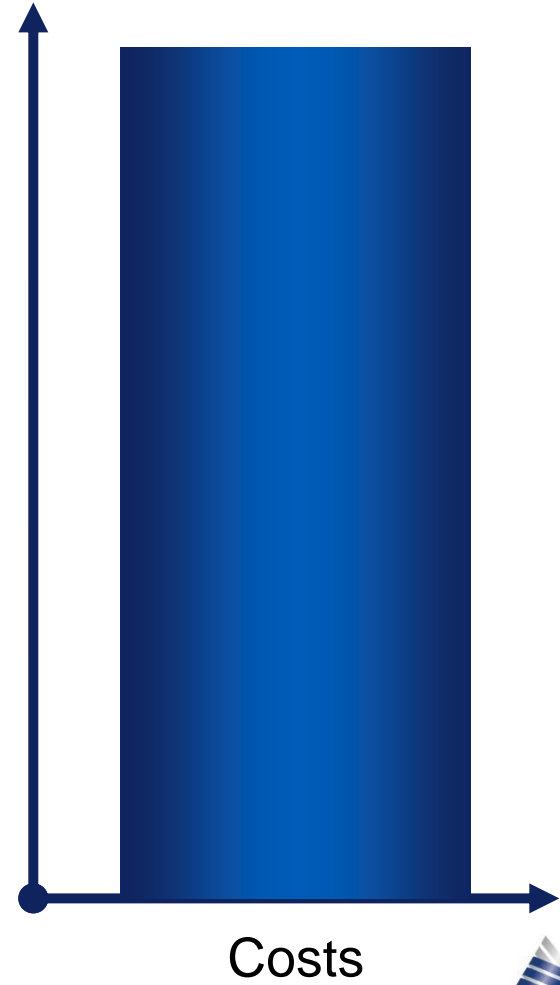
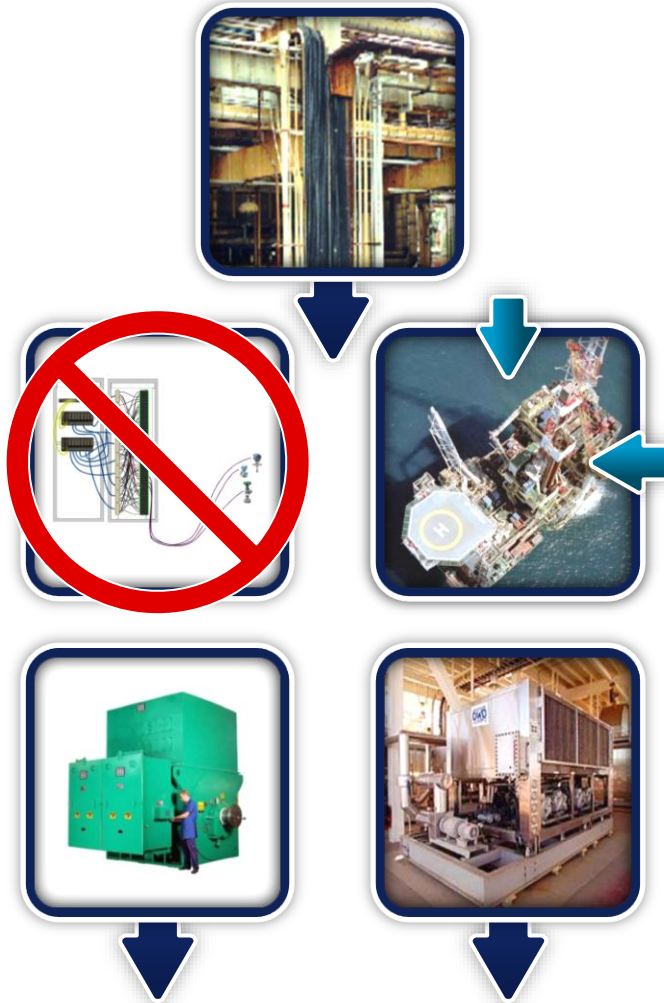
Wireless Solutions Help With Changes



Why Emerson Smart Wireless?



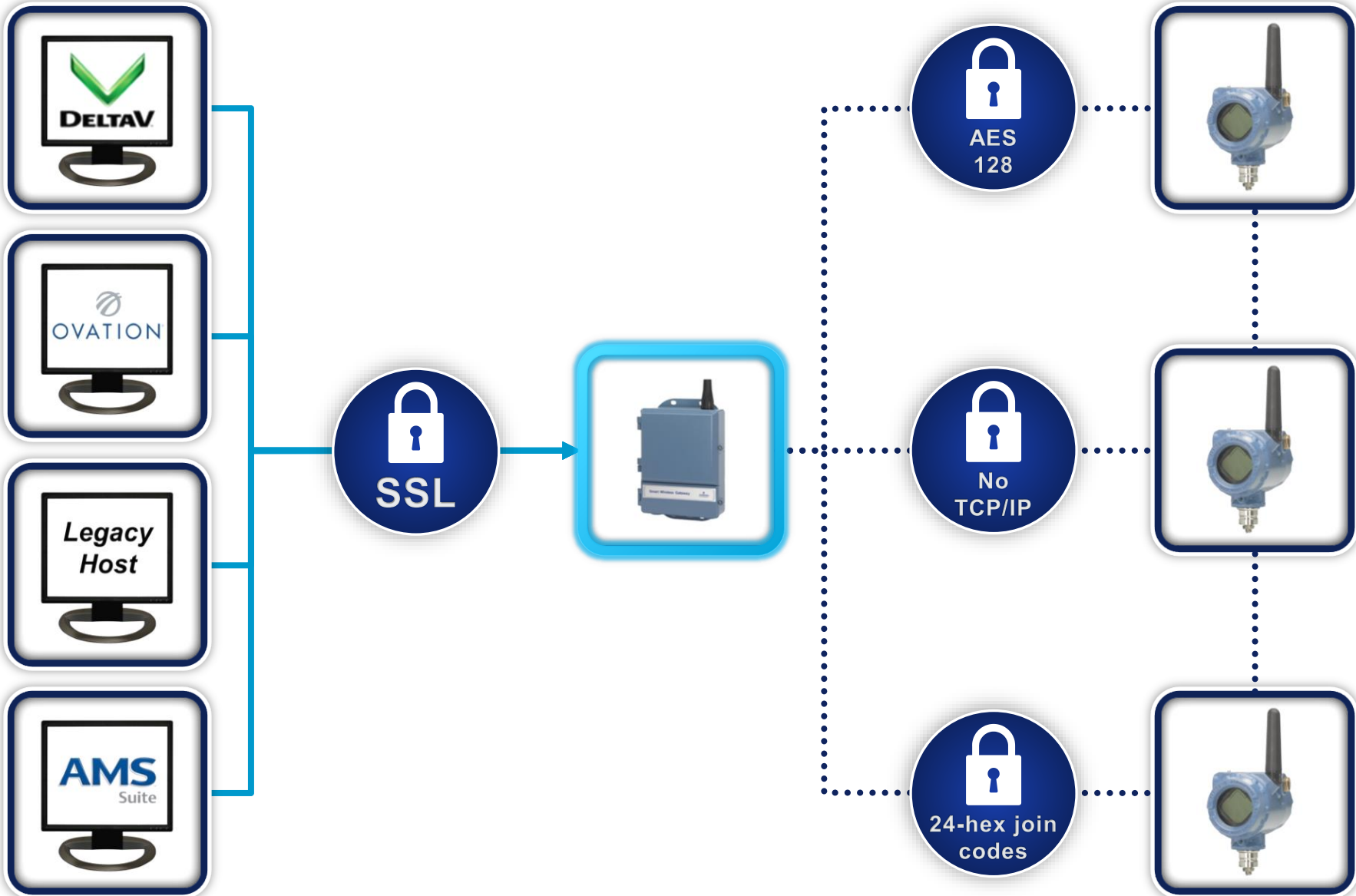
Equipment Savings



Why Emerson Smart Wireless?



Security



Why Wireless?

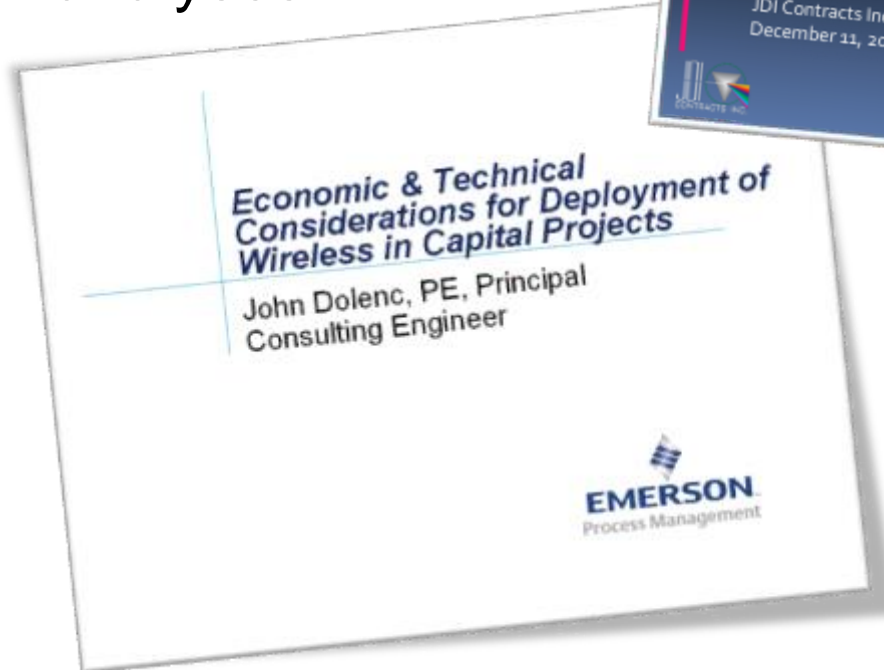


Two Studies Evaluate the Benefits of Wireless In Capital Projects

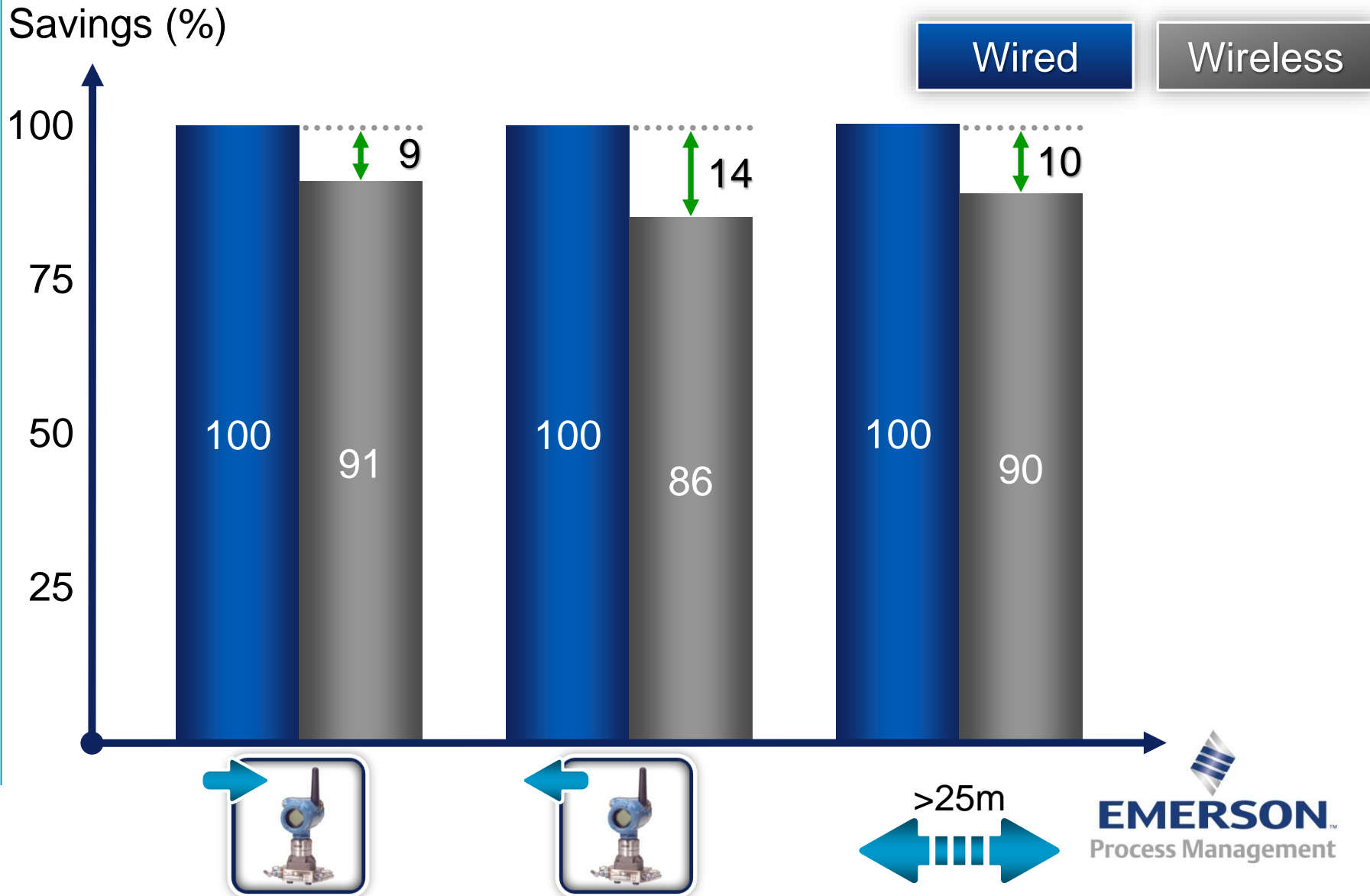
Internal Emerson Capital
Projects Study

External Study by JDI
Contractors with Major EPC

Real plant/project data used
for both analyses

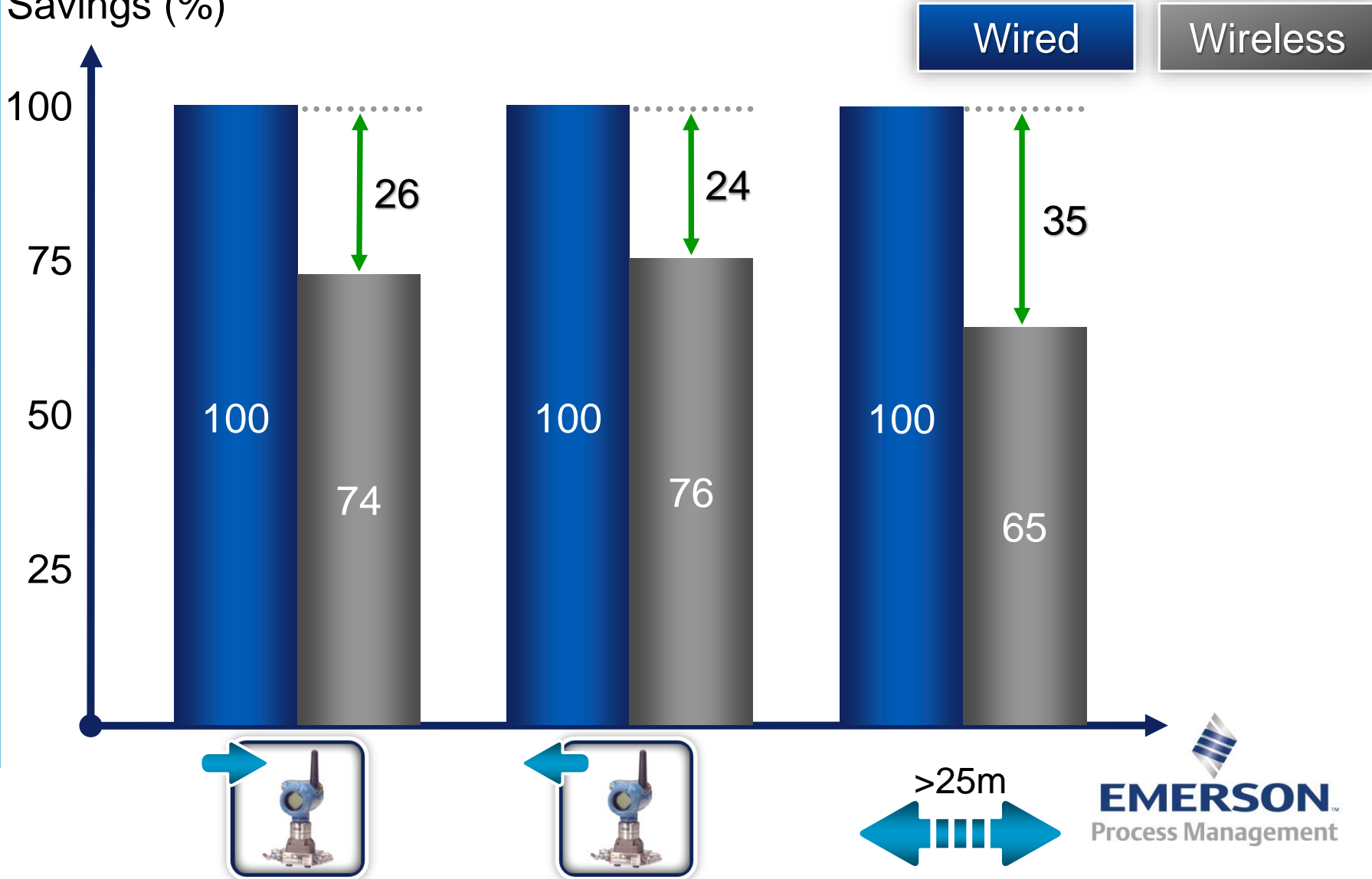


Detailed Engineering Phase



Construction/Commissioning Phase

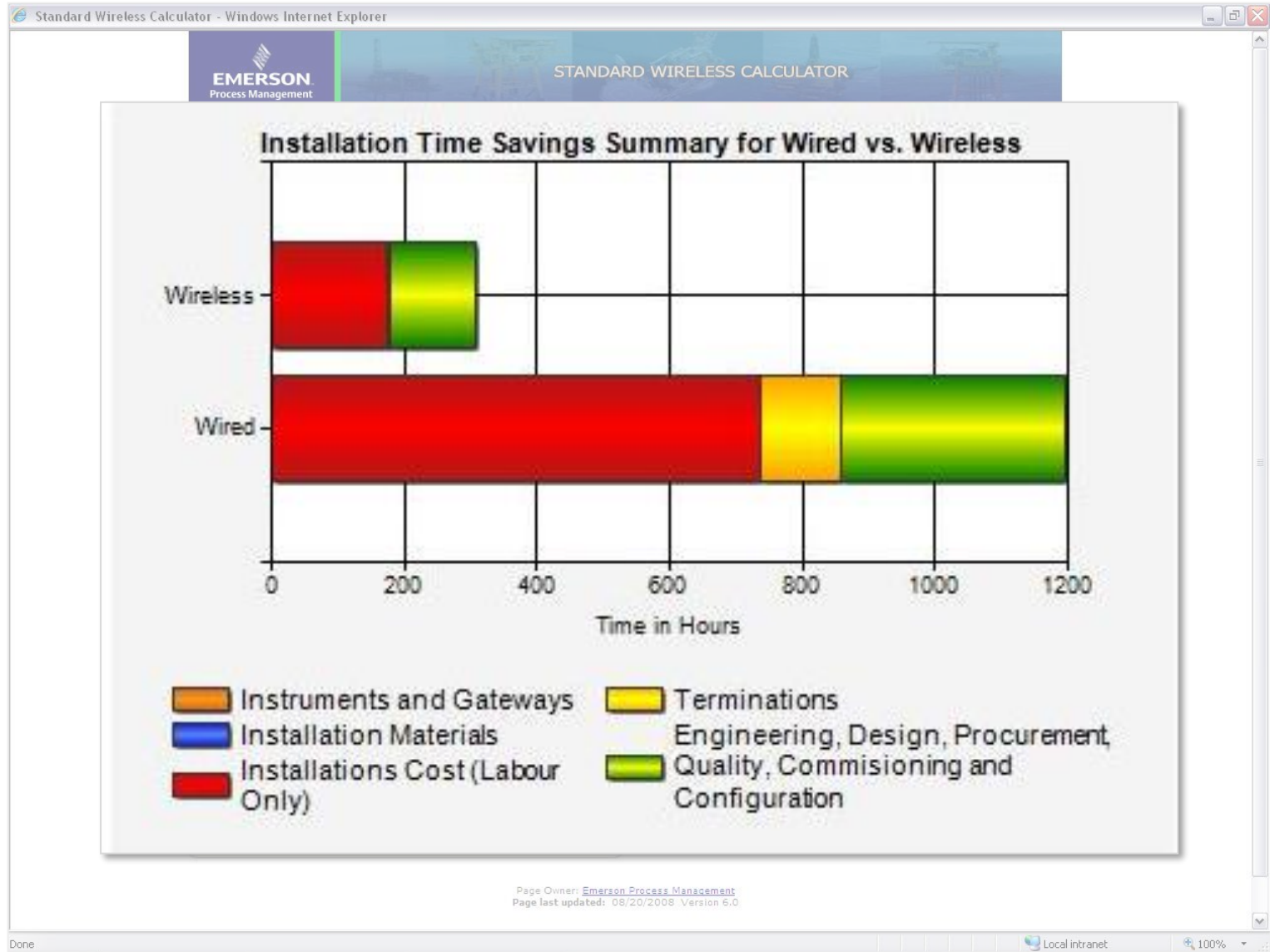
Savings (%)



Faster Deployment



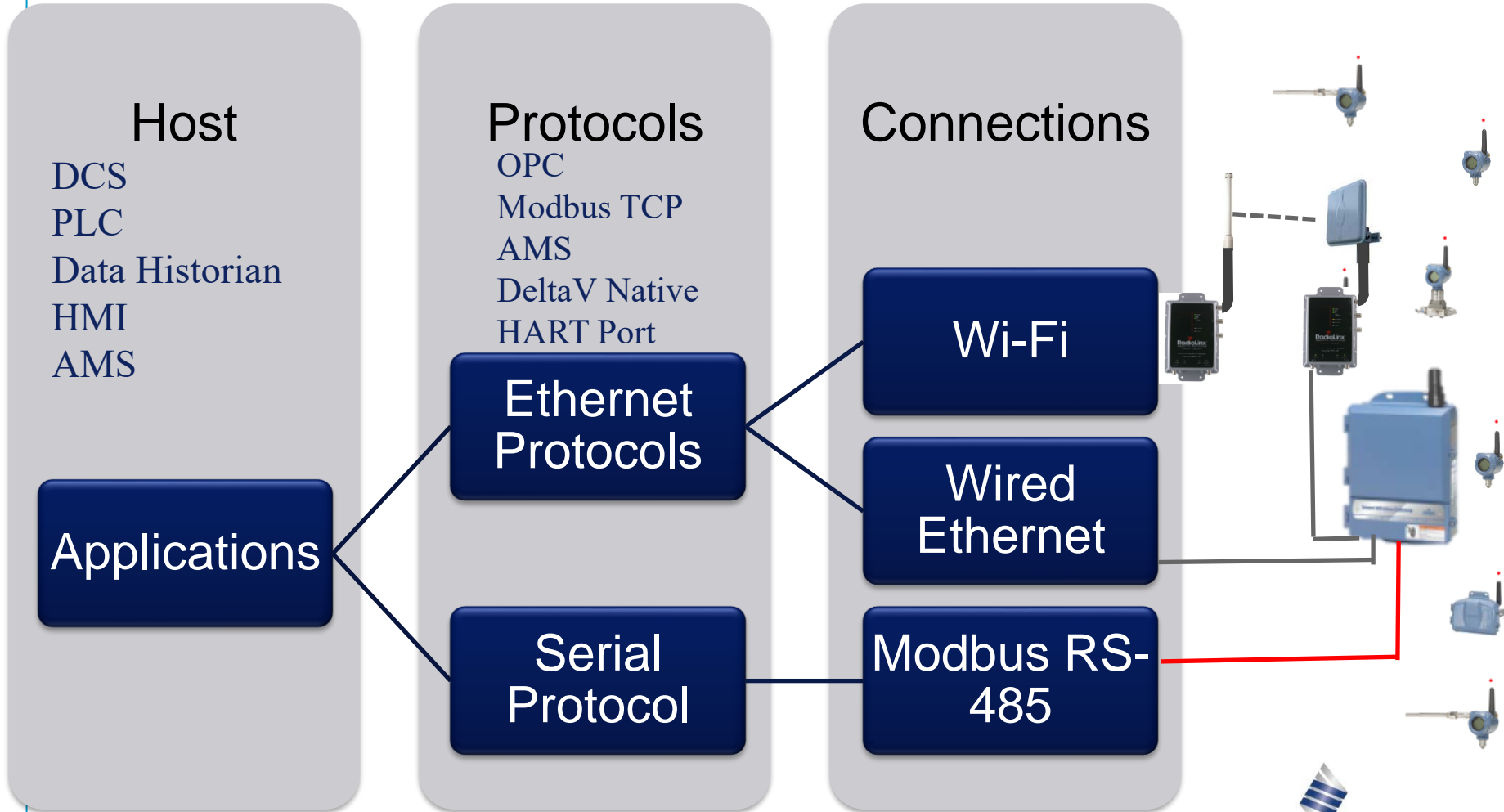
Clearly Demonstrable Benefits



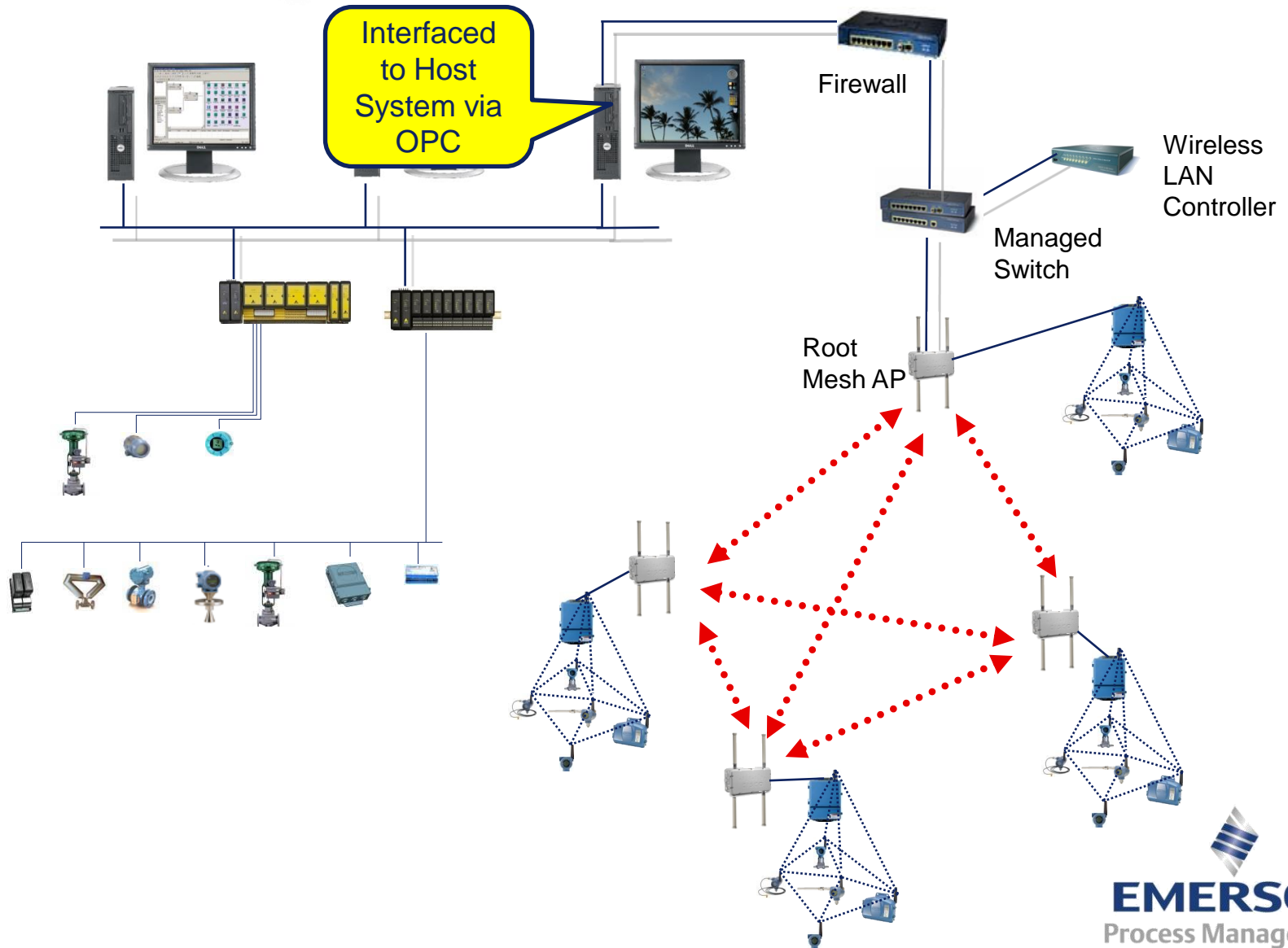
Why Wireless?



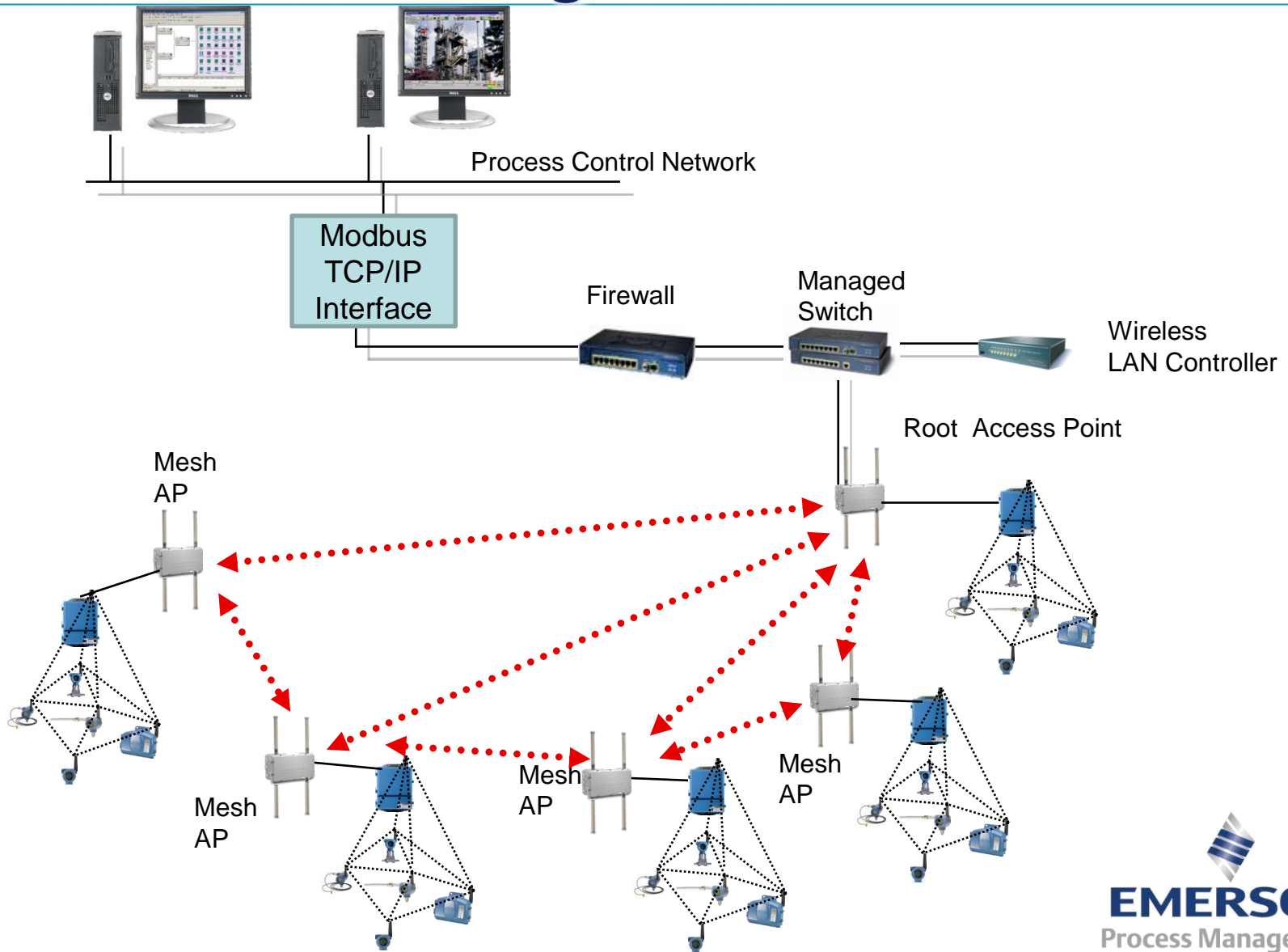
Smart Wireless Gateway Integration



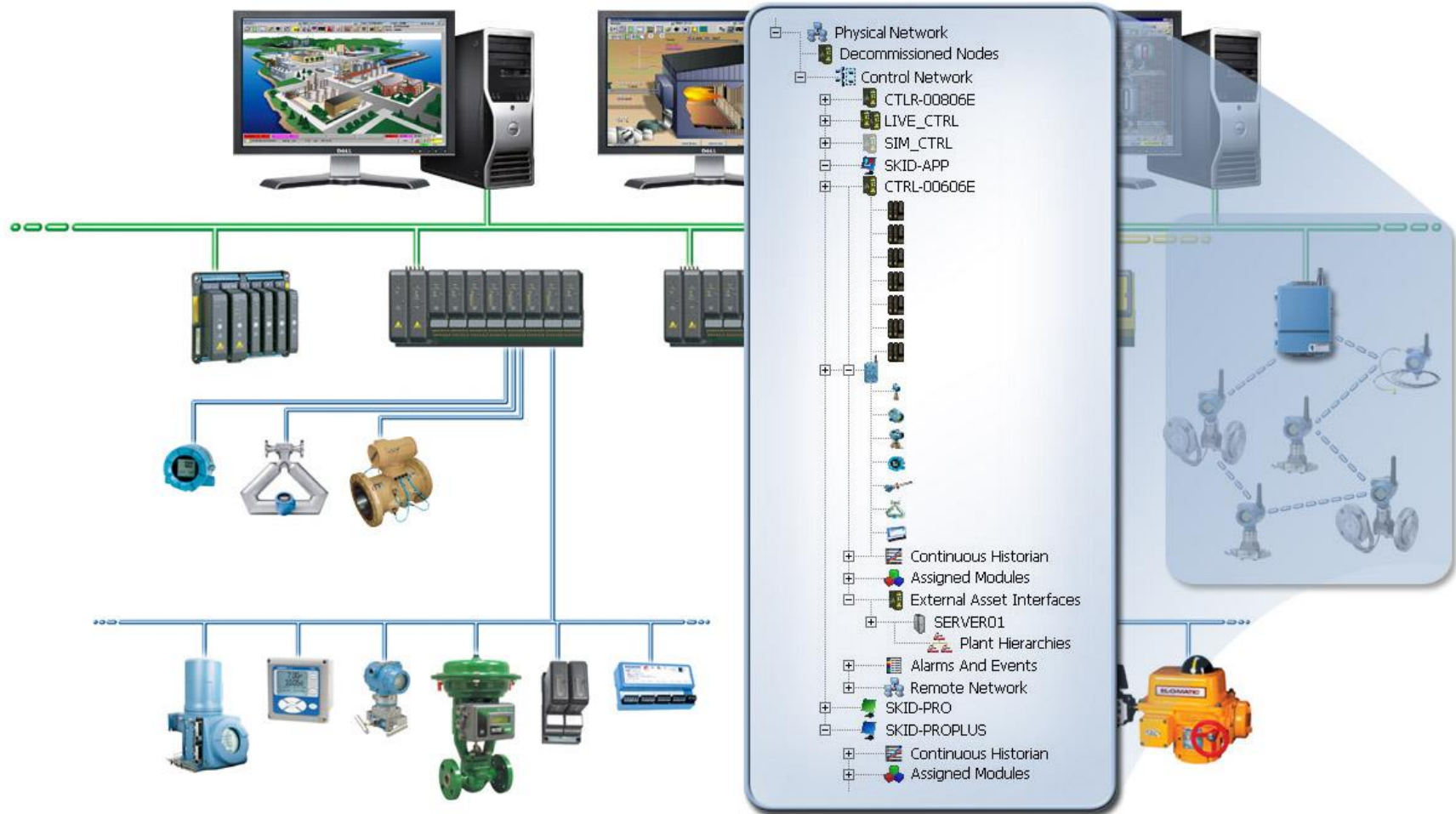
OPC Integration



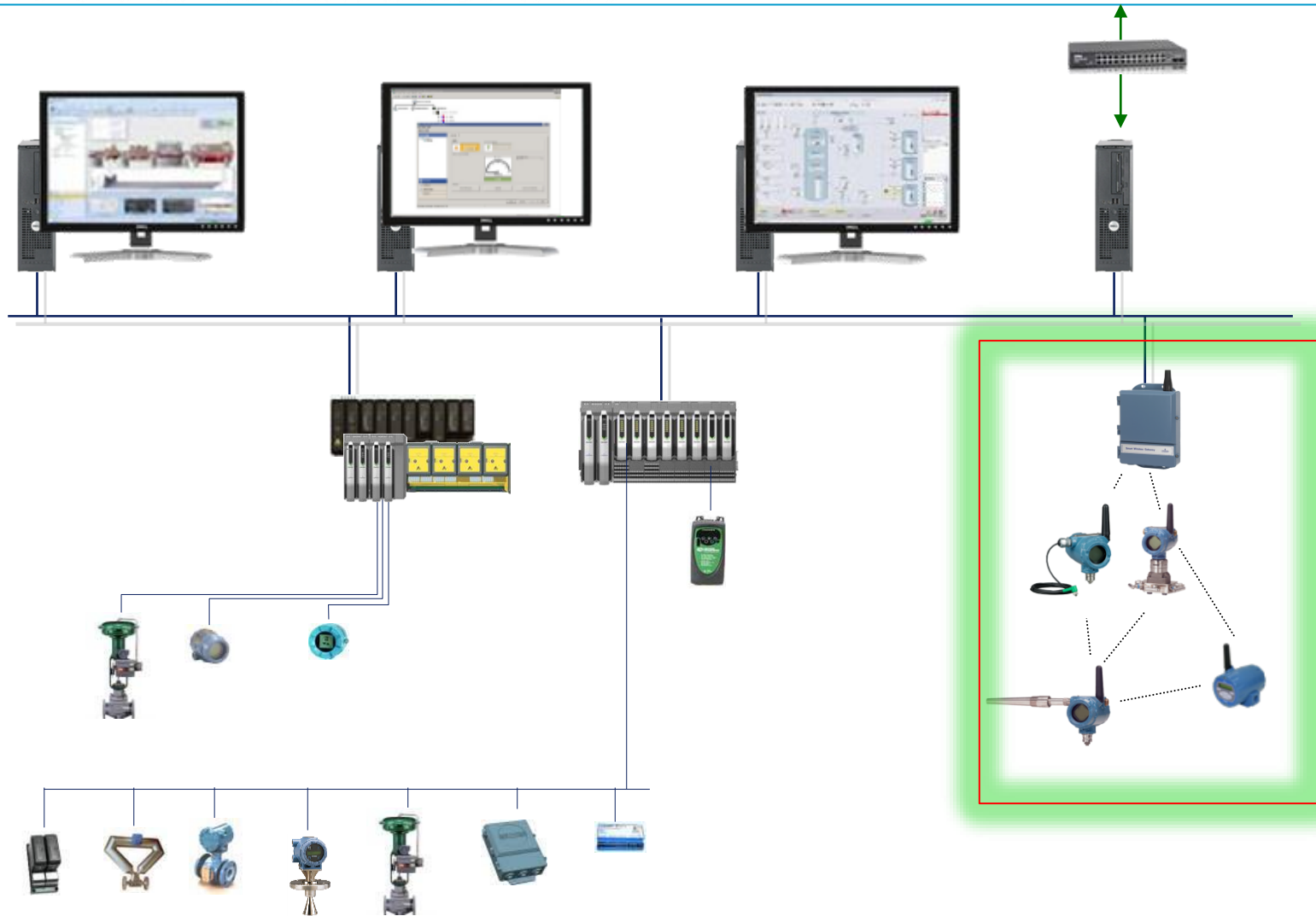
Modbus TCP Integration



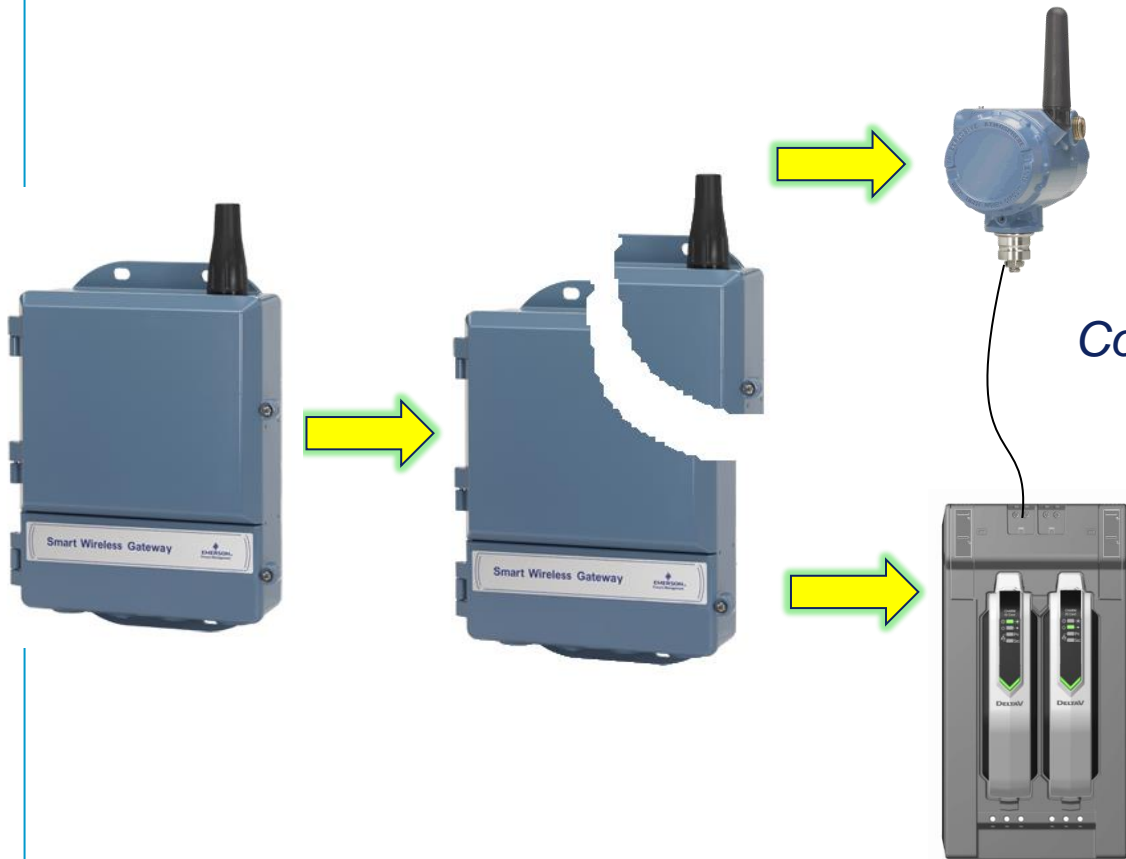
Easy Integration of WirelessHART Devices within DeltaV Architecture



V11 Architecture...



Wireless Development



*781 Smart Wireless
Field Link*

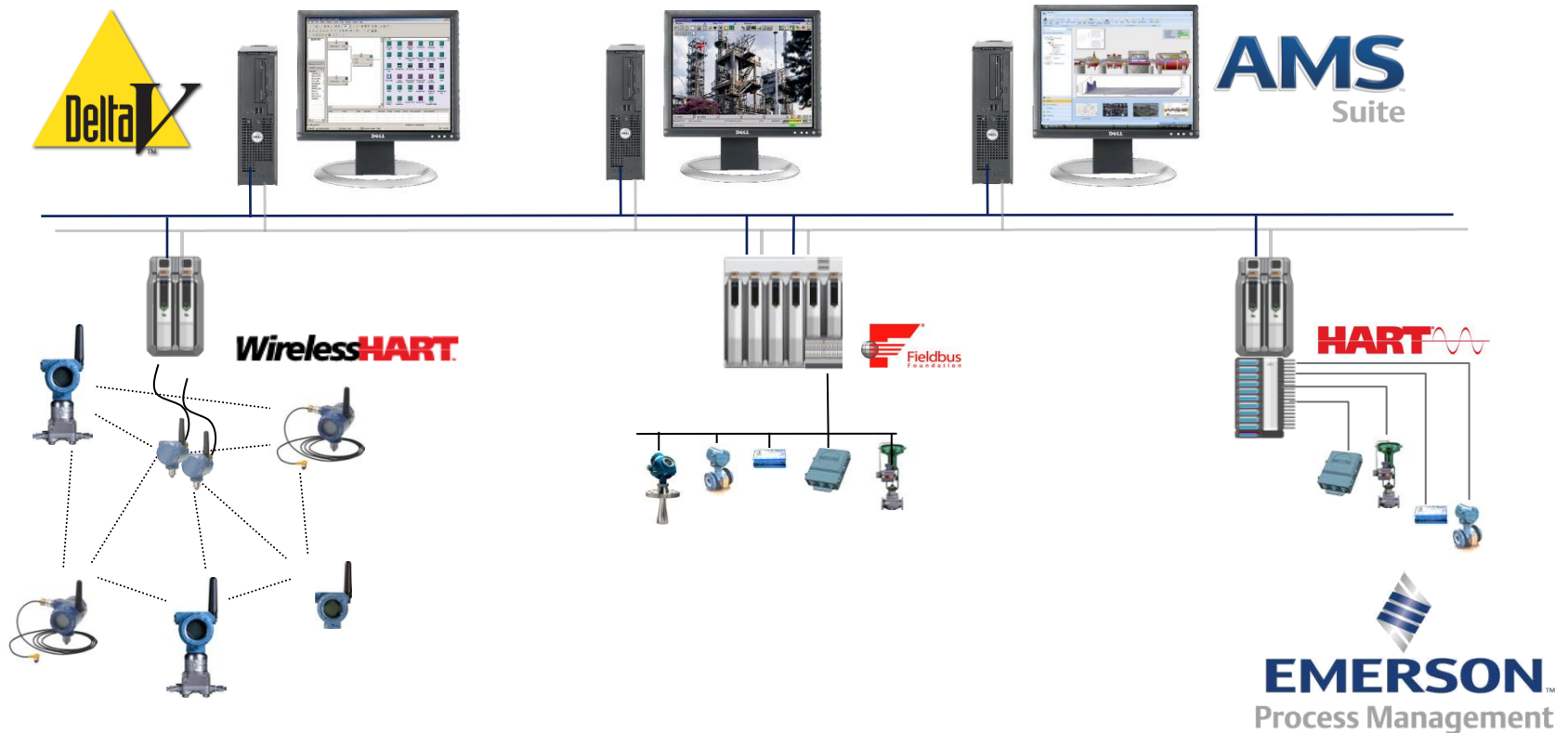
- ✓ *Rugged*
- ✓ *Zone 0 Div 0 Area*

*Communications:
RS485
Power for 781*

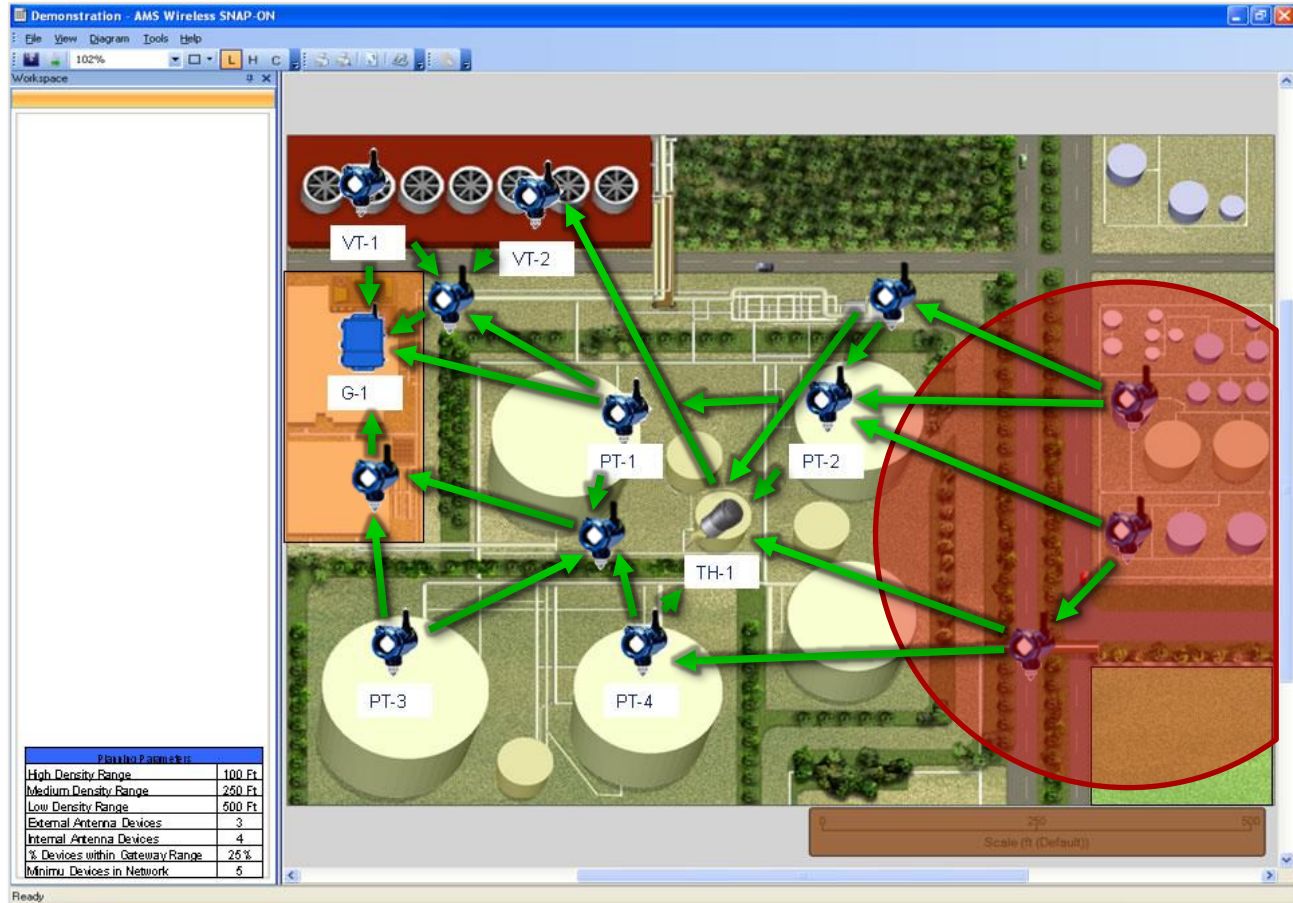
*WIOC
(Wireless IO Card)*

DeltaV v11 Integrated Wireless

- Redundant Field Link
- 8 second update rates
- Reliable enough for control!



Easy Planning



Planning mode



Live mode

Smart WirelessHART



“HART without the wires”

Interoperability - WirelessHART



IEC 62591

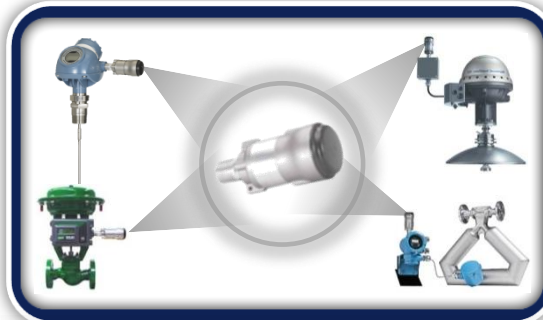


Smart Wireless Portfolio

Diagnostics



Predictive maintenance



Smart Wireless THUM Adapter



Hydrocarbon Leak Detection



6081C Conductivity



6081 pH



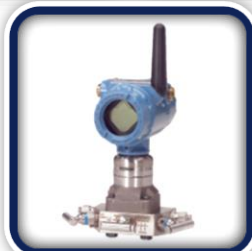
CSI 9420 Vibration



648 Temperature



2160 Vibrating Fork Liquid Level Switch



702 Discrete



Smart Wireless Gateway



4300 Series Position Monitor



848T Multi Input Temperature



3051S Series Pressure, Level & Flow

Redundant Smart Wireless Gateways

Features:

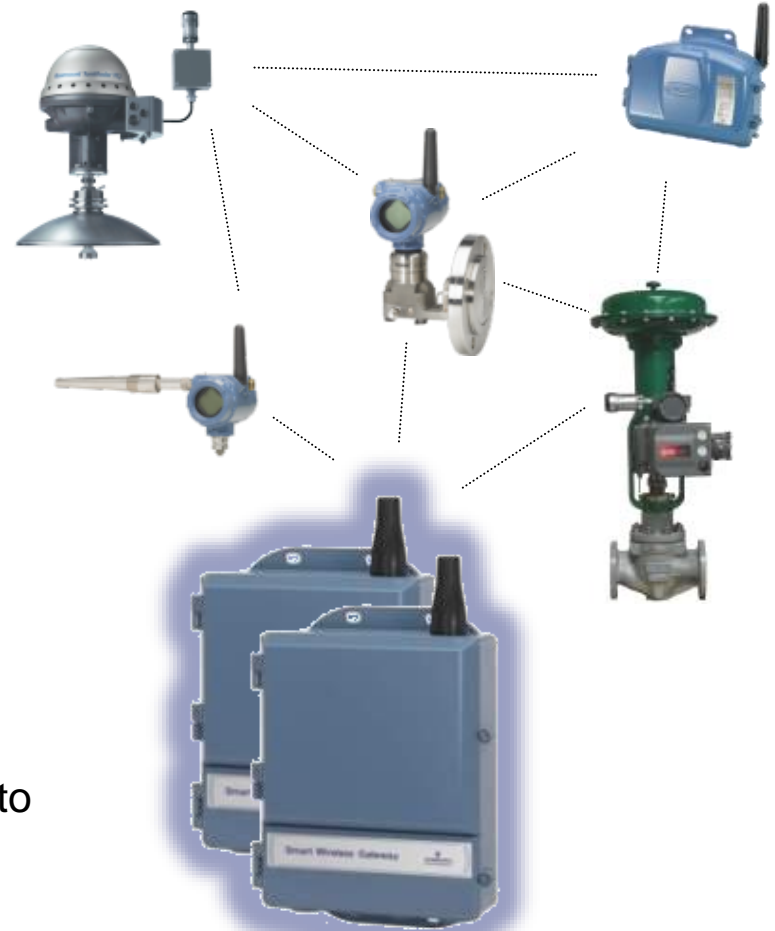
- Redundancy **NEW**
- IEC 62591 (*WirelessHART*)
- Suitable for use in Zone 2 or Class 1 Division 2
- Integrate into any host
- Up to 100 devices

Applications:

- Latency tolerant wireless control
- High availability for critical monitoring

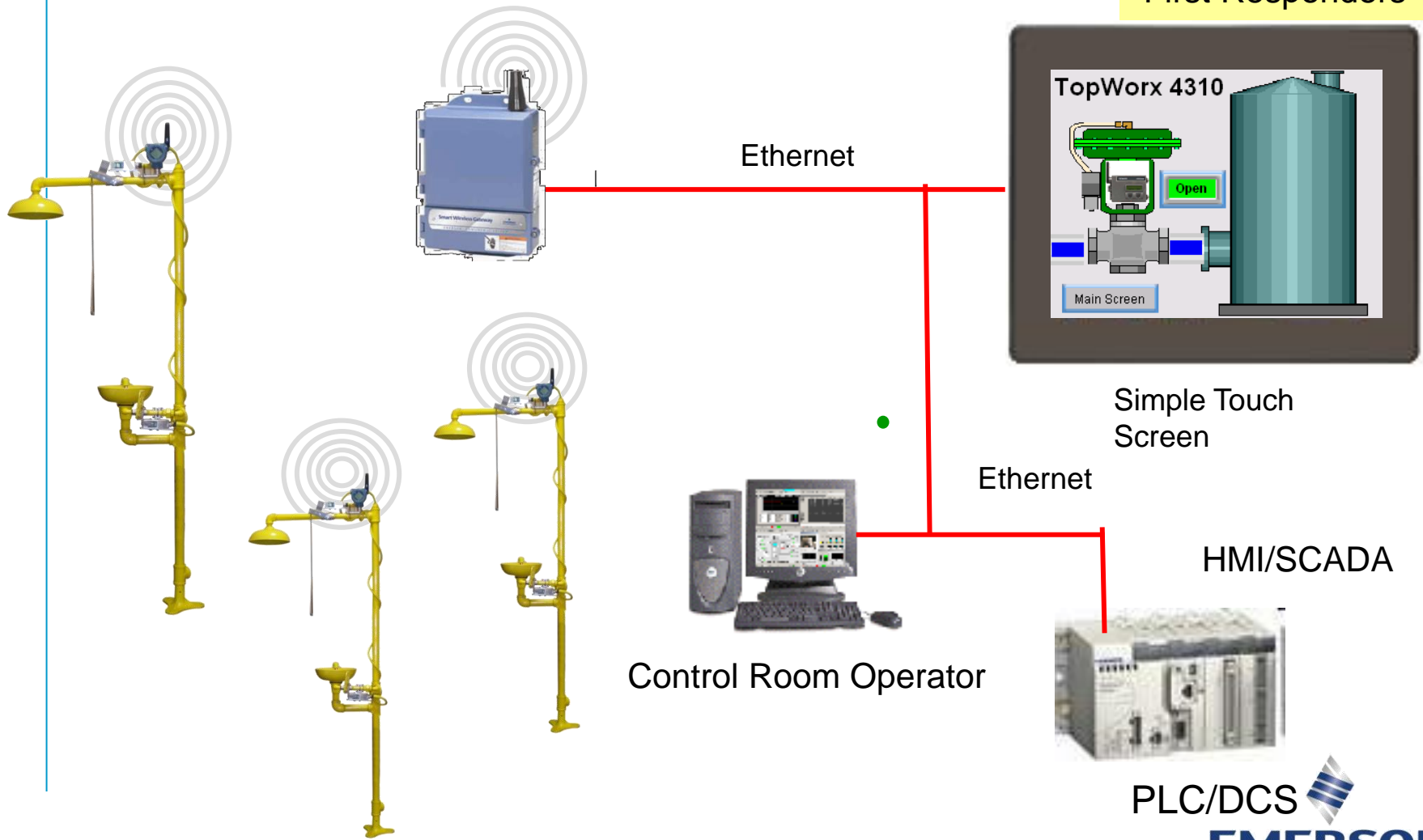
Emerson Advantage

- Fully redundant wireless network from devices to host system
- Simple installation / configuration



Safety Shower Solution Monitoring

Security Office
First Responders



Simple Touch
Screen

Ethernet

HMI/SCADA

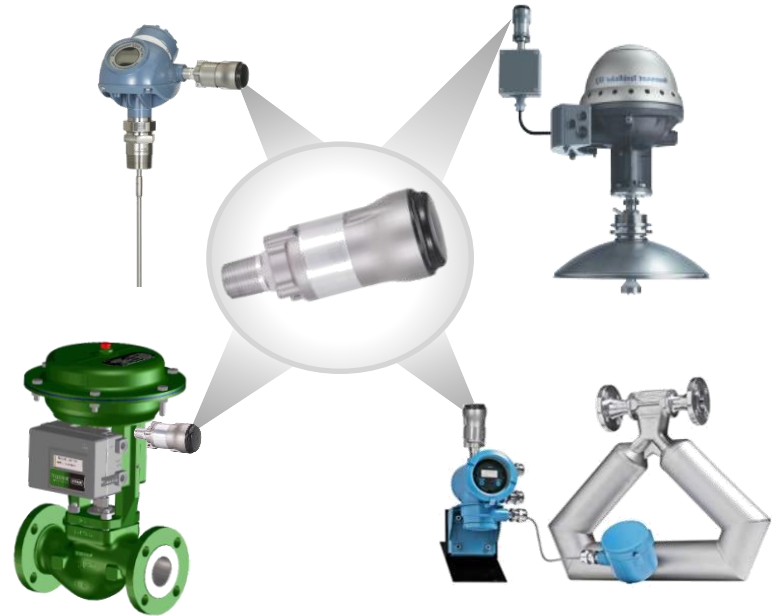
Control Room Operator

PLC/DCS

EMERSON
Process Management

Make Any Device Wireless – Smart Wireless THUM Adapter

- Extend predictive intelligence to areas not possible due to technical or economic reasons
- Make any HART device wireless
- Gain access to advanced instrument diagnostics
- Efficiently gather data from multivariable devices
- Remove need for Tri-loop converters



Emerson Wireless Million Dollar Club



Process Management

Network Power

Climate Technologies

Appliance Solutions

When the stakes are high

Industrial Automation

Motor Technologies

Professional Tools

Storage Solutions



EMERSON™
CONSIDER IT SOLVED.™

Thank You!