



Daniele Galliani | **LE POTENZIALITÀ DELLE CONNESSIONI WIRELESS**
28 Febbraio 2019 | **ED I SISTEMI IOT**



Automation Industry Trends

SAFETY & RELIABILITY

Safe and Reliable system with efficiency and better output



MOBILITY SOLUTION

Virtual engineering, Simulation, Data-on-the-go



CYBERSECURITY

Identify Cyber vulnerabilities and build robust security strategy



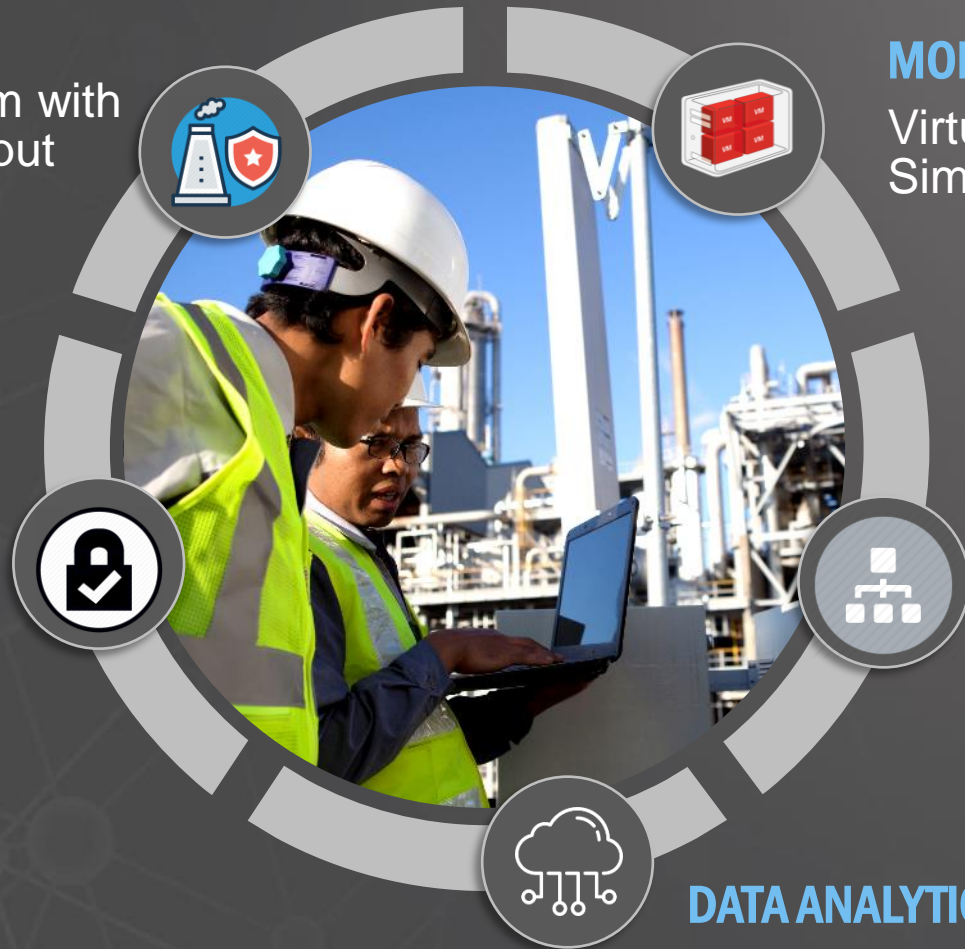
OPEN SEAMLESS CONNECTIVITY

Improved System Integration and coordinated data exchange



DATA ANALYTICS

Automated Workflows, predictive analytics, tools to optimize operations

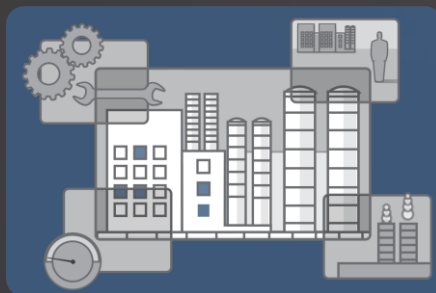
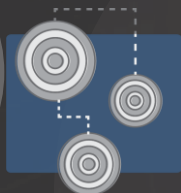


Customer Needs

QUICK TURAROUND

Optimize Project costs by

10%



IMPROVE RELIABILITY

Reduce unplanned Downtime by

20%

CAPITALIZE ON INVESTMENT

Lower TCO by

20%



REGULATORY COMPLIANCE

Save Annual Revenue spend by

10%

INCREASE EFFICIENCY

Improve Productivity by

10%

Innovation Is Revolutionizing Speed of Change

EDGE & CLOUD ANALYTICS

Enabled by deep domain experience



VIRTUALIZATION

Enables virtual testing and commissioning



ARTIFICIAL INTELLIGENCE/ML

Gives access to advanced insights



DIGITIZATION

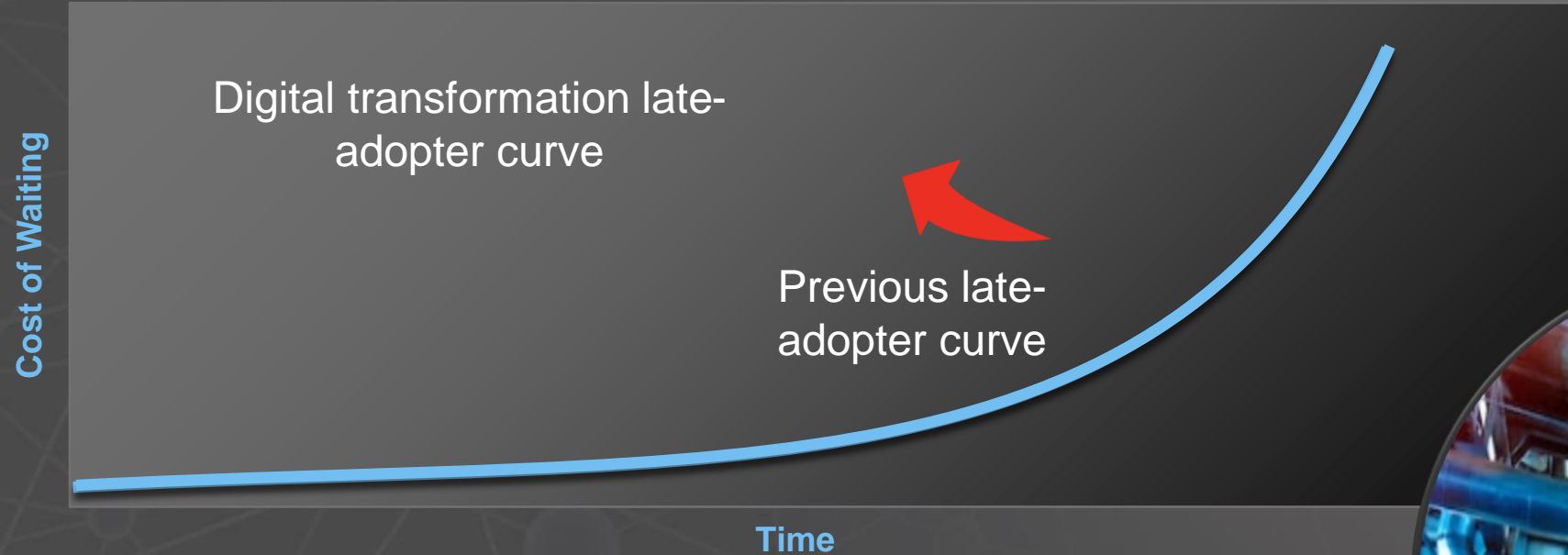
Closed loop automated workflows



VIRTUAL REALITY

Expert on demand and enhanced competency

Late Adoption Costs Will be 2X



Technology is now enabling us to truly understand the interdependencies of the complete ecosystem of people, assets and process

Cost of deferred investment is 2 X before



The Connected Plant Of The Future

Seamlessly transforms people, process and asset data into real-time actionable insights driving speed and accuracy of decision making:

OUTCOME-BASED

- Every day the BEST day of production
- Everyone in the organization acting as a leading EXPERT
- Operating at INDUSTRY BEST levels of Performance



Multiprotocol Wireless Network

Leading The Industry Through Innovation

2011

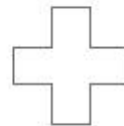
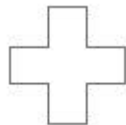
OneWireless™

Industry's First Dual Purpose
Wireless Network

2016

OneWireless™ Network
Multiprotocol Wireless IO

Industry's First Multiprotocol
Wireless I/O & System



WirelessHART™

Overview of OneWireless Network and Solutions



Offering the Most Choices in Wireless

Honeywell offers a complete portfolio of products including: network infrastructure; data access and mobile computing devices; safety and security products; specialty products for applications such as tank level, vibration and corrosion monitoring; and field instrumentation for temperature, pressure, voltage, acoustic, and position monitoring.

Field Instrumentation and Wi-Fi Network

Field Instrumentation only Network

Plus WirelessHART Support

Network Infrastructure Equipment

- Wireless LAN Controller (IEEE802.11n)
- Wireless Device Manager (ISA100 Wireless Network Manager)
- Wi-Fi and ISA100 Wireless Meshing Access Point
- ISA100 Wireless Field Instrument Meshing Device

Ethernet/WiFi Devices and Applications

- Explosion Mobile Access (Access Explosion from a handheld)
- Mobile Station (Explosion station on a tablet)
- XYR 9000 Ethernet Modem
- ConneX1 Wireless portable gas detector
- CCTV Camera (Security camera)

OneWireless XYR 6000 Transmitters

- Corrosion Transmitter
- Pressure Differential
- Temperature
- Valve Position Sensor
- Pressure Gauge/Absolute
- Flow

Field Instruments

- Enraf SmartFlexer FlexLine Tank Level Gauge
- Limitless Wireless Switch
- OneWireless Adapter for HART Devices
- Enraf Wireless Field Interface

The Best Got Even Better – With No Change!!

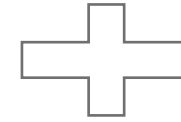
No Hardware Change



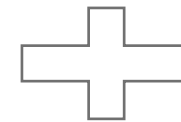
Software Innovation

Field Upgradable

ISA
100
WIRELESS



WiFiTM



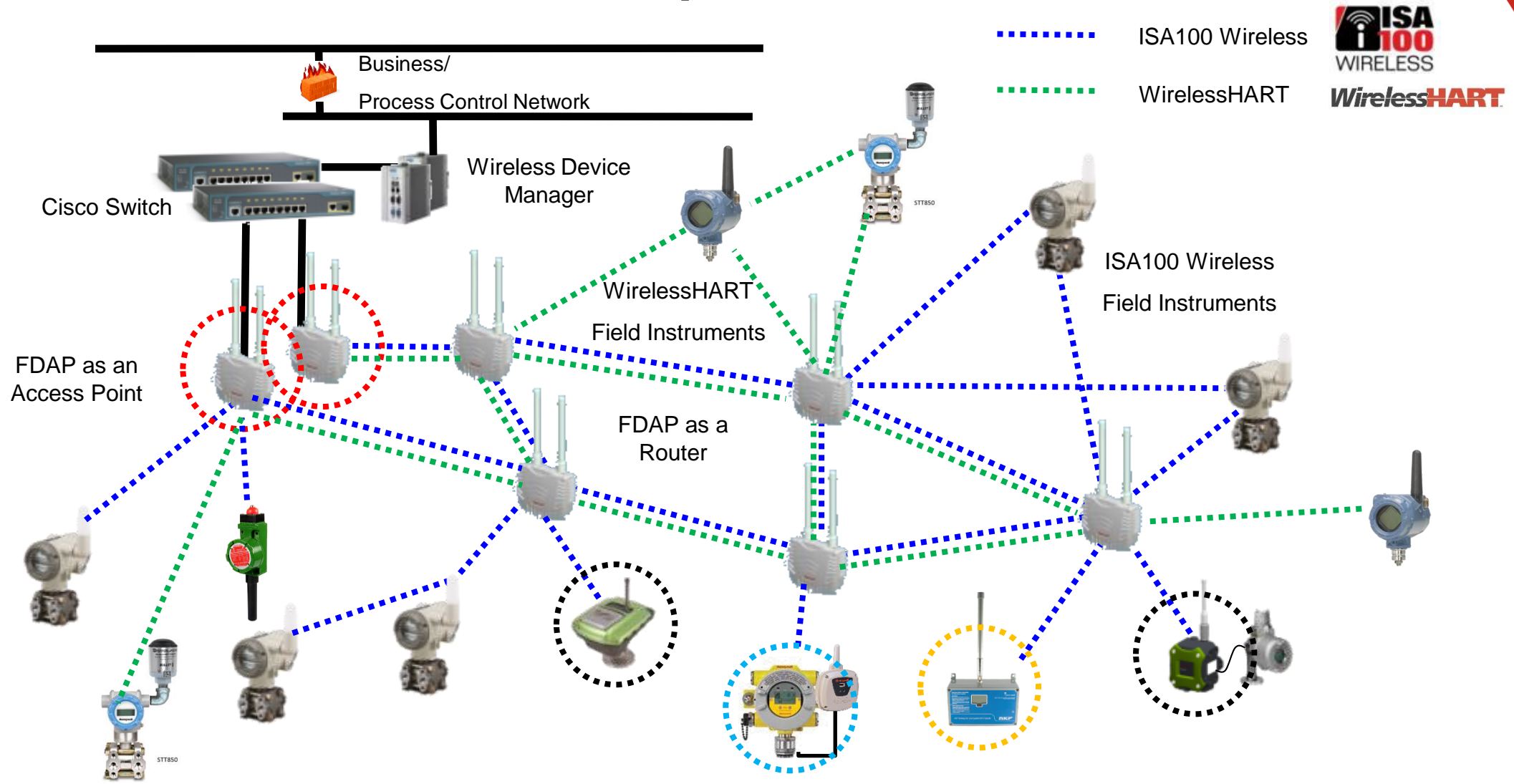
WirelessHARTTM

25% Cost Effective

50% Cost Effective

Delivering More Value on CAPEX and Existing Investments

The OneWireless Network – Multiprotocol Wireless IO



2 AP (Covered in Base)+ WirelessHART + Enraf + GCI + HART (If Needed)

The Value Pitch

- Honeywell OneWireless Network is Field Proven
 - Billions of operating hours
 - Field deployed control applications
- Leading and Most Innovative Solution
 - First to introduce dual purpose network (ISA100 Wireless + Wi-Fi) - 2011
 - First to introduce Multiprotocol Network (ISA100 Wireless + WirelessHART + Wi-Fi) – 2016
- Enabling IIoT with Software Innovation
 - No change in hardware, maximum ROI
- Open, Reliable, Scalable and Cyber Secure
- Seamless Integration with Experion
- ***You do not need to worry about wireless standards – Honeywell will take care***



The Only Industrial Wireless Network that offers 100% Freedom

OneWireless Network Connects to the Most Mission Critical Devices



- Only solution that supports the three major wireless standards / technologies
- Scalable and best site-wide solution available
- Control ready and secure
- Native Experion integration

Wireless Device Manager

Cisco 1552S



FDAP



FDAP
as FEWIO



Which wireless protocol to select? It doesn't matter with OneWireless

Evolution of Honeywell's Wireless Solution



2004
Honeywell introduced
XYR 5000

The industry's first wireless
sensor network



2007
Honeywell introduced
OneWireless and XYR 6000

First comprehensive industrial
wireless network solution



2011
OneWireless and XYR 6000
are compliant to ISA100
Wireless

International wireless standard born
from customers, technology experts,
communication experts, and
international vendors requirements



2018

Honeywell introduces **SmartLine Wireless Pressure**

An evolution and enhancement to XYR 6000 , preserving users' existing investments

Current FI Product Portfolio – ISA100 Wireless Compliant

XYR 6000 Product Portfolio



Pressure

STDW100 series	Differential pressure
STGW100 series	Gage and In-Line pressure
STDW900 series	Differential pressure
STGW900 series	Gage and In-Line pressure



Temperature and I/O

STTW401	Temp and DI
STTW600	HLAI
STTW700	Universal I/O: AI, DI
STTW701	Universal I/O: AI, DI and DO



Other

OWA100	OneWireless Adapter
WCX	Valve Positioner
WPS	Pressure Sensor
WBX	Level Switch



Full FI Product Portfolio – Wireless Adapters



SmartLine Pressure and SMV



SmartLine Temperature



SmartLine Level



ISA100 Wireless

- OneWireless Adapter**
- HART adapter for ISA100 Wireless Protocol



WDM

FDAP

WirelessHART



STT850

- Pepperl+Fuchs Bullet**
- HART adapters for WirelessHART Protocol



Pepperl+Fuchs WHA-ADP



Experion Station

Powers the device

Wireless Tank Gauging



SmartRadar FlexLine

- Meshing capability
- Seamless integration with Entis Pro / Engauge / CIU
- Suitable for custody transfer (W&M approved)
- Highest accuracy over 75m (250 feet)
- Also transmits other local tank measurements over ISA100 Wireless
- Software upgrade over the air
- Provisioning over the air



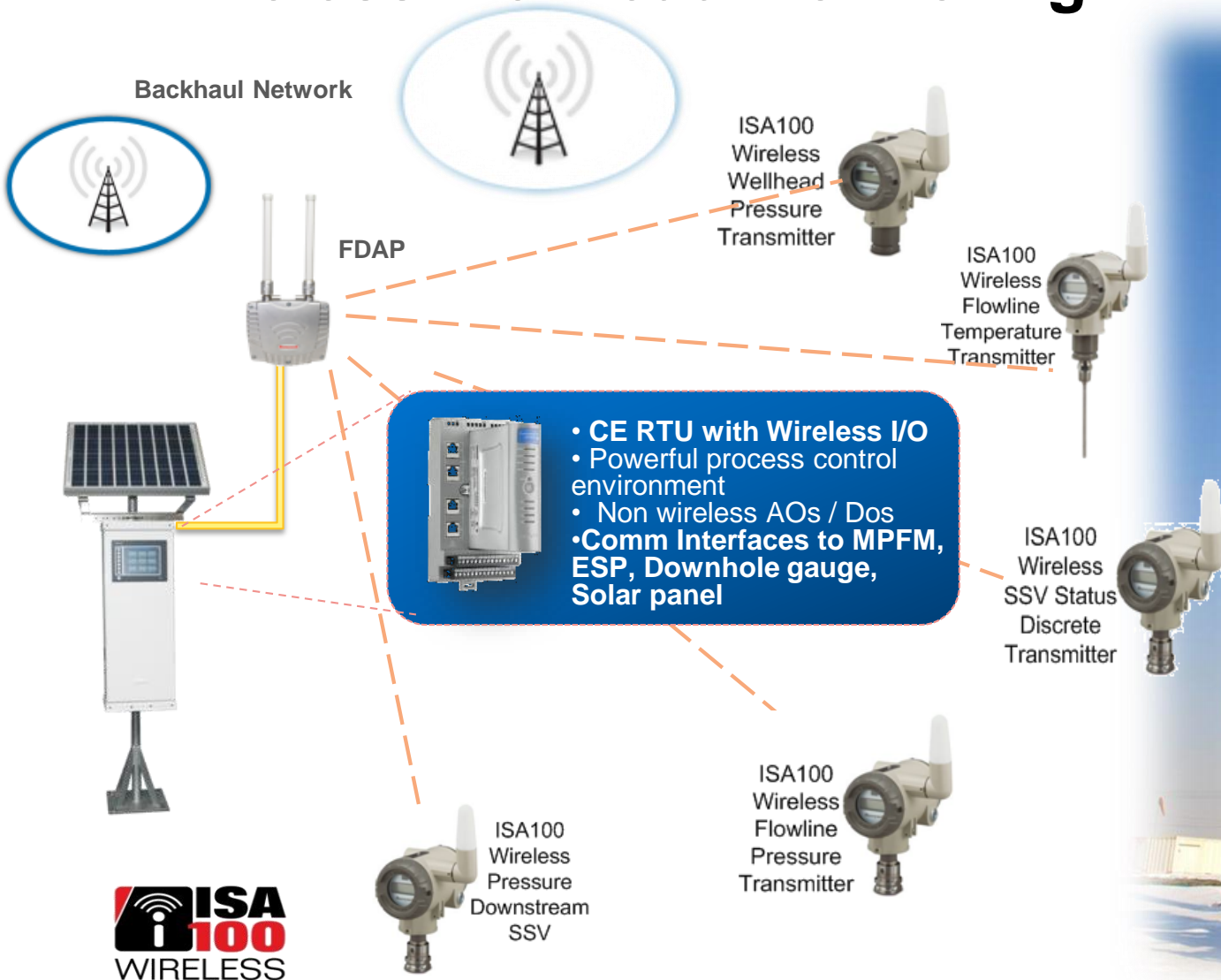
Wireless Field Interface

- Able to connect existing gauging equipment to ISA100 Wireless network
- Zone1 capable hub
- Support for 854, 97x, 873, 811 GPU, 877 indicator
- Seamless integration with Entis Pro / Engauge / CIU
- Freedom of selecting appropriate gauge (Radar or Servo)





Wireless Wellhead Monitoring

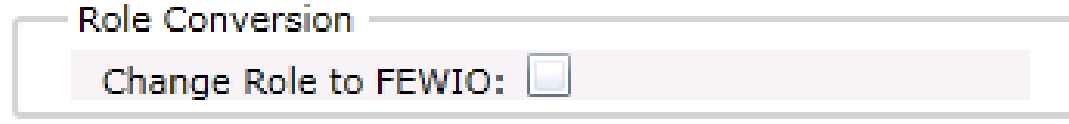


OneWireless Network with FEWIO




Field Expandable Wireless IO (FEWIO)

- FEWIO is a new device type
- FDAP as router can be converted to a Field Expandable Wireless IO (FEWIO)

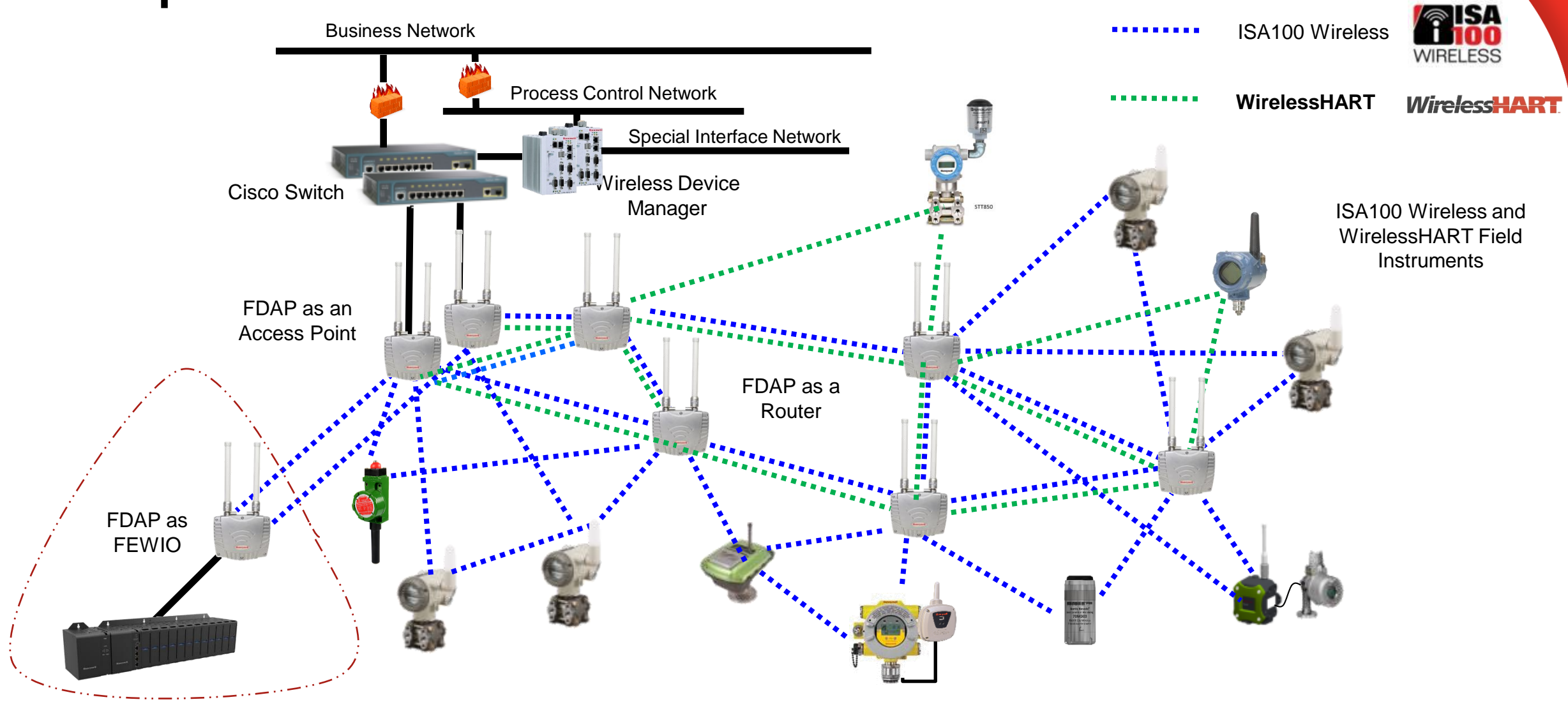


- Data collected over RS485 & transmitted to control room over wireless
- FEWIO Supports
 - Modbus RTU
 - RS-485 serial Interface used for connecting to serial interface devices
 - Modbus TCP
- FEWIO acts as a Modbus master to collect data for Modbus slave devices
- FEWIO supports connection to max 3 slave devices
- FEWIO supports 100 Modbus registers (16 registers at 1-sec & rest at 30-sec)
- Max 50 FEWIO per WDM
- Max 999 Modbus registers per WDM
- FEWIO specific DD file needs to be loaded
- Seamless integration in EPKS



Role Types
FDAP
FDAP as Router
FEWIO

Multiprotocol OneWireless Network with FEWIO



Experion LX/ PC

Thrives on the proven Experion PKS technology



Experion LX offers.....

ADVANCED HMI DESIGN

35-48%

Faster operator response time in abnormal situations



BUILT-IN PID PROFIT LOOP

30%

Increase in process stability



EASE OF USE

20%

Lower lifecycle costs



INTEGRATED BATCH

3%+

Increase annual throughput



SCALABILITY

2-3%

Project cost savings for expansion



SO FAR...

350+

systems installed in 4 years



Uses Honeywell's 35+ years of experience in Refinery, O&G process control

Scalable & Affordable DCS solution deployed by Honeywell Channels

Bringing Greater Reliability and Superior DCS control to mid-size process control

Experion HS

Proven Entry-level Software Platform for HMI and SCADA

Experion HS offers.....

RELIABLE PLATFORM

25+

Years of Honeywell
SCADA expertise



SUPERIOR INTEGRATION

97%

Reduced integration
time with ControlEdge



ADVANCED HMI

450+

standard operator
displays/ shapes



COMPREHENSIVE

20+

Supported SCADA
protocols and drivers



SCALABLE

2%

Project cost savings
for expansion



PROVEN

1000+

Systems installed
over past 15+ years



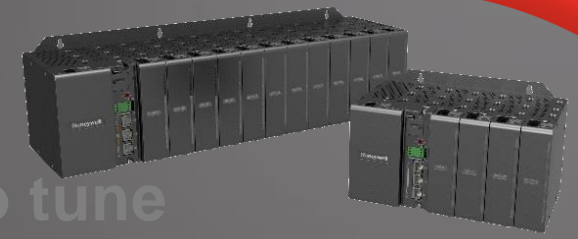
Innovative, Easy to use HMI with comprehensive connectivity and data integrity

Efficient and safe operations through Advanced HMI design & alarming

Comprehensive one-stop SCADA solution for improved control at lower TCO

ControlEdge HC900

SIL2, Easy Engineering, Fast start up, and Simple to tune



ControlEdge HC900 offers.....

SAFETY (SIL2)

99.99%

System hardware
Availability



SIMPLE ENGINEERING

15%

Reduction in Engineering
time using Intuitive tools



REDUCED DOWNTIME

30%

Thru Run Mode Editing,
Online Monitoring &
debugging



POWERFUL
FUNCTION BLOCKS

90%

Accurate Loop Controls
and Advanced Diagnostics



COMMON IO
HARDWARE

40%

Reduction in
Inventory Cost



SO FAR...

14000+

Systems installed
Worldwide



Cost-effective flexible control solution

Superior solution for thermal industry applications

Combines safety with operational capability for simplified maintenance and efficiency

Safety Manager Safety Controller

SIL3, Keeping your plant, process and people safe



Safety Manager SC offers.....

SAFETY (SIL3)

99.99%

System hardware
Availability



CYBER SECURE

EDSA L2

ISASecure certification



HAZLOC APPROVED

-40 to 70°C

Safety Cabinet design for
extreme environment



MODULAR & CERTIFIED

32 to 1K I/Os

Per controller with ESD, F&G,
Security system certification



PROVEN DESIGN

18000+

Safety Manager
Systems Worldwide



Simplified engineering, development and testing- LEAP, UIO, offline simulation

SIL3-certified system delivered out-of-the-box, no additional engineering required

Simple to maintain and flexible system for a wide variety of safety applications

MasterLogic PLC

PLC for High Speed/Large Applications



MasterLogic PLC offers.....

HIGH SPEED

42 ns/step

Fast Discrete Control



SCALABLE

250-23000

IO Handling Capacity



COMPACT SIZE

10-20%

Cabinet spacing, rack
room savings



VERSATILITY

>50

Types of IO Modules



SIMPLE ENGINEERING

~15%

Reduction of
Engineering time



Industrial logic controller powered by a high-speed processor

Flexibility of network options

Good Price to Performance ratio

ControlEdge RTU

Your edge to improved management of distributed assets



ControlEdge RTU offers.....

HARSH ENVIRONMENT

-40 to 75°C

High reliability with well designed thermal paths



REMOTE MANAGEMENT

15-20min

Reduced equipment monitoring and diagnostic time from hrs



LOW POWER

1-3 Watts

Ideal for remote installation on solar power



MODULAR DESIGN

50%

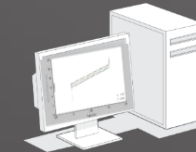
Simplified wiring and reduced time for assembly



HART & FDM

60%

Fast and accurate maintenance



SO FAR...

3500+

Systems installed Worldwide



Efficient management of geographically distributed equipment

Utilize Honeywell's Flexible SCADA Templates for Asset Engineering

Onboard Wireless IO Solution— no specialized modules needed

Scalable Control Systems

Engineering, Control and HMI

Asset Management

Business Optimization

Engineering Station

Operator Station (Experion)

Experion Server

FDM

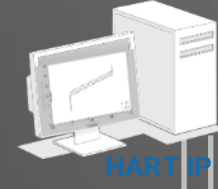
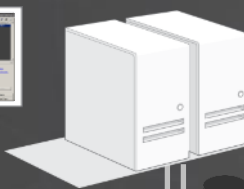
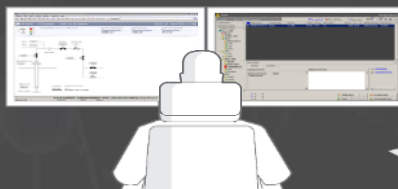
Uniformance PHD CX
Enterprise Historian

Advanced Solutions

eServer
Web Server

Virtual Simulator
Soft Controller

Experion PPC



Fault Tolerant Ethernet

Native P2P
(CDA)

ControlEdge RTU

ControlEdge UOC

MasterLogic

ControlEdge HC900

BALANCE OF PLANT

ControlEdge PLC

S8 C300

REMOTE OPS

Safety Manager SC

Plant Safety (SIL)

CORE PROCESS

Batch Ops

Compact HMI

PROFI
BUS

HART
COMMUNICATION FOUNDATION

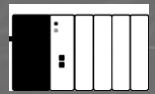
EtherNet/IP



EtherNet/IP Drive



Expansion IO



Process Measurement and Control

Comprehensive portfolio of products and software to increase accuracy, efficiency, and reliability for the lowest total cost of ownership

IIoT ready

Modular designs

Intuitive
Honeywell User
Experience

Faster, easier
maintenance

Lower
inventory costs

Integrated with
control system



Field Instrumentation



Gas Measurement



Terminal Operations



Scalable Control
Solutions

Grazie per l'attenzione!



Honeywell

Certified Channel Partner