Industrial Wireless Enabling Safety

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Agenda

1. About the speaker

2. Introduction Industrial Wireless

3. ISA100 Wireless Industry Standard

4. ISA100 Wireless Case Studies
   - Time Critical Perimeter Monitoring
   - Tank Farm Safety Compliance

5. Summary

6. Q&A

About the speaker

> "Today Industrial Wireless is increasingly deployed as an integral part of the Integrated Control and Safety Systems (ICSS)"

Diederik Mols

Vice Chairman

ISA100 Wireless
Compliance Institute

Diederik Mols is Vice Chairman of the Governance Board at the ISA100 Wireless Compliance Institute since January 2015 and an active team member of the WCI EMEA Marketing Team. Diederik got involved with Industrial Wireless back in 2009 in a business development role for the EMEA region. Diederik started his career as an officer in the Dutch Navy and over the years he gained solid business skills with a number of multi-national organizations in various roles across Engineering, Sales, Marketing and General Management. Diederik holds Degrees from the Royal Dutch Naval Academy, Den Helder and the Technical University, Delft, the Netherlands.
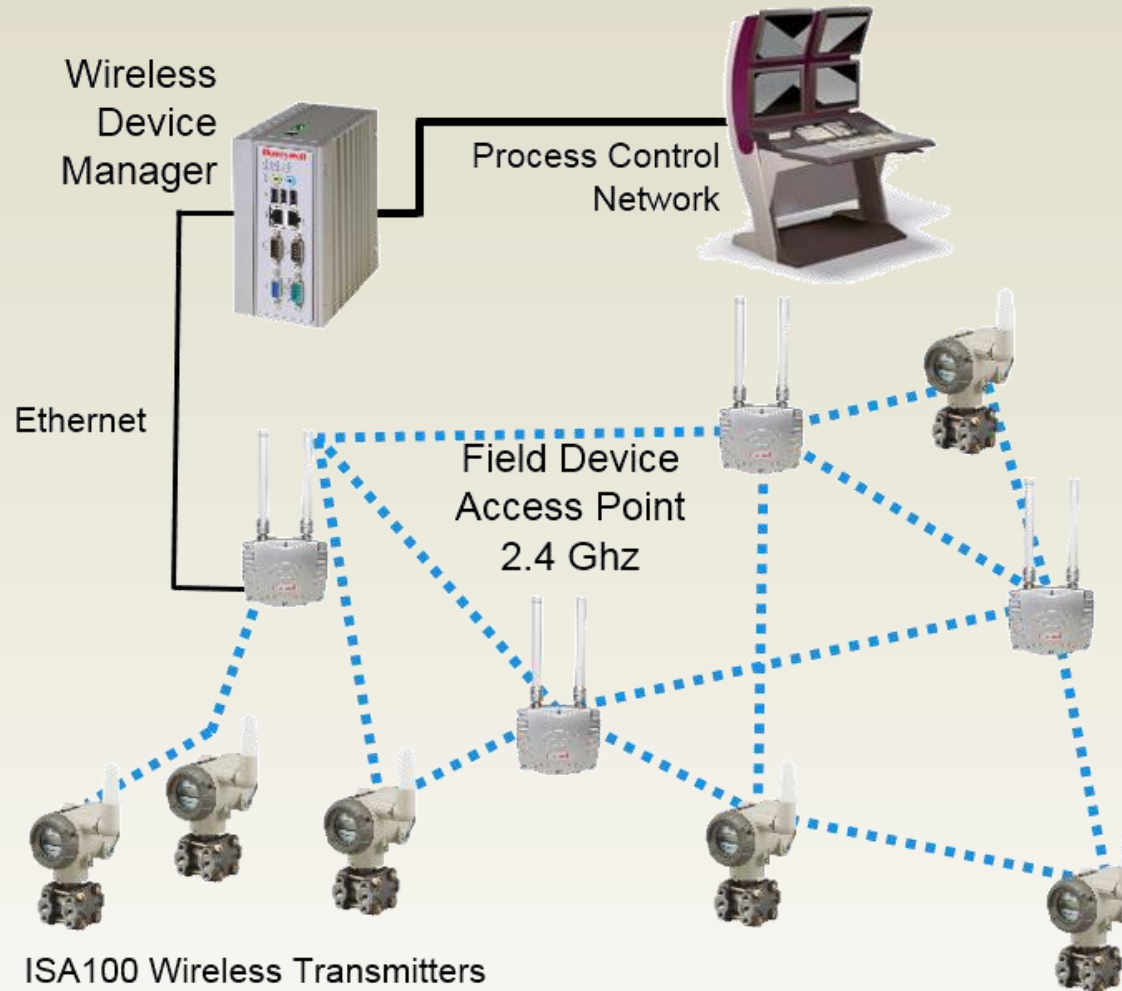
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Introduction to industrial Wireless

Wireless Device Manager

Process Control Network

Ethernet

Field Device Access Point 2.4 Ghz

ISA100 Wireless Transmitters

Applications examples
- Machine health monitoring
- Basic process control
- Monitoring of well heads
- Remote process monitoring
- Leak detection monitoring
- Diagnosis of field devices
- Condition monitoring of equipment
- Environmental monitoring
- Tank level monitoring
- Gas detection
- Fuel tank gauging
- Steam trap monitoring
- Open loop control
- Stranded data capture
- And more

ISA 100 WIRELESS COMPLIANCE INSTITUTE™

Commonly Cited Benefits of ISA100 Wireless Instrumentation

Cost Savings	• Up to 90% of installed cost of conventional measurement technology can be for cable conduit and related construction. • Typically: 1/5 the time, 1/2 the cost. • New and scaled applications are now economically feasible.
Improved Reliability	• Wired sensors may be prone to failure in difficult environments. • Wireless can add redundancy to a wired solution.
Improved Visibility	• Condition monitoring (equipment) • Process monitoring
Improved Control	• Add wireless to existing processes for more optimal control.
Improved Safety	• Safety related alarms

ISA100 WIRELESS COMPLIANCE INSTITUTE™

ISA100 Wireless Fast Facts

- International standard IEC 62734 since 2014

- Complies with ETSI EN 300 320 v1.8.1 (LBT)

- Broad Multi-Vendor Portfolio of ISA100 Wireless Devices

- ISA100 Wireless enables SIL-2 Certification

- Ensured Interoperability and best-in-class solutions

- Readily available ISA100 Wireless Modules and Stacks to enable fast-track development and go to market for new vendor members
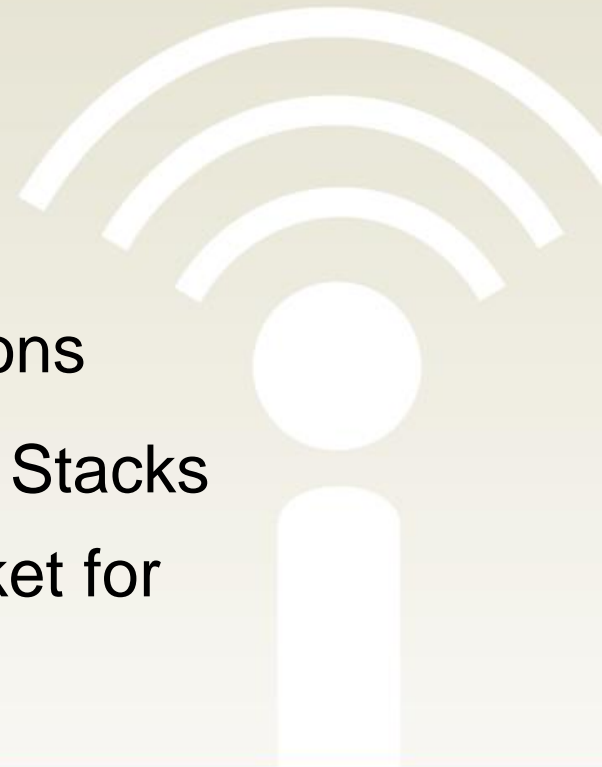
ISA100 Wireless Product Portfolio

Infrastructure

Independent Gateway
• Honeywell, Yokogawa

Access Point (AP)
• Honeywell, Yokogawa

Integrated Gateway/AP
• Honeywell, Yokogawa, CDS, Nexcom

GW/AP + Recorder
• Yokogawa

Adapter (HART, etc.)
• Honeywell, Yokogawa

Measurement & Control

Temperature
• Honeywell, Yokogawa

Pressure / Flow
• Honeywell, Yokogawa

Level
• Honeywell, Yokogawa

DI/DO, AI
• Honeywell, Yokogawa

Valve Position
• Eltav, Flowserve, Honeywell

HSE + Life cycle

Corrosion
• RCS , Honeywell

Steam Trap
Spirax Sarco, TLV, Armstrong, Bitherm

Vibration
• GE, SKF,
• Honeywell

Gas
• Gas Secure, Scott Safety, New Cosmos, Riken Keiki

pH
• Honeywell, Yokogawa

Online resources

 website www.isa100wci.org

- Learning Center with White Papers, Articles, End-user stories, Forum and more
- Receiving over 20,000 web views per month
- Full list of certified/registered ISA100 Wireless devices
- And more useful content for you and your business

Linked in **ISA100 Wireless Interest Group**

- Latest news, end-user and expert discussions, insights
- > 450 members
- Receiving over 5,000 web views per month

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Case Study 1
Perimeter Monitoring – Time Critical

LNG Facility in Middle East - Brownfield

|	
Challenges	• Alarming system for detection of gas leaks without extensive cabling. • Meet 3 seconds alarm requirement.
Solution	• FDAP based ISA100 Wireless network with XYR6000 Universal Transmitters and solar power panels. • Fully redundant system end to end.
Results	• Improved site safety system within budget. • 3 seconds alarming requirement met. • Compliance to government regulations for HSE.

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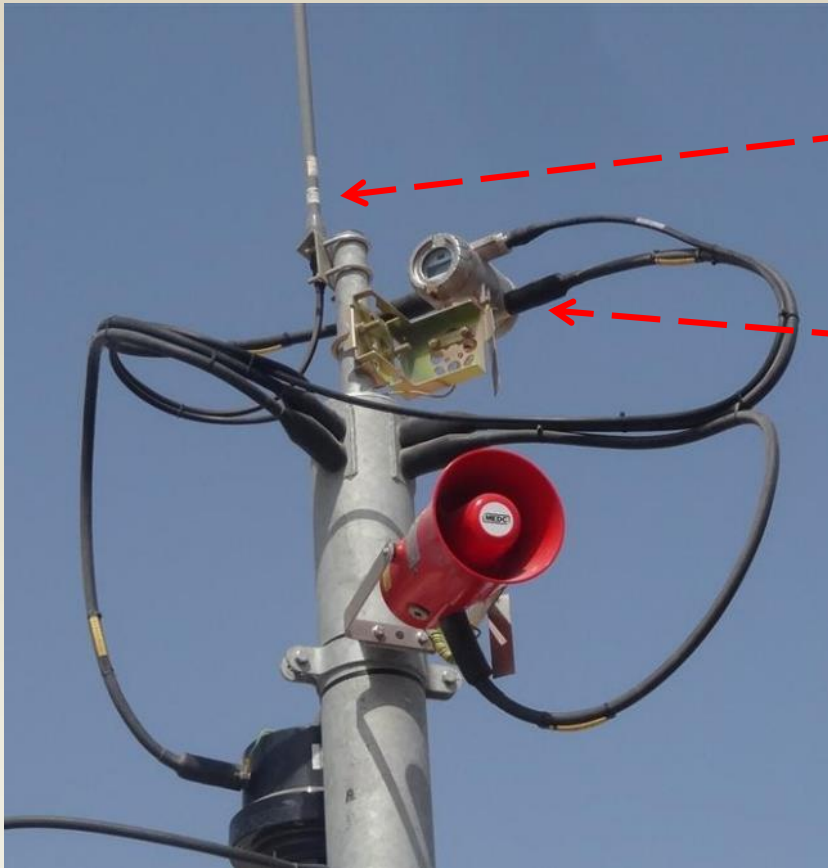
Remote antenna

XYR 6000 ISA100 Wireless Universal I/O transmitter featuring both DI and DO

"…requirement for the end to end cycle of the moment of detection of fire and gas until the moment of activation of the sounders and beacons, as well as *with absence of line power*."

ISA**100**
Wireless
COMPLIANT

Project FAT Results

- FAT successfully completed March 2014.

- The wireless solution consistently delivered an activation time of 2.9 seconds with the horns and beacons activating simultaneously.

- The system met and exceeded the stringent customer requirement of 3 seconds.

- The customer put the system through rigorous tests that were beyond the scope of the FAT, to display redundancy, fail-over and network stability.

- The wireless system withstood all their tests and attempts to show flaws and displayed its resilience and ruggedness.

- The system has been installed and commissioned at the customer site in June 2014
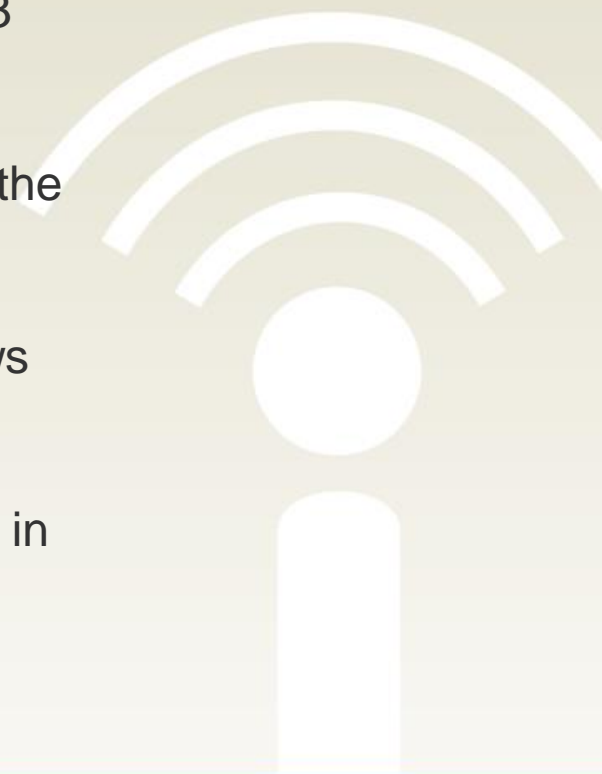
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Case Study 2
Meeting Safety Compliance

Tank Farms across India - Brownfield

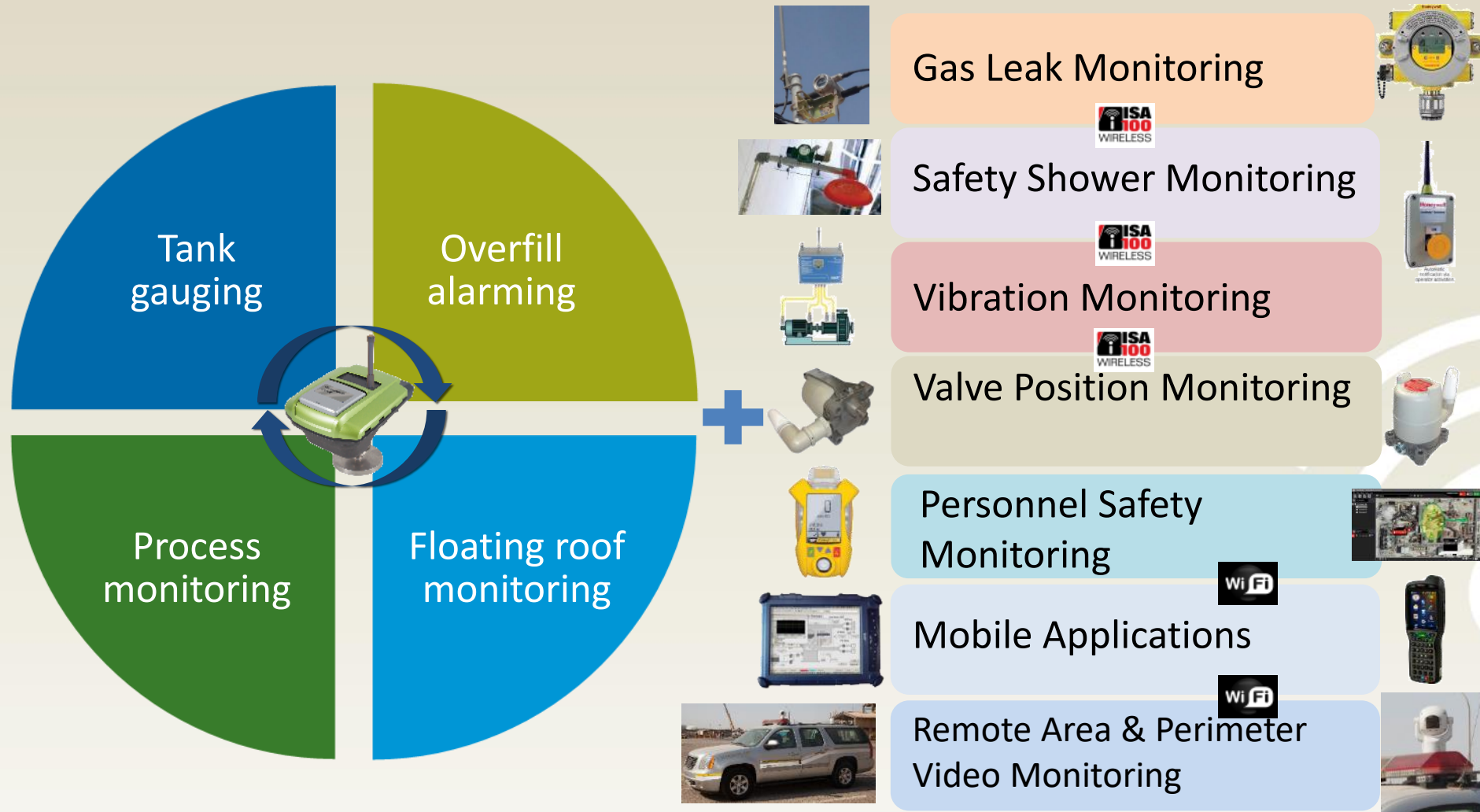|	
Challenges	• Secondary level tank gauging to meet safety compliance - M B Lal recommendations • 49 locations spread out around the country • Require end to end solution within budget
Solution	• ISA100 wireless FlexLine Radar Gauges with ISA100 Wireless Network using FDAPs • Total 90 FDAPs, 98 WDMs and over 550 FlexLine ISA100 Wireless radar gauges being deployed across the 49 locations
Results	• Compliance within budget and project schedule • Consistent deployment across all sites • Comprehensive solution to meet requirement

OneWireless Terminal Solution

Gas Leak Monitoring

Safety Shower Monitoring

Vibration Monitoring

Valve Position Monitoring

Personnel Safety Monitoring

Mobile Applications

Remote Area & Perimeter Video Monitoring

Wireless applications beyond tank gauging

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Summary

Case Study 1: Solar powered gas leak detection. With ISA100 Wireless, the project team was able to meet the "near real-time" alarm requirement of 3 sec to comply with government regulations.

Case Study 2: Improve safety with secondary tank gauging. Multiple Brownfield locations, difficult to wire. ISA100 Wireless enables FlexLine Radar Gauges to communicate wirelessly.

Thanks to the **ISA100 Wireless Industrial Standard**, project teams are able to cost-effectively meet end-user needs by integration of a wide range of devices of multiple vendors in one wireless network.

For Your Attention!

Questions?

Diederik Mols

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