Industrial Wireless
Enabling Safety

Diederik Mols
diederikm@isa100wci.org / diederik.mols@honeywell.com

Taipei, 3 October 2017
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
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. Currently Diederik is leading the Industrial Wireless business development efforts at Honeywell Process Solutions in a Global capacity. 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.

“Today Industrial Wireless is increasingly deployed as an integral part of the Integrated Control and Safety Systems (ICSS)”
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
Introduction to Industrial Wireless

Application 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
- Tank level gauging
- Steam trap monitoring
- Open loop control
- Stranded data capture
- And more
## Commonly Cited Benefits of ISA100 Wireless Instrumentation

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Details</th>
</tr>
</thead>
</table>
| 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 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
• Enable fast-track development and go to market
Online resources

www.isa100wci.org

• Learning Center with White Papers
• Articles, End-user stories, Forum
• 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

LinkedIn. ISA100 Wireless Interest Group

• Latest news, end-user and expert discussions, insights
• > 480 members
• Receiving over 5,000 web views per month
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
Case Study 1
Perimeter Monitoring – Time Critical

LNG Facility in Middle East - Brownfield

Challenges

- Alarming system for detection of gas leaks
- No extensive cabling - save costs and execution time
- Meet 3 seconds cycle time alarm requirement

Solution

- FDAP based ISA100 Wireless network
- Solar power panels
- XYR6000 Universal Transmitters
- Fully redundant system end to end

Results

- Improved site safety system within tight budget
- 3 seconds alarming requirement met
- Compliance to government regulations for HSE
“…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.”
Project FAT Results

- FAT successfully completed March 2014.
- Consistently delivered an alarm activation time of 2.9 seconds.
- System withstood rigorous tests even beyond the scope of the FAT.
- System demonstrated robust redundancy, fail-over and network stability.
- Excellent resilience and ruggedness.
- The system consistently met the stringent 3 seconds requirement.
- The system installed and commissioned at the customer site in June 2014.
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
Case Study 2
Meeting Safety Compliance
Tank Farms across India - Brownfield

**Challenges**
- Secondary tank level gauging
- Meet safety compliance - M B Lal recommendations
- 49 locations spread out around the country
- Require end to end solution within budget

**Solution**
- ISA100 Wireless OneWireless network
- 550 units ISA100 Wireless FlexLine Radar Gauges
- Total of 90 FDAPs, 98 WDMs
- System deployed across the 49 locations – Nation wide

**Results**
- On time and on budget project delivery
- Consistent deployment across all sites
- Comprehensive solution meeting all HSE requirements
OneWireless Terminal Solution

Tank level gauging

Gas leak monitoring

Overfill alarming

Safety shower monitoring

Floating roof monitoring

Vibration monitoring

Process monitoring

Valve position monitoring

Mobile applications

Floating roof monitoring

Personnel safety monitoring

Remote area & perimeter video monitoring
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
Summary

ISA100 Wireless Industrial Standard

• Cost-effectively meet end-user needs
• Enabling safety applications
• Offering wide range of devices of multiple vendors
For Your Attention!
Questions?

Diederik Mols

diederikm@isa100wci.org /
diederik.mols@honeywell.com