ADVANCES IN WIRELESS GAS DETECTION

IIOT, Wireless Gas Detection, Connected Industrials & Connected Worker

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09/05/2017

Honeywell Internal
Agenda:

• Introductions

• Company Overview
  • Honeywell
  • Honeywell Analytics – Flame and Gas Detection

• The Connected Plant & Connected Worker Journey
  • Where have we been?
  • Where are we today?
  • Where are we going?

• Live demo

• Summary & Questions
Honeywell is building a smarter, safer, and more sustainable world

THAT’S THE POWER OF CONNECTED
THAT’S THE POWER OF HONEYWELL

Connected Aircraft · Connected Automobile · Connected Home · Connected Building
Connected Plant · Connected Supply Chain · Connected Worker

• Honeywell Overview
Customer-Centered Approach

High-Risk
- Fall Protection
- Respiratory Protection
- Intelligent Hearing Protection
- Electrical Safety
- First Responder Safety

Gas Detection
- Fixed Gas Detection
- Portable Gas Detection
- Sensing Technology

General Safety
- Hearing Protection
- Eye, Face & Head Protection
- Industrial Footwear
- Protective Clothing
- Hand & Arm Protection
- Eyewash and First Aid Solutions
Already have Sensitive Fire & Gas devices within the ICSS & Standalone portable gas detectors.

No cable between RX&TX

Available Ranges
- Short: 5 to 40 m (15-130 ft)
- Medium: 40 to 120 m (130-390 ft)
- Long: 120 to 200 m (390-650 ft)
Wireless Gas Detection

✓ Wireless Portables featuring Man-Down, location via GPS, BT connection to Atex smartphone or tablet then over 3G/4G, Wi-Fi, Radio Mesh

✓ Wireless Transportable: Area monitors, perimeter monitoring, emergency response, fence line monitoring, temporary safety system (maintenance), Easy to deploy reusable & transportable

✓ Bluetooth enabled Fixed Gas Detectors.

✓ Hardware, software, infrastructure, communication is all ready to go.
Ease of maintenance

- OELD enables nonintrusive commissioning, configuration and maintenance from the palm of your hand. No hot works, no hassle.
  - Simplified maintenance with familiar smartphone technology
  - Hands-off interaction to reduce time and safety risk
  - Easy access to hard-to-reach detectors
  - Know before you go: pre-empt maintenance issues
OELD: BLUETOOTH CONNECTION

Bluetooth® using Mobile App
- Removes need to physically access or connect to OELD
- No need to open OELD= No hot work permit
- Mobile device, phone or tablet
  - Ruggedized
  - Zone 2
  - Zone 1
  - Or use regular mobile device if permitted
- See what’s going on
  - Live gas reading
  - Device status
  - Device details
- Use to configure OELD
  - Change gas name
  - Normal LED behaviour
  - Alarm set point
  - Units of measurement
  - Range
  - Resolution
  - mA levels
- Use to ALSO configure and diagnose Optima or Excel
  - Take control: inhibit, test, reset
  - Diagnose: view and clear faults and warnings as necessary
  - Maintain: set up, calibrate
**Status at a Glance**

**Green**
- Sensor is in normal condition
- 4 mA or above but below alarm set point
- Normal condition can be set off using mobile app
- Also displays 'check' icon

**Yellow**
- Sensor is in fault condition (flashing)
- Sensor is in inhibit condition (solid)
- Also displays the 'wrench' icon

**Blue**
- Pairing with a mobile device in progress (flashing)
- Connection established and detector in Normal condition (solid)
- Display reverts to relevant colour for non-normal state

**Red**
- Gas concentration above the set alarm threshold (flashing)
- Threshold can be set using mobile app
- 5% and 100% of FSD
Honeywell IIOT

- Industrial Internet of Things (IIoT) represents a digital transformation of manufacturing that shifts the source of competitive advantage away from physical machinery and towards information.

- IIoT opens up new possibilities for safety, productivity, organizational responsiveness and ultimately, profitability.

- IIoT is here, at least among the most forward-thinking companies.

- Honeywell’s progressive approach to IIoT – focuses on optimizing users’ existing automation investments by leveraging what they already have. In addition, Honeywell delivers the widest range of secure, ready-to-deploy technology across all elements of the industrial internet:
  - Smart, connected assets and devices
  - Data management and onsite control
  - Analytics
  - Smart and secure collaboration.
ConneXt Pro Provides Plant - Wide Safety
Addressing Core Industry Problems – Safety

Gains not possible with conventional methods

- Safety System Effectiveness
- Safety Element Analysis
- IPL Analysis
- Hazard Exposure Tracking
- Exposure Risk Quantification
- Operational Efficiency
- Real-time Job Readiness
- PPE Inventory Tracking
- Enterprise-Wide Compliance

Delivering Gains via IIoT Platform and Ecosystem
On the Path to the Connected Worker

Enable real-time intelligent decision making for the **safety** and **productivity** of a worker by creating a symbiotic relationship between worker, PPE, and environment.

**Safety**
- Watch for alarms from Gas Monitor
- Primary alarm from BioHarness
- Monitor vital signs through BioHarness

**Productivity**
- Hands-free Voice Solution
- Ruggedized Smart Phone
- Mobile Scanner
Technology; Connected Worker

Detection/ Monitoring/ Safety
- Gas Detection
- SCBA
- Noise Exposure
- Vital Statistics

Human Interface Devices
- Smart Phone
- Smart Watch
- Headset
- Smart Glass

System Benefits
- Consolidated Information
- Prompt Response
- Bi-directional Communication
- Extensible Framework

Data & Voice Communication (Cellular/Wifi, etc.)

Individual Benefits
- Simplified Individual Safety
- Enhanced User Experience
- Self Awareness
- Prompt Detection

Centralized Monitoring
- Remote Communication
- Vital Stat Monitoring
- Worker Exposure
- Real-Time Location
- Man Down
Personnel Safety – Organizational Readiness & Compliance

Confirm individuals are qualified for job

Equipment-inspection requirements & records

RFID-tagged Equipment Assignment

Track overall equipment inventory & readiness

Cloud Analytics

Aggregate multi-site data
- Identify best practices
- Reduce enterprise risk
- Reduce non-productive time

Real-time dashboards

Cloud Data Consolidation

Employee-training requirements & records
One Honeywell Plant & Personnel Safety Reduces Risk
Summary:

The journey continues…

• Connected Plant, Connected Workers

• Innovation & Enabling technology

• Please ask us any questions and join us for the live demonstrations.