Agenda

• Connected Worker in Context with Connected Plant

• Value Proposition and Marketplace

• Use Cases
  • Remote monitoring of Industrial Workers – PMT
  • Emergency Response Planning
  • Compliance Management
  • Hands free remote expert collaboration – UOP

• Summary
Connected Worker in Context

- Helps all plant workers get the job done fast and right, while getting them home safely
- Delivers real-time contextual info for improved decisions - saving lives and driving the bottom line
- Complements Connected People’s focus on control room competency

Honeywell Process Solutions

Honeywell Safety & Productivity Solutions

Connected Plant

Connected Process

Connected People

Connected Assets

Connected Worker
Power of Connected Worker

Connected Worker solves the biggest workplace challenge – getting the job done fast and right, while getting workers safely home to their families.

Real-time contextual information allows for faster and better decisions - benefiting the bottom line and saving lives.
THE MARKET FOR CONNECTED WORKER

$62B  Employers payout in 2016 for direct workers compensation costs

$170B  Total annual costs of workplace injuries & fatalities

$1.4M  Average cost of an occupational fatality

500%  Payback savings for each dollar invested in safety (saved costs, fines, and liability)

“…Studies on the benefits of connected workers estimate… that companies could see as much as a 300 basis point boost to their bottom line.”

“Creating a safer workplace is a top priority in many industries. Wearable and connected sensors are increasingly being used to address worker safety across industries such as oil and gas, chemicals, metals, mining and utilities”

“Industrial IoT enables factories to unlock operational efficiency, optimize production as well as assets and increase worker safety”

-- National Safety Council, OSHA
THE COMMUNITY OF CONNECTED WORKER

“I want to maximize uptime and boost productivity of my workers.”

General Manager

“I want absolute lowest price at the best value.”

Procurement

“I want zero safety incidents and less burdensome compliance issues.”

Safety Manager

“I want to assign work as effectively as possible.”

Operational Manager

“I want to get the job done fast, right and safe.”

Task Worker

“I want a digital system to query rather than stacks of paper.”

Auditor
Delivering Connected Worker

Connected Worker Platform

Task Management
- Directed work solutions to increase productivity and reduce errors
- Faster data capture; analysis for task mgmt.

Remote Monitoring
- Manage high risk workers in remote / lone situations
- Save lives, faster response and prevent incidents

Compliance
- Automate paper based management tasks
- Real-time information to prevent compliance fails and / or related incidents

Software and Apps
- Platform integrating plant, edge-devices and personnel with HS&E software
- Extensible with ecosystem enablement

Vocollect M&I, & Movilizer

ConneXt & Safety Communicator

Safety Suite & Safety Score

Honeywell Sotera™ Drives Productivity and Safety
- Incorporating real-time data and analytics from Honeywell and partner offers to drive faster and better business decisions
- Leveraging Honeywell’s assets and industrial DNA to solve contextual challenges for our customers
Safety Apps Ecosystem

Safety Communicator and Safety Score are mobile applications that enable real-time communication between a worker’s personal instruments and a remote monitoring system.
Remote Monitoring of Plant Workers

CO Alarm in Confined Space
No Alarms

Real-time Sensor Readings
Instrument Alarm

Instruct to Evacuate the Hazardous Location

Get Visual verification that worker is moving as instructed

Email manager about the alarm

REAL TIME, ALL THE TIME
Honeywell PMT Use Case

Added Location infrastructure by HIS for 50m location resolution

Industry’s most advanced wireless gas detector on PMT workers to offer best in class safety program

- 4 gas detector – O2, LEL, CO, PID
Benefits for PMT Frankford Plant (IoT Pilot)

Worker Health

Potential $40K productivity savings / Year to reduce consultant time for quarterly sampling campaign and oversight by plant resources

Enhanced personal safety and wellness for workers through improved and more continuous individual monitoring (shift by shift vs. periodic)

Confined Space, Hot Work, Leak Detection, Fenceline, Turnaround Projects

Liability and risk reduction through exposure control assurance. (improved individual monitoring and data).

Develop redundancy in response activation for confined spaces. Ability to monitor multiple people from single hole watch & parallel remote monitoring (eg. control room) with ability to respond faster.

Emergency Response

Enhanced and more rapid detection and response to incidents to reduce plant downtime (OEE Impact / approx. $1.5M per day lost OI)

Reduce risk to emergency response workers through remote monitoring. Improved decision making.

Confirm PPE selection for ERP and routine activities (e.g. Line breaks). Quantifiable validation.
Refinery Turnaround and Emergency Planning
Worker Compliance

Safety Suite
- Records Management
- Safety Training

Entry Access
- Permit
- Training
- PPE Equipment
- Smart Equipment

Asset Assignment

REAL TIME, ALL THE TIME

Geo Fence

Confined Space
Worker Compliance Management

Centralized Interface

- **Equipment Inspections**: Was this harness inspected on schedule? Is it compliant?
- **Equipment Assignment**: Which worker is assigned to it?
- **Job Compliance**: Which workers are fully compliant?
- **Training**: Has the worker completed the right training? Is he or she certified for the job at hand?

**Increase**
- Safety
- Productivity
- Worker confidence

**Decrease**
- Enterprise risk
- Operational downtime
- Cost and complexity
Honeywell Connected Worker: Head Mounted Tablet

• Value Proposition - PMT/UOP Batch Plants
  • Increases OEE
    • View Experion Graphics from the Plant to progress the batch resulting in cycle time reduction of each batch.
    • Effectively manage multiple batch sequences running in parallel.
  • Increases Worker Productivity or Operator Effectiveness
    • Helps in staying connected with the control room monitors avoiding frequent trips.
    • Real time maintenance support from experience personnel over the cloud.
  • Training and Retention of Valuable Knowledge
    • Create repository of maintenance related training videos for specific equipment repairs conducted in the plant.
  • Safety
    • View real time / historical trends of process variables in any equipment to take corrective actions improving the safety and operability.
HMT-1 Head Mounted Android Tablet – Connected Worker Ecosystem

Powerful Android wearable device
100% hands-free user interface
Noise robust voice recognition and head gestures
Fully rugged, IP66 and 2 meter drop test
Intrinsically safe (FMC1/D1) model coming soon
STRATEGIC DIRECTION FOR CONNECTED WORKER

HON Software Solutions | Mobile Apps | Lone Worker | Titan
CONNEXT Safety Solution – Connectivity Options

WiFi Infrastructure

MESH Network

Alarm Notifications  Map Displays  Decision Aid  Plume Modeling  Data Integration