Honeywell Safety and Security Forum
Together, working towards a more safe and secure future

Presentation name: Industrial Security Solutions
Industrial Security Solutions
Agenda ()

• Industrial Security Overview
  – Honeywell Industrial Security
  – Industrial Security Introduction

• Security Solutions & Products Overview
  – Extended Perimeter Intrusion Detection Solutions (EPIDS)
  – Perimeter Intrusion Detection Solutions (PIDS)
  – Access Control Solutions (ACS)
  – Video Surveillance Solutions (VSS) – CCTV & DVM
  – Pipeline Security Solutions
  – Command & Control (C&C)

• Security Solutions Integration
  – Integrated Security Solutions
  – Integration with Honeywell ICSS

• Honeywell Industrial Security Experience
  – Industrial References in Security
  – Case Studies
  – Conclusions
Automation and Control Solutions (ACS)

- $14.4B revenue in 2011 performed by 7 strategic business units
- Technologies developed in one of our business units often benefits customers in another (i.e. security, gas detection & sensing)

<table>
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<tr>
<th>Solutions</th>
<th>Products</th>
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<tbody>
<tr>
<td>Process Solutions 20%</td>
<td>Security 17%</td>
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<tr>
<td>Building Solutions 19%</td>
<td>Life Safety 17%</td>
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<tr>
<td>Process Controls</td>
<td>Motion / Human Presence Sensors</td>
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<td>Building Controls</td>
<td>Fire/Smoke Sensors</td>
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<tr>
<td>Instant Alert</td>
<td>System Panels</td>
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<tr>
<td>Sensors</td>
<td>Gas Detection</td>
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<tr>
<td>Airport Systems</td>
<td>Home Medical Care</td>
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**Solutions**
- Process Controls
- Building Controls
- Instant Alert
- Sensors
- Airport Systems

**Products**
- Thermostats
- Building Automation
- Water Control
- Gas Valves
- Electrical Devices & Systems
- Access Control Systems
- Motion / Human Presence Sensors
- CCTV / DVM
- User Interface
- System Panels
- Gas Detection
- Home Medical Care
- Mobile Computers & Software
- Scanners

*$14.4 Billion Company Focused on Automation and Security*
Helping to Meet Your Objectives

Be the Most Valued Partner to our Customers
Improving Safety, Reliability, Efficiency and Sustainability

Safety
Protect People, Assets and Process
Layers of protection to reduce incidents

Reliability
Improve Availability
Reduce Downtime
Reliability solutions that improve production profile

Efficiency
Improve Productivity
Reduce Cost
Integrated field to supply chain for faster and better decision making

Sustainability
Extend Asset Lifecycle
Optimize Performance
Lifecycle services that create value during the asset’s lifecycle

Without Security Solutions, Objectives are compromised
Honeywell’s Plant Safety Philosophy

“Defense in Depth” approach to Plant Safety

- Process Design
- Secure Process Control
- Asset Management
- Abnormal Situation Management
- Operating Environment
- Boundary Management
- Emergency Shutdown Systems (SIS)
- Physical Protection
- Emergency Response

What is Safety without Security?
What is Security without Safety?
Continuous Need to Secure Industrial Sites

- Meeting Security Regulatory Compliance
  - CFATS, MTSA, TWIC, NERC-CIP, ISPS, EPCIP, ...

- Limiting access to the assets and Preventing Theft / Vandalism
  - Reducing Direct/Indirect Losses from Internal/External Theft

- Avoiding Catastrophic Events
  - Terrorist Acts / Political Unrest

- Liability and Risk Avoidance
  - Insurance Requirements

- Enhance crisis management and response
  - Improve decision making and reduce response times to incidents
  - Improve situational awareness and efficiencies

- Lifecycle Cost Control
  - Reducing security maintenance,

- Create a safer, more secure work environment

Good Security deployment makes Great Business Sense
Honeywell’s Holistic Approach to Safety & Security

- Honeywell uses a layered, yet integrated and holistic approach to security that includes our own leading technologies, consultation, design, procurement of relevant 3rd party content, installation and support service solutions.

Honeywell is Your “One Source” for Your Security Projects
Honeywell’s Industrial Security Services

- Security Vulnerability Assessments (SVA)
- Needs and risk assessments
  - Team development
  - Development of functional specifications
- Compliance reviews
  - Local & International mandates
- Site surveys
  - Site walkthroughs
  - Installation site visits
- Site Security Plan development and review
- Access to 3rd party compliance resources
Honeywell’s Industrial Security Services

- Leading technology manufacturers for:
  - Access control
  - Video surveillance
  - Life safety, Fire & Gas, PPE
  - Perimeter and intrusion detection
  - Command & Control monitoring centers

- Complete system engineering
  - Fully integrated systems
  - Stand alone systems

- FEED and bid spec development
- Licensed engineers and estimators
- Honeywell team members are Certified
Honeywell’s Industrial Security Services

**INSTALLATION**

- Project management
- Licensed and factory trained technicians and engineers
- Access to a global pool of Domain experts
- On-time and within budget delivery
- Adherence to site safety requirements
- Global footprint for enterprise installations
- System testing and commissioning
- Training
Honeywell’s Industrial Security Services

- Local licensed and factory trained employees backed-up by a global technical assistance center
- Guaranteed service response times
- Local inventory
- Secure Lifecycle Services
  - Scheduled preventative maintenance
  - Software updates and upgrades
  - System testing
  - Parts management
- 24/7/365 technical phone support
- Compliance audits
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Security Solutions for Land-based Installations

1. EXTENDED PERIMETER
   Systems used to detect/protect approaching threats. Includes RVS and Barriers for waterways and open areas beyond the perimeter.

2. PERIMETER INTRUSION DETECTION (PIDS)
   Systems used to secure the perimeter of the facility. Includes fence detection, PE beams tied back to a panel and reported through the software.

3. ACCESS CONTROL (ACS)
   Systems used to secure the access to a facility or an area. Includes locks, card readers, visitor/contractor badging, biometric readers, and software for access authentication, asset tracking, mustering and site lockdown.

4. VIDEO SURVEILLANCE (CCTV)
   Systems used to watch the facility. Includes cameras, housings, mounts, monitors and software used for security and process control.

5. COMMAND & CONTROL
   Control center that brings all systems together on a single platform for event reporting and response.
Maritime Security Solutions

EXTENDED PERIMETER
Systems used to detect or protect approaching threats. Includes RVS and barriers for use near waterways and open areas beyond the perimeter.

PERIMETER INTRUSION DETECTION (PIDS)
Systems used to secure the perimeter of a facility or an area. Includes fence detection, PE beams tied back to a panel and reported through the software.

ACCESS CONTROL (ACS)
Systems used to secure the access to a facility or an area. Includes locks, card readers, visitor/contractor badging, biometric readers, and software used for access authentication, asset tracking, mustering and site lockdown.

VIDEO SURVEILLANCE (CCTV)
Systems used to watch a facility. Includes cameras, housings, mounts, monitors and software used for security and process control.

COMMAND & CONTROL
Control center that brings all systems together at a central point(s) on a single platform for event reporting and response.
Extended Perimeter Intrusion Detection Solutions

To Detect and Protect approaching threats beyond the Perimeter.

Vehicle Barrier System

Marine Barrier System

Radar Video Surveillance (RVS)

Remote Video Surveillance
Perimeter Intrusion Detection Solutions

- Gates & Fence Line Sensors
- Photo-Electric Beams
- Microwave Sensors
- Buried Sensors
Access Control Solutions (ACS)

- **Smart Card technology**
  - TWIC / MTSA compliance
- **Wide range of reader technology**
  - Smart Card readers
  - Intrinsically safe card readers
  - Biometric readers
  - Proximity readers / dual technology

- **Scalable hardware/software platform with many features built in**
  - Anti-pass back capabilities
  - Asset tracking / muster reporting
  - Distributive decision making
  - Visitor management
  - Remote lock and unlock
Video Surveillance Solutions (CCTV)

• Wide range of cameras
  – Fixed cameras
  – Pan, Tilt & Zoom (PTZ) cameras
  – Specialty cameras (thermal imaging, infrared, low-light, Explosion Proof Class1 Div1, long haul, …)
  – Wireless cameras
  – Third-party cameras

• Intelligent Video Management
  – User/Alarm/Event initiated video
  – Video surveillance, playback, capture, storage, archiving
  – Video analytics / motion tracking
  – Live process video + camera control
  – Satellite link to onshore facilities or HQs
Pipeline Security

- Single Fiber Optic cable deployed adjacent to Oil or Gas pipeline:
  - Detect 3rd Party Interference along the pipeline
  - Real time monitoring the progress of a PIG though the pipeline
  - Perimeter Intruder Detection at in-line facilities
  - Remote condition monitoring of rotating machinery at in-line facilities
  - Gas Leakage Detection

- Create Zones to tailor the exact needs:
  - Perimeter security,
  - Leak detection
  - Hot tap prevention

- Intelligent acoustic sensing and interpretation reducing nuisance alerts:
  - Non threatening vs threatening activities,
Leak Detection

Leak detector focused on multiple effects of gas leaks

Tests indicate that the detection of Leaks solely through temperature changes in the surrounding ground is limited and diffusion is slow.

A combined approach using a fusion of acoustic, strain and temperature effects on the fibre provides a more comprehensive and robust (to false alerts) solution than a single signature detector, such as temperature.

High pressure gas leaks invariably cause a burst (minor or major depending on Leak) in the pipeline lining, ground movement and temperature change in the vicinity of the leak.

Rapid Leak Detection is crucial to pipeline safety and when combined with Experion, OptaSense can provide accurate location and forensic analysis.
## Command & Control (C&C)

### Enterprise Building Integrator (EBI) Capabilities:

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<th>Alarm Management</th>
<th>Personal Management</th>
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<td>• History &amp; Trending</td>
<td>• Alarm annunciation</td>
<td>• Cardholder Management System</td>
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<tr>
<td>• Event Collection and Archiving</td>
<td>• Alarm paging or email</td>
<td>• Visitor Management System</td>
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<tr>
<td>• Pre configured and flexible reporting</td>
<td>• Alarm archiving</td>
<td>• Flexible Database</td>
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<td></td>
<td>• Event collection</td>
<td>• Tenant Web Access</td>
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<td></td>
<td>• Alarm and event reporting</td>
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<th>Equipment Management</th>
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<tr>
<td>• Easy to Use, Simple Interface</td>
<td>• Easy control through standard or custom Graphics</td>
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<tr>
<td>• Live video and animation support</td>
<td>• CCTV control</td>
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<tr>
<td>• Operator security and passwords</td>
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The Power of “Out-of-the-Box” Integration …

Honeywell’s holistic approach
Integrated solution, single view

A non-integrated approach
Each supplier has a different view

No risk – Field-Proven Solution

Big risk – You become the Security Integrator

... Reduces Your Risk
Perimeter & Pipeline Security Solution Integration

- Management of hundreds of KM of pipeline surveillance from a central location
- Integration of remote asset perimeter & pipeline surveillance of CCTVs, lighting, … provides unification in O&G distribution asset protection
- Early detection improves response times and prevents incident occurrences
“Out of the box” Integration with Honeywell ICSS

- Common Software Platform, No Hardware interface
- Easy Configuration and Engineering
- Exchange Real time data
- Common Alarms, Reports and Toolbars
- Single Supplier for Project and Lifecycle Support
- Common Upgrade Path over time
- No Proprietary Software Link

**Integration of Information Improves Your Responsiveness**
Integrated Solution

Point Solutions = Complexity = Lose Benefits / Costly Maintainability / Poor Usability

Integrated Honeywell Solutions

Integrated Solutions Deliver Operational And Business Benefits
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Honeywell’s Industrial Security Experience

- Honeywell has over 40 years extensive experience delivering turnkey security solutions to customers in diverse industrial markets:
  - Oil & Gas (onshore/offshore, upstream, midstream and downstream)
  - Refineries, Petrochem and chemical plants, Pulp & Paper and power plants
  - LNG plants and Terminals
  - Metals, Mining and Mineral
  - Pipelines
### Our Industrial References in Security

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Brownfield refinery needed a perimeter intrusion security solution protecting its assets and people

- **Scope of responsibility**
  - Access Control, Video Surveillance (CCTV), Perimeter Protection fixed + PTZ dome cameras
  - Vehicle barriers, turnstiles, tripods
  - Network infrastructure, Command Control
  - Design, construction, installation, test services
  - Integration of smart ‘Mifare’ TOTAL badges

- **Feedback**
  - Honeywell acting as the main contractor for the delivery of the security technology and the civil activities
  - Longterm lifecycle support including migrations to newer technology
The Al-Murjan Village compound needed a perimeter intrusion security solution protecting ex-patriots and their families from potential intrusion

- **Scope of responsibility**
  - Video Surveillance (CCTV), Perimeter Protection day/night cameras + PTZ dome cameras + existing fixed cameras
  - *Sonar* Video Surveillance, 3rd party sonar, Command Control
  - Network infrastructure
  - Design, installation, integration, test & training services

- **Feedback**
  - Complete 2011
Example @ Equate Petrochemical (Kuwait)

Existing facility needed an overall perimeter security solution for its petrochemical units using existing security infrastructure

- **Scope of responsibility**
  - Video Surveillance System integrating the existing security gate & building CCTV and other perimeter cameras into one single large system
  - Design, installation & test services
  - Use of Video Analytics planned in the future

- **Feedback**
  - **automation vendor Honeywell** acting as the main contractor for the delivery of the security technology
  - **Lower lifecycle costs** for future expansion maintaining common integrated solution across site
Example @ Angola LNG (Angola)

Greenfield LNG plant needed security solution protecting 14Km site and 7,500 workers for construction phase and normal operation

- **Scope of responsibility**
  - Video Surveillance (CCTV), Perimeter Protection, Radar Video Surveillance, Access Control
  - Public Address & General Alarm system
  - UPS and generator sets, network infrastructure
  - Design, construction, installation & test services

- **Feedback**
  - Honeywell’s OneWireless technology used for temporary IT infrastructure to accelerate schedule and accommodate changing construction site perimeter
  - Security system on same software platform as process automation system for optimized support in remote location
Example @ Freeport LNG (Texas, USA)

Greenfield LNG receiving and regasification terminal needed security solution protecting the site and its employees

• Scope of responsibility
  – Perimeter Protection cameras, fencing and lighting, IR intrusion detectors, vehicle barriers, loop detectors, turnstiles
  – Video Surveillance (CCTV), Access Control, Command Control
  – Network infrastructure
  – Design, construction, installation & test services

• Feedback
  – Significant project cost savings partnering with automation vendor Honeywell acting as the main contractor for the delivery of the security technology and the civil activities
  – Customer approved to become a Honeywell Security reference site
Example @ Exxon Neftegas Ltd. - Sakhalin 1 (Russia)

Greenfield development project needed security solution protecting the onshore processing facilities and the well site

- **Scope of responsibility**
  - Video Surveillance (CCTV), Perimeter Protection, Access Control
  - Data redundancy
  - Included NEMA4 compliance panel to be installed outdoor to withstand -40 degC
  - Design, construction, installation & test services

- **Feedback**
  - Smooth integrated project execution by **Honeywell** acting as the **main contractor** for the delivery of the security solution
  - **Ability for future integration** to other ENL sites in Sakhalin
Example @ KazTransOil Pipeline (Kazakhstan)

Customer needed to ensure security of an important Crude Oil pipeline and protect company assets in remote locations with difficult access

- **Scope of responsibility**
  - Acoustic sensing technology deployed over FO
  - Design, construction, installation & test services

- **Feedback**
  - **Automation vendor Honeywell** acting as the **main contractor** for the delivery of the security technology and the civil activities.
  - **Significant reduction in illegal tapping** – from a few per week to a few per 3 months
  - **Remote** security management and control
  - **Ability to scale up** the solution for future extension - 2\textsuperscript{nd} project phase accelerated (2011 budget forwarded to 2010)
Honeywell’s Industrial Security Value Statement

• Intimate understanding of industrial plants and unsurpassed security experience in industrial plants
  – Honeywell owns and operates industrial plants worldwide
  – Committed to security + strong global industrial security customer base

• Unique holistic security approach providing industrial customers a turnkey, integrated, total security offering
  – Leadership position in high-end security solutions in diverse markets
  – Multiple security technology/applications integrated on a single system
  – Security consultancy, design, installation and support services

• Global reach / Local consistent delivery and support
  – Standard global project delivery practices
  – A global solution support network of professionals
  – We cover 120 countries with 8000+ Technicians/Engineers

• A trusted and financial healthy business partner
  – Excellent safety record
  – Single point of accountability -- simplifying TOTAL’s management effort

Your “One Source” Security Partner
Existing multi-site/multi-owner chemical facility needed an overall security solution

- Scope of responsibility
  - Access Control, biometrics & visitor management
  - Vehicle barrier using Honeywell Spectra Fiber
  - Spectra Fiber storm curtain for guard house
  - Video Surveillance (CCTV) – wireless & solar-powered cameras, integrated on process control system with 40 process and 45 security cameras
  - Use of Video Analytics software
  - PE beam intrusion detection system
  - Radar Video Surveillance (marine & land radar)
  - Asset tracking (people & equipment)
  - Automatic, real-time personnel accountability
  - Situational awareness (graphics & alarm display)
  - Regulatory compliance & checkpoint management (TWIC, TSA)
  - Design, installation & test services

“Having the security system totally integrated with process control is what makes this project best in class. If there is ever an incident on site, everyone (security & process employees) knows about the incident in real-time. We are now able to get the right information out to the right people quickly and go into action immediately. **This reduces risk enhancing not only security, but safety.**”

Bill Lessig
Plant Manager Geismar
Honeywell Specialty Materials
Questions & Answers