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INSTITUTE

Apprion Presents:

An Open, Intelligent Application Platform Approach to Your IIoT Strategy

APPRION®

Presenters Today

- Chris Witte, Senior Vice President Freeport Site, BASF Corporation

- Sarah Prinster, Vice President of Marketing, Apprion, Inc.

- James Skoruppa, Site Automation Strategy Leader, BASF Corporation

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Andre Ristaino, ISA100 WCI Managing Director
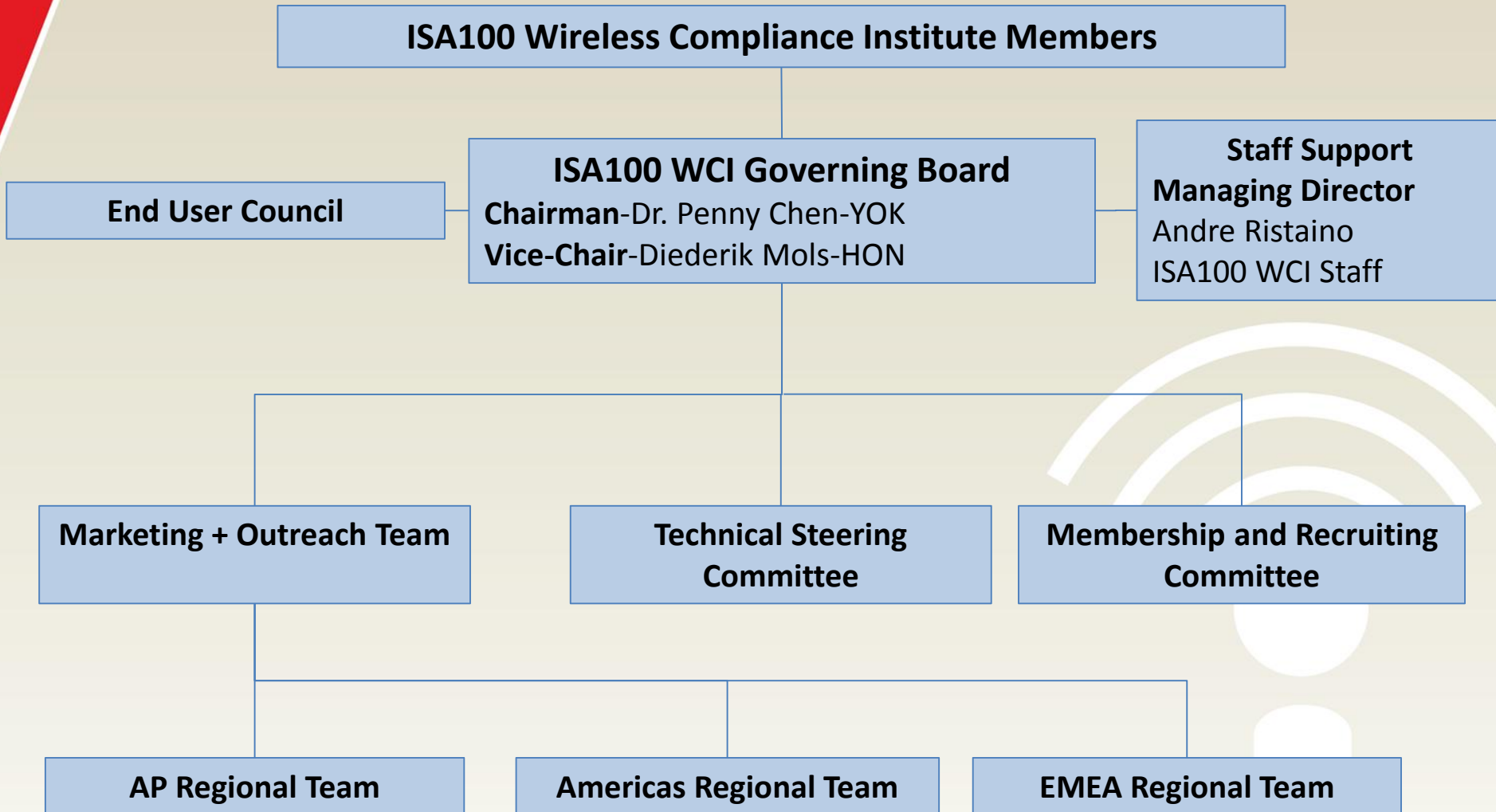
www.isa100wci.org

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ISA100 Wireless Compliance Institute Mission

- Manage the ISA100 Wireless certification program to assure interoperability

- Promote the ISA100 Wireless Standard

    – Technology Demo in FCL at Achema June 2015
    – Three live networks with 36 devices from 17 vendors
    – Showcased expanding technical and infrastructure ecosystem
   – Visit the www.isa100wci.org website for more show details

Visit the ISA100 WCI website www.isa100wci.org

ISA**100**Wireless
Compliance Institute INSTITUTE

Organization Structure

ISA100 Wireless Compliance Institute Members

End User Council

ISA100 WCI Governing Board
Chairman-Dr. Penny Chen-YOK
Vice-Chair-Diederik Mols-HON

Staff Support
Managing Director
Andre Ristaino
ISA100 WCI Staff

Marketing + Outreach Team

Technical Steering Committee

Membership and Recruiting Committee

AP Regional Team

Americas Regional Team

EMEA Regional Team

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ISA100 Wireless Global Installation Map
Over One Billion Operation Hours
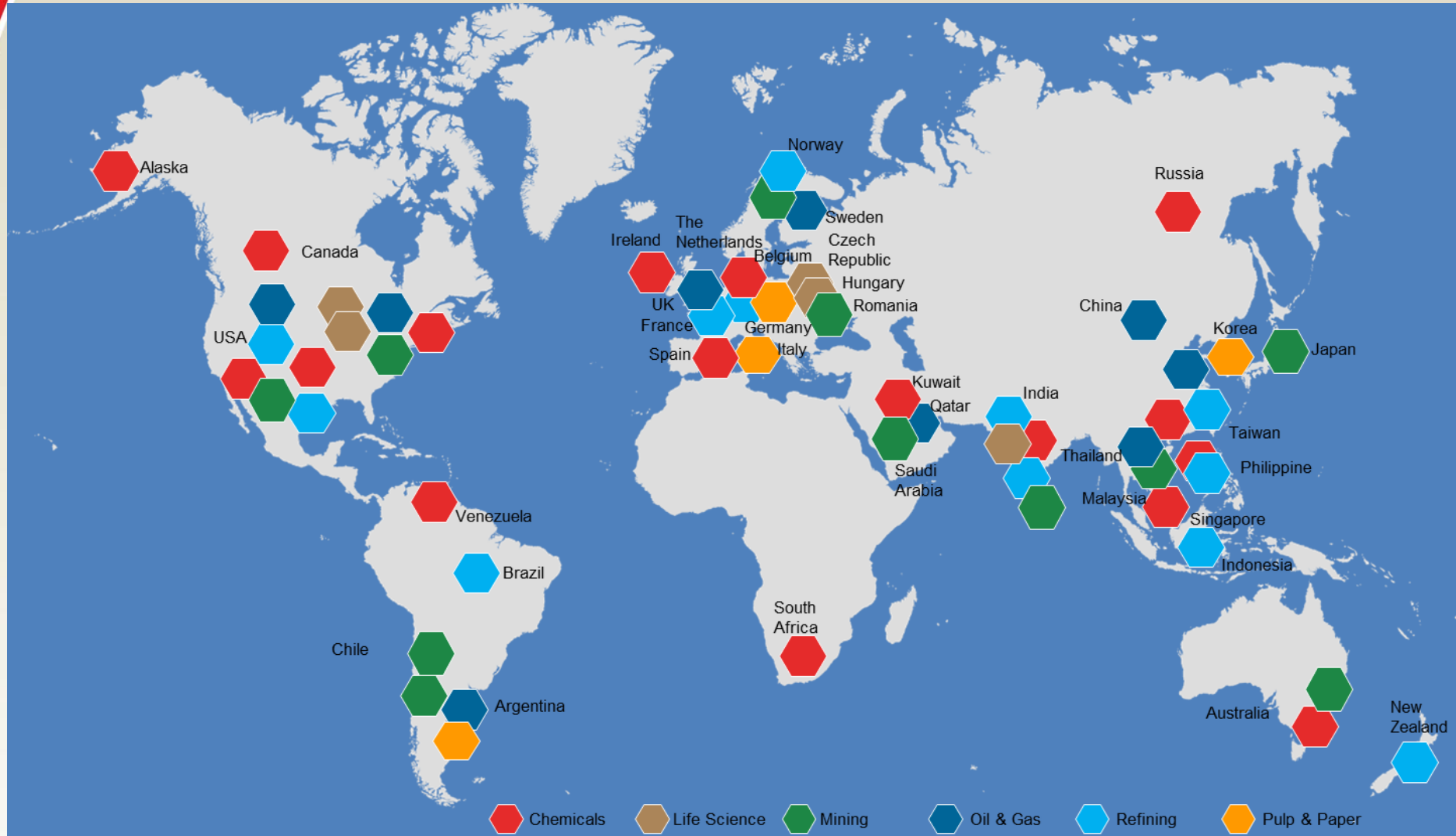
Agenda

- 45-minute presentation
  - What is IIoT
  - Apprion and the IIoT
  - ISA100 and the IIoT
  - Customer Success Stories with IIoT
    - BASF Freeport IIoT Approach
      - Mobility
      - Video
   - Mustering

- Followed by a 15-minute Q&A session

What is the Industrial Internet of Things?
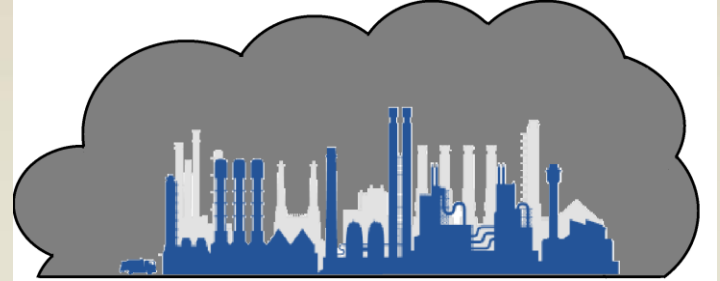
- Internet of things, devices, machines, computers and people

- Using advanced data analytics for transformational business outcomes

- Convergence of:
  - The global industrial ecosystem
  - Advanced computing and manufacturing
  - Pervasive sensing
  - Universal network connectivity

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Key Aspects of IIoT

- Utilize predictive analytics with IIoT technologies to improve operational processes

- Integrate various applications, systems and devices seamlessly to improve plant safety and security

- Create an IIoT with an open network and platform approach to incorporate remote and stranded data into daily decision-making

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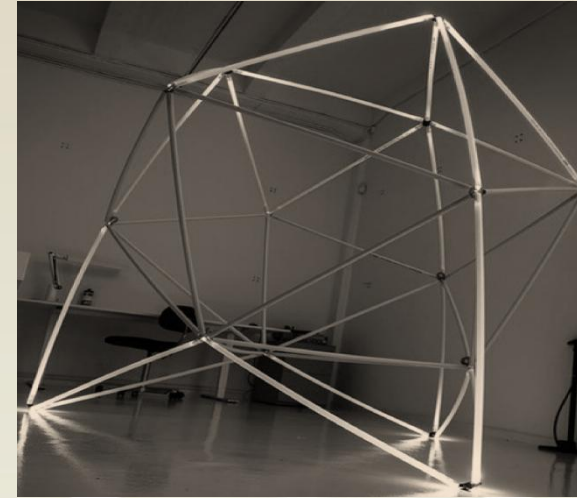
Apprion: Who Are We?
We Were IIoT when IIoT Wasn't Cool

- Apprion has been an IIoT company from the beginning – over a decade

- Designed ION Platform and Solution offering from the start to be open, integrated, industrial and inter-connective

- Focus is on predictive analytics and predictive monitoring of all interconnected devices and applications

Apprion and IIoT: Industrial Wireless Today

APPRION®

MULTIPLE APPLICATIONS
- Comms
- Video
- Location
- Mobility
- Monitoring

INDUSTRIAL GRADE
- Rugged
- Safe
- Secure
- Resilient
- Ready

OPEN ARCHITECTURE
- Vendor
- Wireless
- Wireline
- Device

MANAGED SERVICES
- Site Planning
- Deployment
- Monitoring
- Maintenance

The ION System from Apprion Provides an Open, Integrated, Secure, Resilient Solution

Integrated Solution.

An integrated system for monitoring and managing multiple applications, devices and systems in one dashboard.

Unique managed services offering with 7x24x365 network monitoring from industrial experts.

Managed Service.

Multiple Applications.

ION Applications address key industrial safety, security, compliance and performance issues.

Vendor-Neutral Hardware.

An open, integrated, secure, and truly industrial system for monitoring, managing, and securing any industrial device.

APPRION®

Integrated Solution

The ION System provides customers with a platform for monitoring, managing, and securing multi-vendor devices and applications

Features
- Integrated applications
- Multiple vendors
- Secure
- Open
- Monitoring/Managing

Benefits
- Ease of use
- Ease of installation
- Lower total cost of ownership
- Resilient

Video
Security
Process
WiMAX

Location
Access Control
Mustering
Personnel Tracking
Asset Tracking

Monitoring
Conditions   Leak
Emissions   Detection
Tank Gauging   Pipeline
Network   Safety Shower
                 Steam Trap

Communications
Emergency Notification
Digital Walkie-talkie
VOIP
Collaboration

Mobility
Turnarounds
Workflow
Mobile
Workforce

Honeywell

Siemens

Cisco

Emerson

Motorola

ABB

Yokogawa

RFID

ZigBee

ISA-100

Blue tooth

WiHART

WiMAX 802.16

LTE

WiFi 802.11

VSAT

FieldBus   ModBus   HART   OPC   4-20mA

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26 August 2015
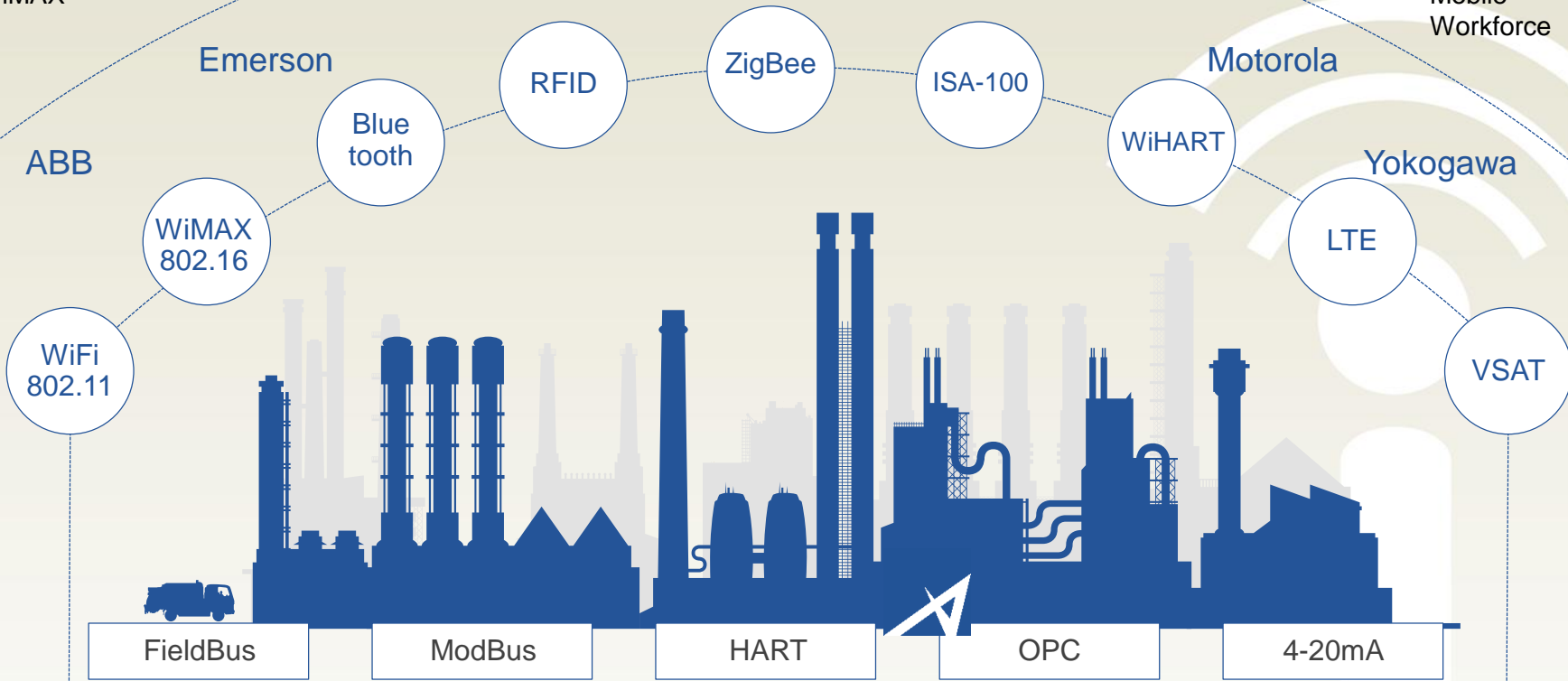
ISA100 Wireless Supports IIoT

- IPv6 – Infinite Addressing, more efficient network protocol standard

- Multiprotocol Support

- Strong Security, Two-Layer AES128

- Connecting multi-devices from various vendors in an integrated IIoT system

The ION System and ISA100 for IIoT

- Implemented at leading Chemical Facilities and Refineries

- Improved visibility into the actual performance of production assets

- Pull data and visualize it in meaningful ways

- Integrate multiple devices is key to both ISA100 and Apprion

- Bring together disparate pieces of information from various siloed plant systems

Why IIoT is important to BASF

- Interconnected devices is critical to our Multiple Applications Strategy

- An Open Platform – Adding multiple applications and devices is critical to our strategy

- Big Data – Industrial Wireless Video for Security and Safety

- Predictive Analytics

□▪**BASF**
We create chemistry

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BASF IIoT Strategy

- Safety Challenges at Freeport site

- Focus on Safety Improvements

- Think out of the box for Personnel Safety – Wireless Automated Mustering

- All under one infrastructure with integrated applications

- Design an Open, Phased Approach

- Partner with Apprion

- Implement the Infrastructure and the Applications will quickly come
- Many Applications in our IIoT Approach: Video, Mobility, Mustering, Reliability, and more!

The BASF IIoT Application Approach

- ION Mobility for Turnarounds – mobile handhelds and real-time data transfer

- ION Video – Wireless IP-Cameras for Perimeter Security

- ION Mustering – Automated Personnel Mustering with WiFi Badge Check-in

The 1st Application: ION Mobility for Turnarounds - Efficiency & Safety

- Integrated Dashboard

- Motorola handhelds

- Mobility software on handhelds

- Utilize the Open Wireless Infrastructure

- ION Remote Managed Services
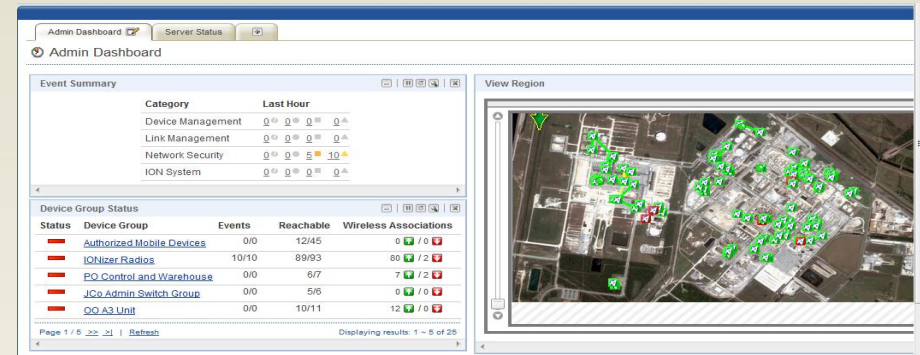
The 2nd Application: ION Video Security & Safety

- Industrial World-class cameras IP and Analog

- Big Data: Days and weeks of storage Months of Archive

- Intelligent Video Analytics

- Object, Motion, Intrusion & Face Detection Ability

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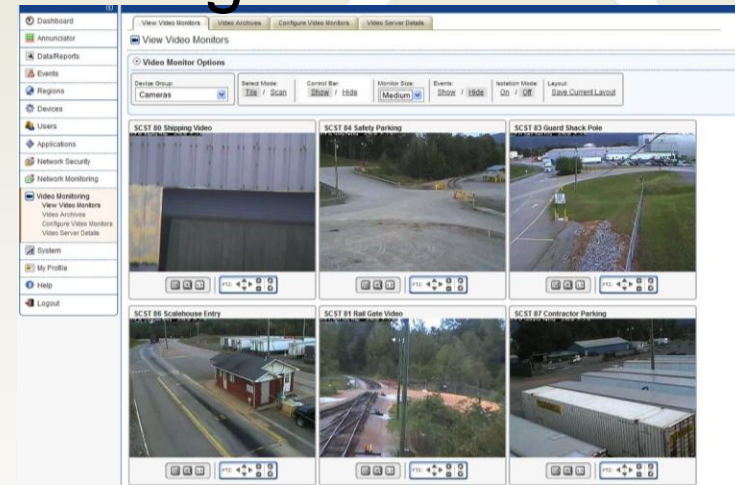
Safety – our #1 Priority

Be Safe

- Reduce hazardous incidents by 50% or more through accurate, real-time information

- Monitor worker & asset health, location and condition during high-risk times

- Avoid costs of unplanned downtime resulting from unexpected events

- Leverage the same infrastructure for critical plant monitoring and performance applications

The 3rd Application: ION Mustering Security & Safety

- Verify personnel location during Emergencies
- Leverages RT Personnel Tracking (WiFi, GPS, RFID)
- Visual Confirmation of Personnel Safety
- Faster, More Accurate and Efficient Mustering
- Greatly Improves Safety & Emergency Response Handling
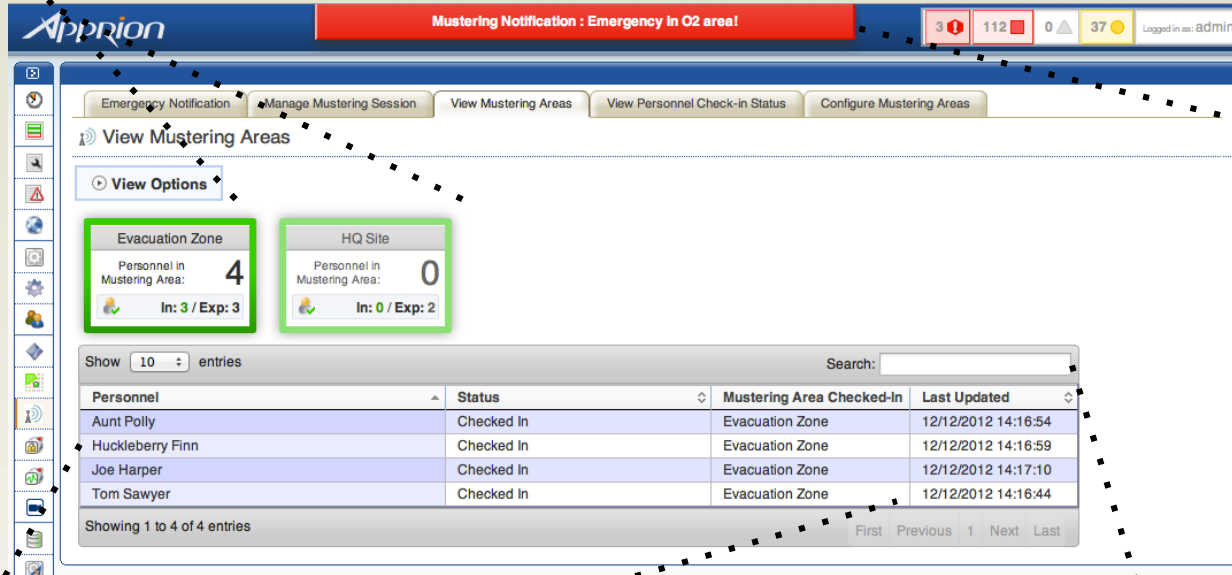
Mustering

ION Mustering Application

- Immediate need is to locate your people
Are they safe?

- Mustering is highest priority for safety

- Most existing systems are antiquated and require manual action

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Mustering Zone

Status by Mustering Zone
View specific asset and personnel coordinates and location in region

Advanced Privacy Controls
Restrict and filter location information by Emergency Event, User Roles and Privileges

Worker-Level Detail
Easily view recent asset condition and status reports

Time-Stamps
View all events in specific location for a defined time period

Search
View all events in specific location for a defined time period

Integrated ION Mustering Platform

Results to Date

- Improved Safety and Security
- Improved Operational Efficiency
- Management and maintenance costs metrics
- Increased uptime from the improvement in overall equipment effectiveness that increases production quality and quantity
- Improved turnaround execution with better communication
- Technology investment less than 1% of Turnaround budget with significant savings

Extending Wireless at BASF

- Additional Mobility Applications
- Access Control for Additional Personnel Safety, Security, & Efficiency
- Advanced Wireless Communications
- Big Data – Reliability & Predictive Analytics
- Operator Mobility
- Construction – CapEx Efficiency Applications

Our Advice to You for an IIoT Strategy

- Carefully Evaluate Your Key Goals
- Research the available Application Options
- Lead with Safety & Security - Human Issues
- Work with an experienced IIoT Vendor – the chosen platform must be Open
- Start Small and Build with an Incremental Approach
- Don't create Siloed Systems

Thank you!