



***tyco***



# ENGAGE

**TYCO CONFERENCE 2019**



**Johnson  
Controls** 





**tyco**



**ENGAGE**  
TYCO CONFERENCE 2019



# Convexum

Proactive Counter-drone perimeter protection

Gilad Sahar



Johnson  
Controls





- 🔗 Are drones here to stay?
- 🔗 Is their popularity growing?
- 🔗 Don't they have remote ID?
- 🔗 Can we do something about it?



# Our Offering - Multi-Layer Approach



## DETECT

Real time monitoring for unauthorized drones entering your property, or attempting to take off on it.



## PREVENT

Automatically deny take-off within the protected perimeter.



## CONTROL

Automatically take over, reroute and safely land unauthorized drones in a predefined landing zone.



# Use case - Torrealvaliga Nord, Italy



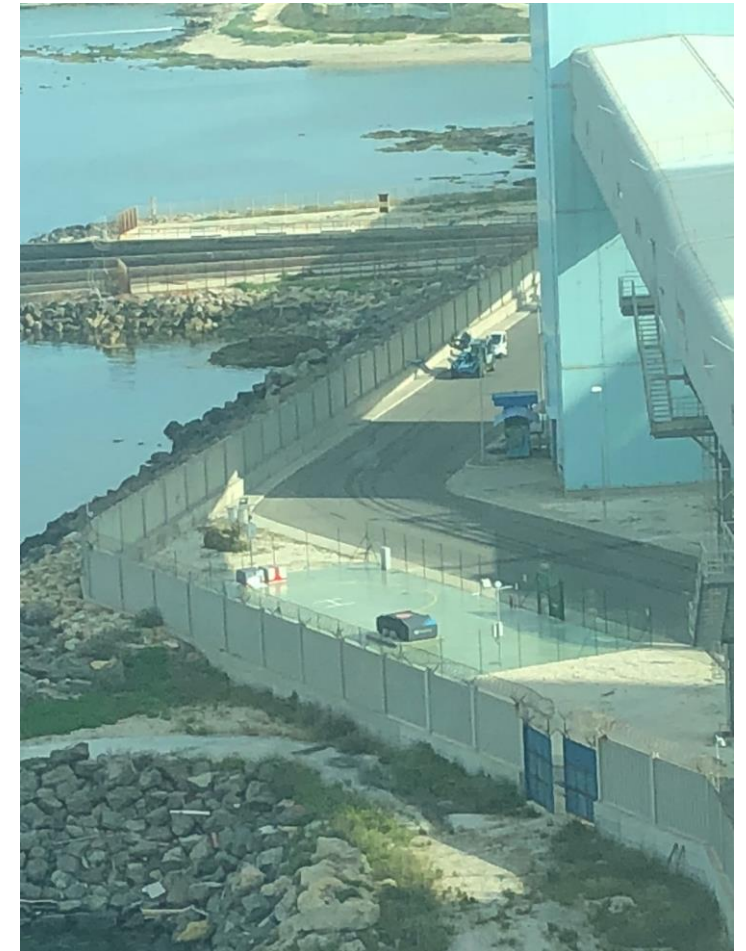
**ENGAGE**  
TYCO CONFERENCE 2019



Installed Sensor on a power plant tower



Site control room with live dashboard



Secured landing position (fenced and marked with H)



- 🔗 Whitelist friendly drones
- 🔗 Sensor connection - PoE single cable
- 🔗 Viktor full integration
- 🔗 Training takes 1 day
- 🔗 Airport size installation: 20-30 sensors





***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



Thank you

Questions?



**Johnson  
Controls**





**tyco**



**ENGAGE**  
TYCO CONFERENCE 2019



# emerald Room Booking and Health and Safety

Paul Sheeran

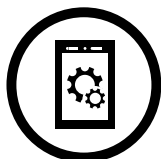


**Johnson  
Controls**





# What is emerald?



## ***IP Edge Smart Card Reader & Controller***

- Large Offline Database
- Maintenance Point
- Decision making at the door
- Option for Biometric



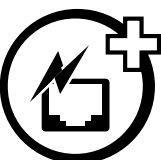
## ***Capacitive Touch Screen***

- Scramble Keypad
- Interactive menus
- Illustrated messages
- Advertising



## ***Fully Integrated VOIP Intercom***

- Voice over IP
- Half-duplex
- 16 kHz audio
- On server recording



## ***Power over Ethernet Plus***

- On-board PoE+
- Power & Comms down one cable
- Powered DC 12 V relay outputs
- Up to 850 mA at the door



## ***Remote Smart Applications***

- Server based functions at the door
- Change PIN
- Set Threat Levels
- Add additional access for cardholders



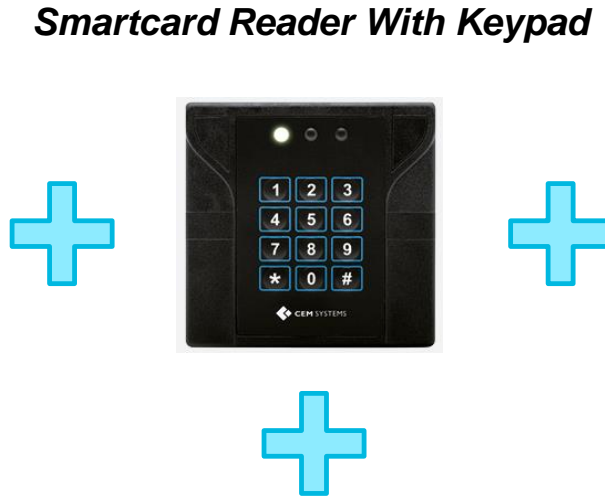
# emerald – Multi-functional Terminal



**ENGAGE**  
TYCO CONFERENCE 2019



*Door Controller*



*Smartcard Reader With Keypad*



*Intercom Device*



*Client Based Functions*



*emerald Intelligent Edge Terminal*



**+ Much More!!**





**40%** of employees waste up to 30 mins  
a day searching for meeting space

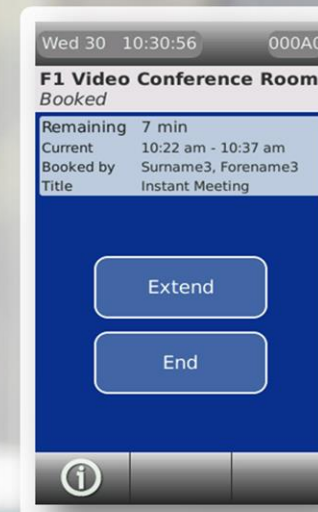
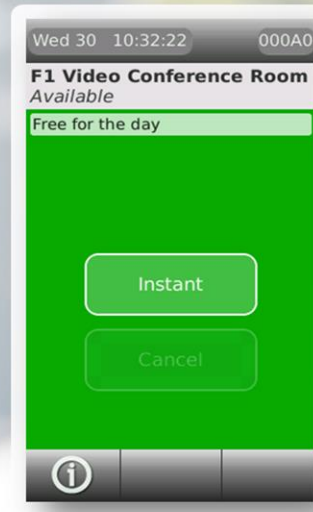


## Emerald Room Booking

- Single Database for both Access Control and Room Booking
- Half the number of network points required
- Guarantee of compatibility with access control cards
- Reduces costs – no separate Room booking system to procure and maintain
- Managed through Microsoft Outlook Client or directly via emerald
- No yearly licence fees
- Utilise Microsoft Calendar on PC, tablet or smartphone for meeting reminders

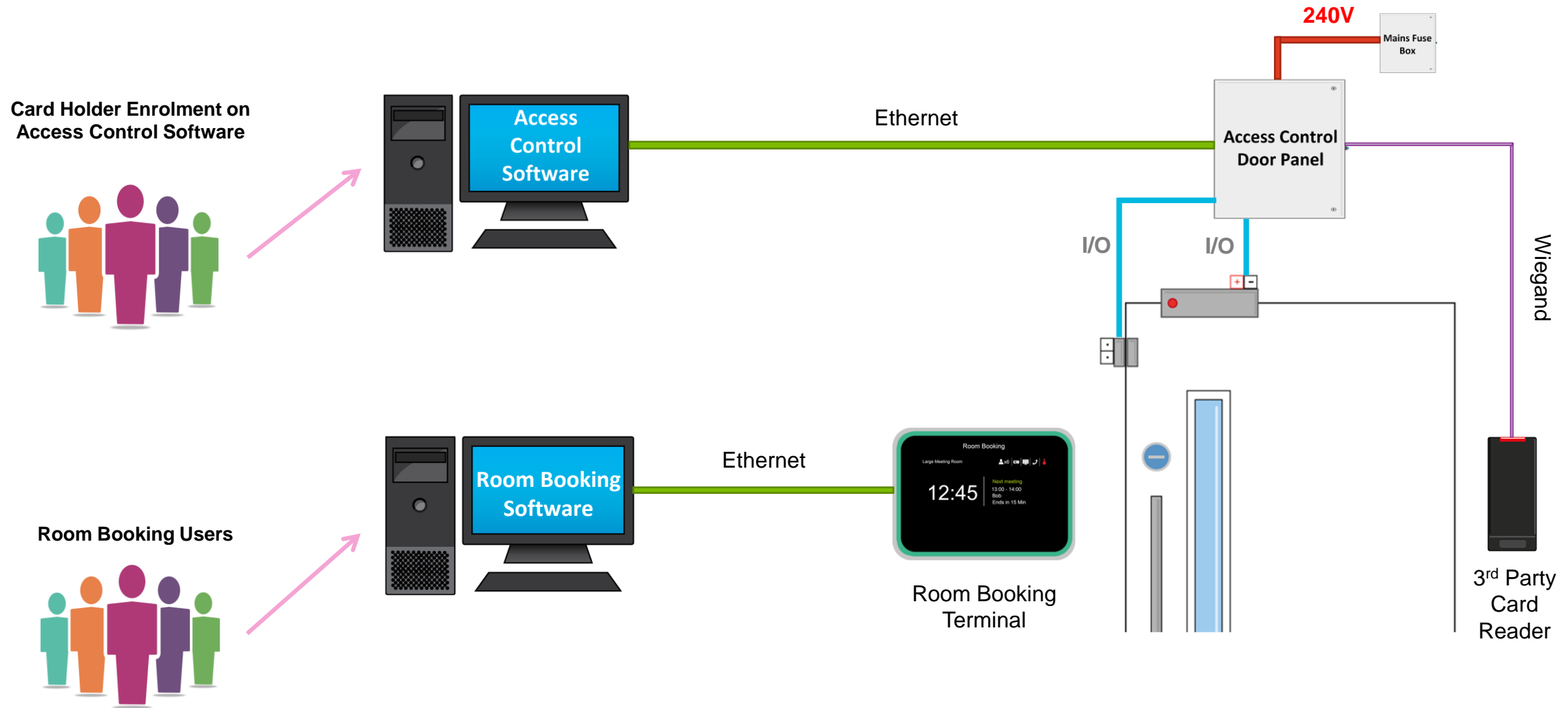


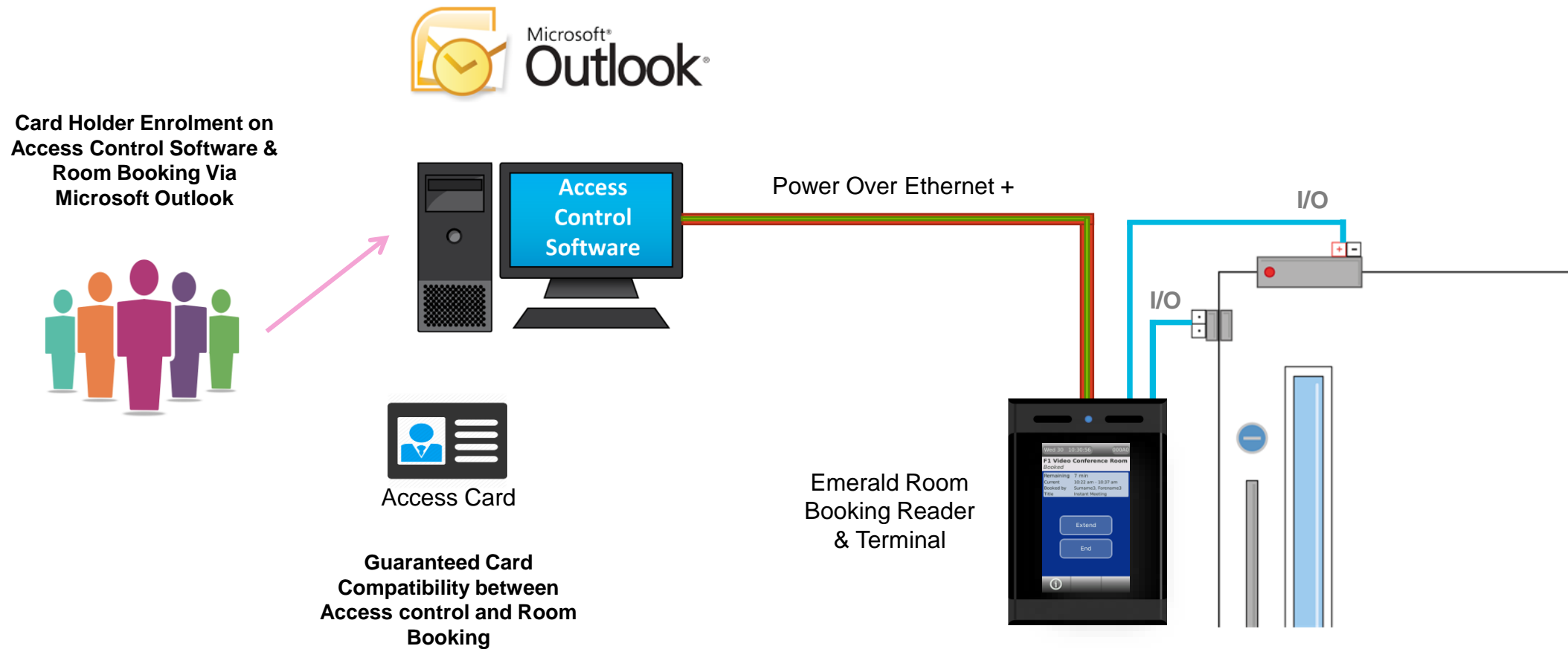
Microsoft®  
**Outlook®**






# Traditional Room Booking







Health and Safety with CEM Systems....

***emerald***





## ■ Emerald Biometrics

- Removes the ability for people to gain access to site through card and PIN sharing
- Increases security by protecting workers from individuals who shouldn't be there

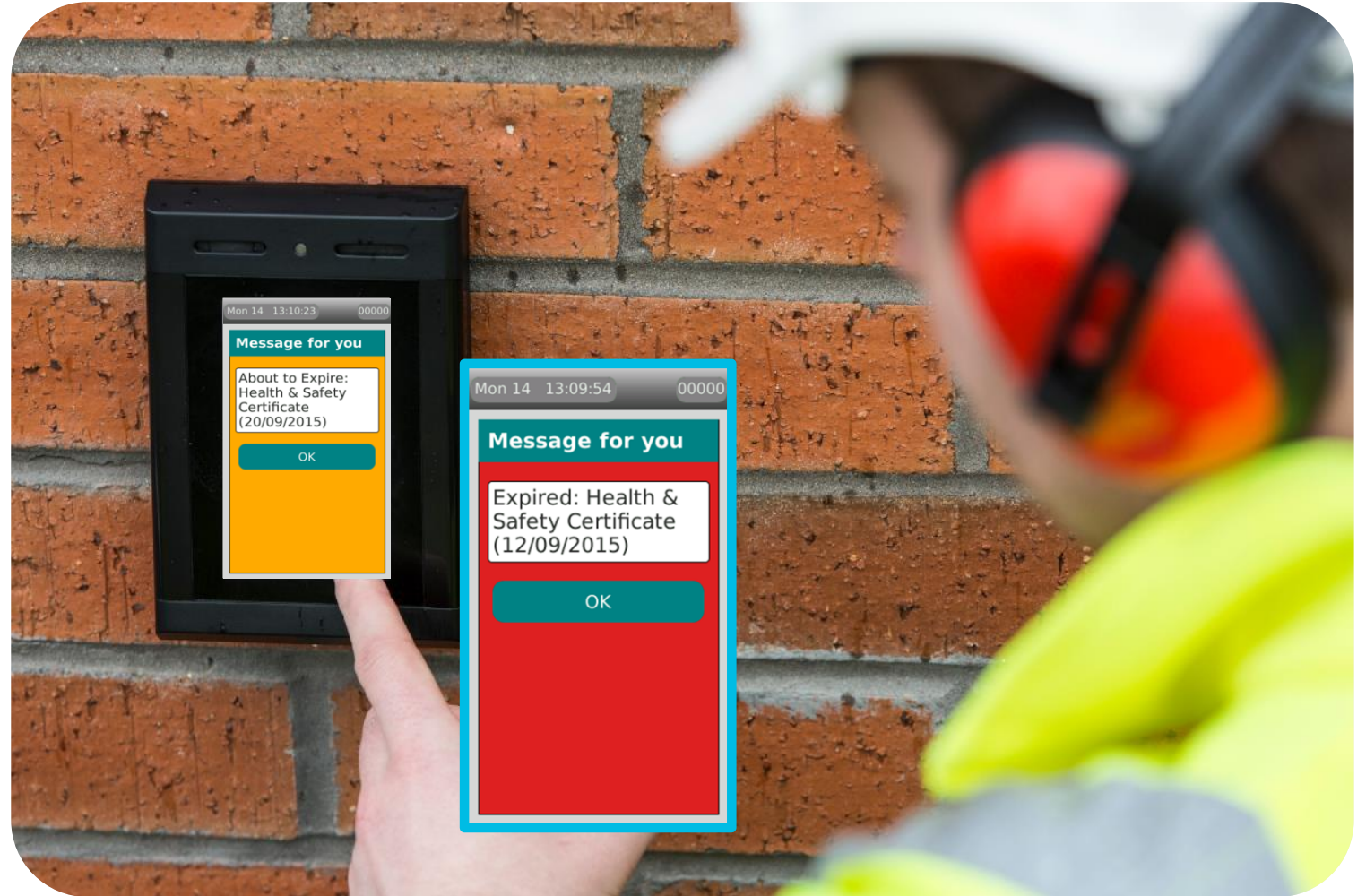




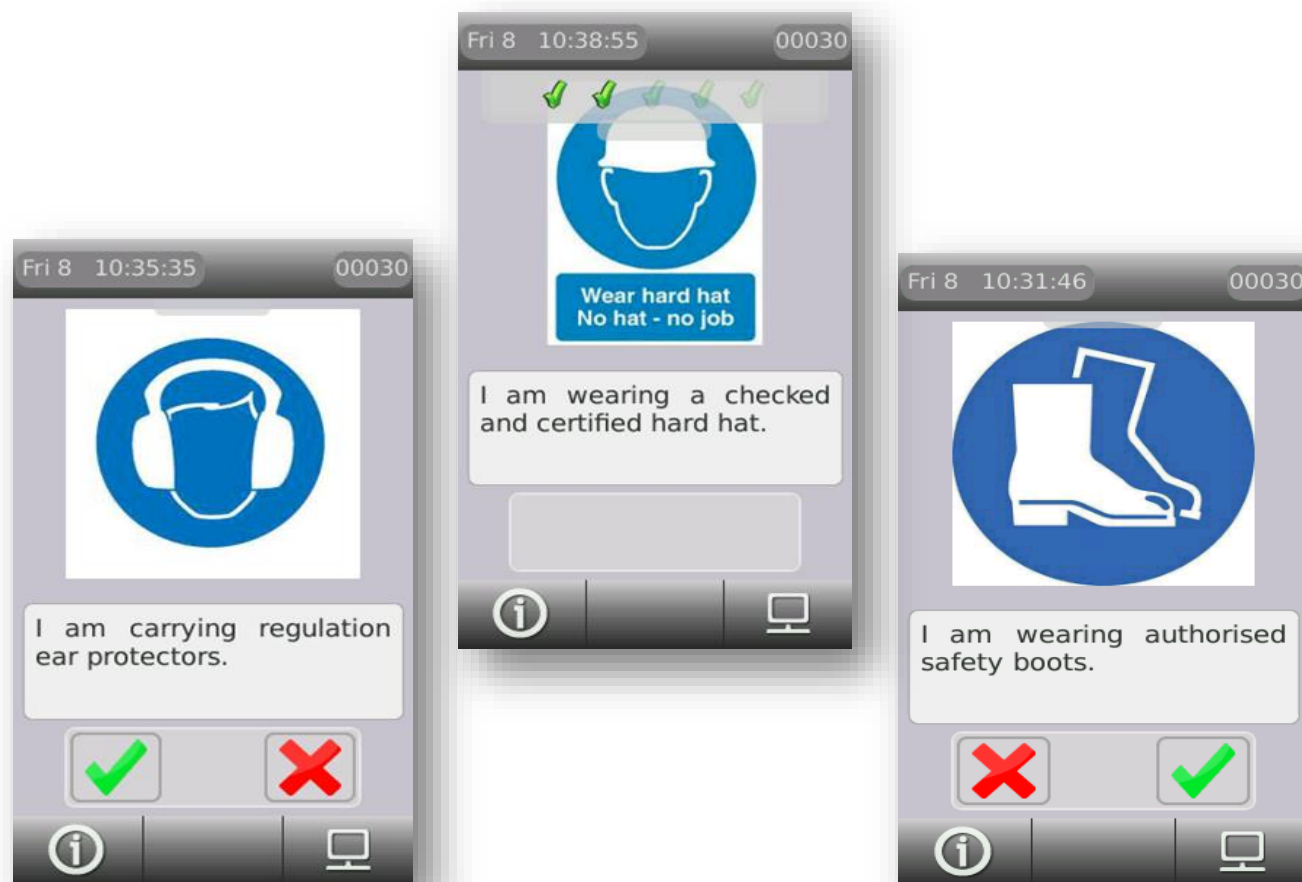
## ■ Emerald Multi-date-check

- Check additional health and safety certificates to:
- Add reminders to cardholders about upcoming expiry dates
- Deny access in and out of areas if up to date certificates have not been renewed

*... Improving safety through automation*



# Personal Protective Equipment



*Reduce liability by ensuring staff, contractors, visitors are in compliance with specific site requirements....*

## Emerald Checklist Mode

- Cardholders swipe on the emerald and are presented with a series of images and questions which they must affirm to
- Can help mitigate risk and liability enforcing and reminding staff and contractors that the correct personnel protection equipment must be used in certain zones
- Improves health and safety compliance
- Can be audited via the AC2000 emerald reporting tool





- Emerald Safety Communications
  - Guaranteed Audience
  - Targeted Messages
  - Load up to 7 announcements
  - Intuitive Web Upload
  - Presence detected
  - Rotating display

*... Every door, your own Health and Safety Bulletin*





## ■ Emerald Intercom

- Built in Microphone and Speaker
- Two-way point to point communications
- SIP protocol and on-server recording
- Single User interface for both Access Control and Intercom

*...provides quick access point to alert security in the event of an accident!*







- Emerald Equipment Enable
  - Manage access to dangerous equipment:
  - Use emerald to power on and off large equipment
  - Have full traceability of everybody who uses equipment
  - Restrict access to equipment based on training levels

*..... meet health and safety regulations by ensuring only trained staff can operate machinery*





## ■ Emerald induction app

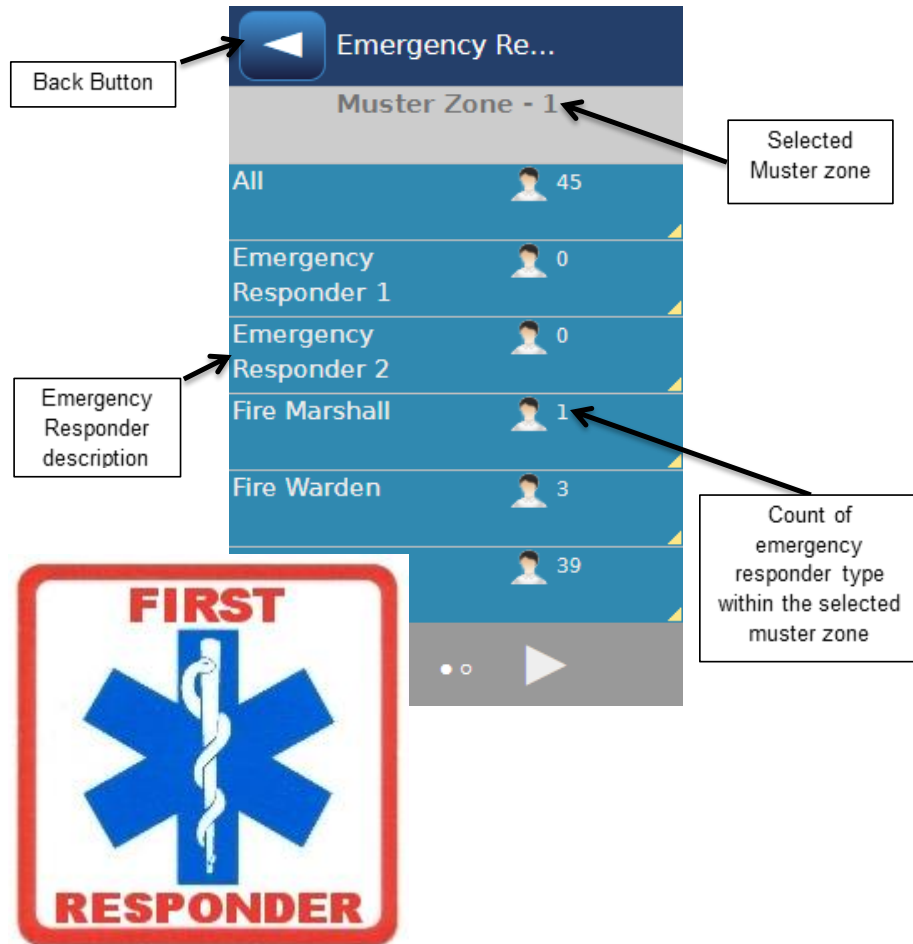
- Card holders swipe on emerald to indicate they have attended the Induction training.
- Emerald automatically updates their Induction Training Date on the Personnel app.

*... track all personnel and ensure Safety training is completed before access to site*





# First Responders



## New First Responders remote application

- Instant access to assigned first responders via the emerald remote application
- Quickly identify the assigned first responders per zone, for example, First Aiders, Fire Marshalls etc.
- emerald can display an image of the first responder and associated contact number

*Quickly identify first responders within a specific zone without having to access the AC2000 software....*



***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



Thank you

Questions?



**Johnson  
Controls**







**tyco**



**ENGAGE**  
TYCO CONFERENCE 2019



# Location Services - part of the digital solutions portfolio at Johnson Controls



James  Murphy



Johnson  
Controls 





# Ireland HQ – Integrations and Smart Building Innovations

## Metsys

HVAC + BMS

Lighting Integration with Dali .  
Future BIM integrations , lift  
integrations etc

## Victor

Access – Fire and Security

3D visualisation of building -  
Intuitive and interactive

## Access control integrations

Schindler lift integration

Bicycle counting Integrations

Meeting room Integration

Data Intelligence modelling of AC2000 data

## Security system Integrations

License Plate recognition

Full suite of video analytics

## Smart building

Mixed Mode transport,

External Air Quality Index measurement,

Internal Environment monitoring( VOC, Wifi, Temp, Humidity, Co2)

Occupancy monitoring as part of Dynamic Ventilation Control

Smart Restaurant Dashboard ( Cashless Operations )

Smart City Collaborations (Marine Assets, Data Privacy, LORA air interface testing, Sigfox tests, AQI)

Access Control and Environmental Dashboard

BIM Unity Service

Innovation Garage projects in Wearables, Asset & People tracking and Hand Hygiene, radar/CCTV inetgration

Technical Communications projects in AR/VR service engineering services using NFC tags



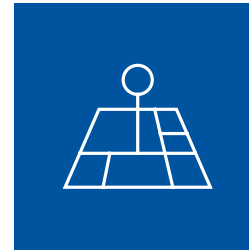
## **Converged Cyber Physical Security**

Cloud  
Analytics  
Machine Learning  
UX/UI Technology  
Design Thinking



## **Digital Vault**

Secure IoT  
Dev Ops  
Data Agnostic  
Cloud Agnostic  
Event Driven



## **Location Services**



## **Assurance Services**

Micro services  
Message Driven  
Compliance  
Risk  
Virtual Sensors  
Intent Driven



# Converged Cyber Physical Security



**ENGAGE**  
TYCO CONFERENCE 2019



A data-driven security platform that transforms  
your global security posture



## Intelligent Alarm And Event Management

Our custom business rules engine  
leverages machine learning and AI,  
dramatically reducing the volume of nuisance  
alarm data



## Situational Awareness

Understand the complete event picture to  
ensure the appropriate response in a timely  
manner, and increase operational efficiency



## Risk And Threat Management

The JCCS risk dashboard links internal  
assets and events with the external threat  
landscape to determine a real-time  
risk score



## Asset Management

Aggregate connected and non-connected  
devices to intelligently manage service and  
maintenance needs across your enterprise





## Complex Event Processing



Refined business rules  
+ intelligent alarms

- ❑ CCS user interface
- ❑ Custom rules builder
- ❑ Noise reduction

## Situational Awareness



Collaborative incident  
management capability

- ❑ Multi-user, single UI
- ❑ Asset risk scoring
- ❑ Standard procedures

## Machine Learning (ML)



Next-generation ML –  
based monitoring  
client

- ❑ ML(Ensemble Approach)
- ❑ Automation vision
- ❑ Ongoing roadmap

# Intelligent Alarm Monitoring



Johnson Controls

Home

ALL Monitoring Zones

Sorted by: Asset's Risk Score

Pending Alarms

Order or alarms listed is based on asset risk score

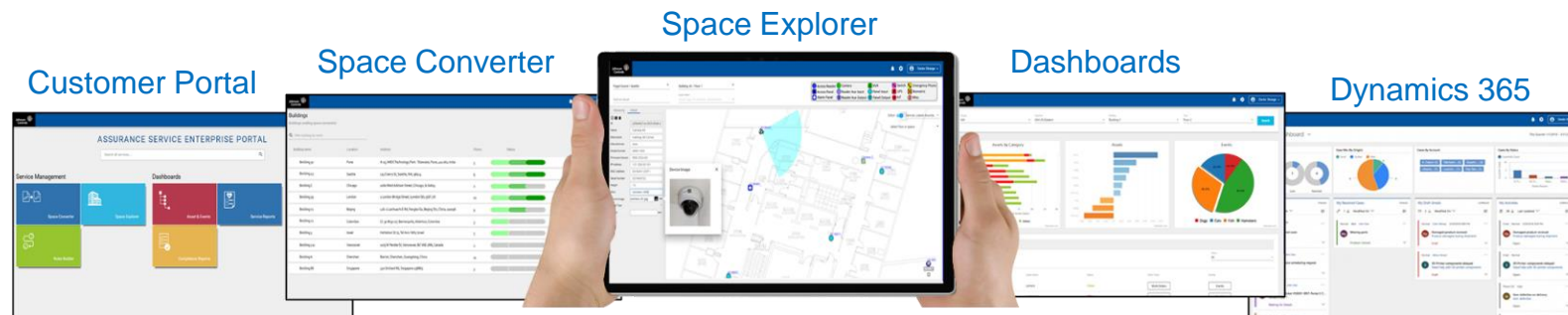
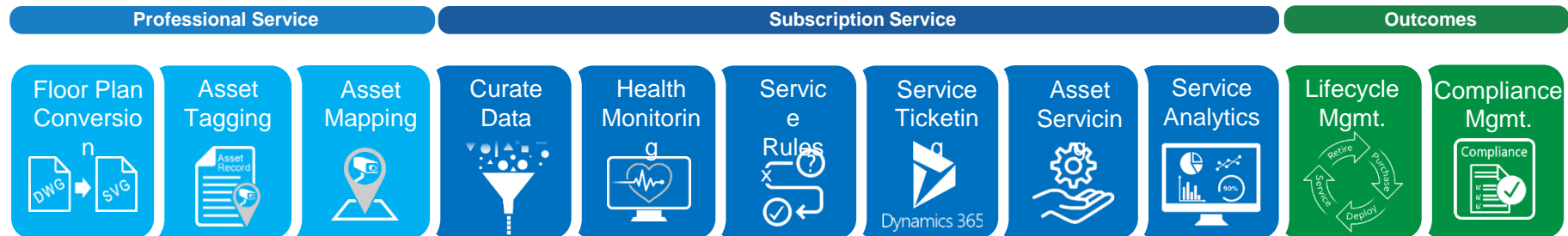
Conditional, smart alarms – dynamic rules defined with the client

Tier 1, traditional alarms – predefined by the client as important to monitor

<b>Suspicious Badge Use - Inactive Badge</b>	28/06/2017 17:04:38 (PDT)
ID: 171026-6 JCI CCS	
90 REDW-B, Office - Redmond, WA, US	17:04:38 (PDT) E92-321-45
<b>Access - Access Denied</b>	28/06/2017 17:04:37 (PDT)
ID: 171026-5 Lenel	
75 REDW-B, Office - Redmond, WA, US	17:04:37 (PDT) F3-12
<b>Suspicious Badge Use - Temporary Badge</b>	28/06/2017 17:04:35 (PDT)
ID: 171026-3 JCI CCS	
90 REDW-B, Office - Redmond, WA, US	17:04:36 (PDT) PX23
<b>Intrusion - Intrusion Alarm</b>	28/06/2017 17:04:36 (PDT)
ID: 171026-4 Lenel	
15 Building Name, Building Type - City, State, Country	17:04:35 (PDT) Panel a2-w1
<b>Access - Access Denied</b>	28/06/2017 17:04:33 (PDT)
ID: 171026-1 Lenel	
15 REDW-B, Office - Redmond, WA, US	17:04:33 (PDT) A32-e2
<b>Access - Door Held Open</b>	28/06/2017 17:04:34 (PDT)
ID: 171026-2 Lenel	
0 REDW-B, Office - Redmond, WA, US	17:04:34 (PDT) D24-33e9
<b>Fault - Door Service Advisory</b>	28/06/2017 17:04:33 (PDT)
ID: 171026-9 JCI CCS	
0 REDW-B, Office - Redmond, WA, US	17:04:33 (PDT) D24-34e9



Assurance Services is a security asset health monitoring and service operations platform that provides the right data to the right person at the right time to reduce risk to people and property and ensure ongoing regulatory compliance and cyber security protection.





***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



## Location Services



**Johnson  
Controls**



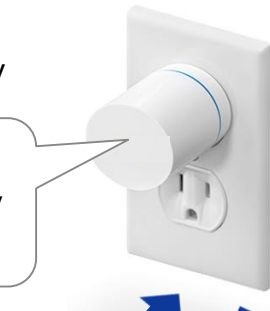
# The Technology - Sensor agnostic , digital platform.

**ENGAGE**  
TYCO CONFERENCE 2019



BLE Gateway

Deploy 1  
approx. every  
250sqr feet



BLE Location  
Badge



Light,  
temperature,  
movement,  
asset tracking



BLE Gateway  
Client or Cellular Network



PoE Deploy 1  
approx. every  
350sqr feet



Client or  
Cellular  
Network



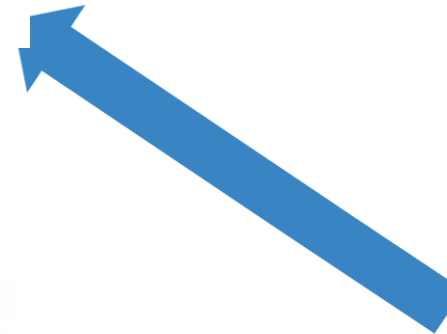
UWB Location  
Badge



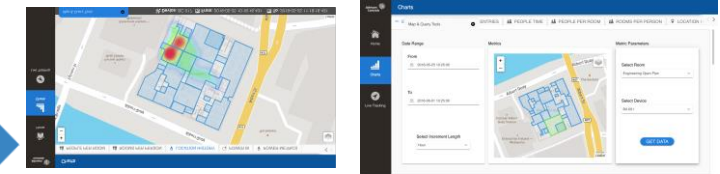
UWB Gateway



Deploy 1  
approx. every  
750/1000 sqr  
feet



Data Fusion &  
Advanced Analytics



Smartplug /  
Asset  
Utilization



## Focus Areas

### Use cases

### Problem statement

#### Life Science R&D

Lab spaces are increasing in size as are the number of teams using the space, making it difficult to determine correct layout and equipment numbers as well as determining risk of cross contamination and micro climate impacts.

#### Enhanced Insider Security

Once through an access door, it is difficult to determine if there any bad actors behaviours being exhibited. This is significant in areas like co lo data centres and banking HSM zones.

#### Asset tracking

Physical location and or status of critical assets, especially those that are mobile is often determined reactively. Finding the assets is inefficient and the security postures for same are usually reactive vs pro active.

#### Firewalled teams

Proof of firewall operation is often assumed by physical team placement, procedures & manual monitoring which is inefficient with moderate effectiveness

#### Space utilisation

As a standalone activity, ROI is challenging in capturing the necessary data in order to create the right level of insights, where the value of those specific insights are time bound.

#### Workflow optimisation

Rich and continuous data sets are required to create the insights and actions to improve workflows.

#### Smart Parking

Finding spaces, assigning and validating assigned space use, space sharing and dynamic space reallocation are capabilities that can greatly increase employee and visitor experience





***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



# Enhanced Insider Security

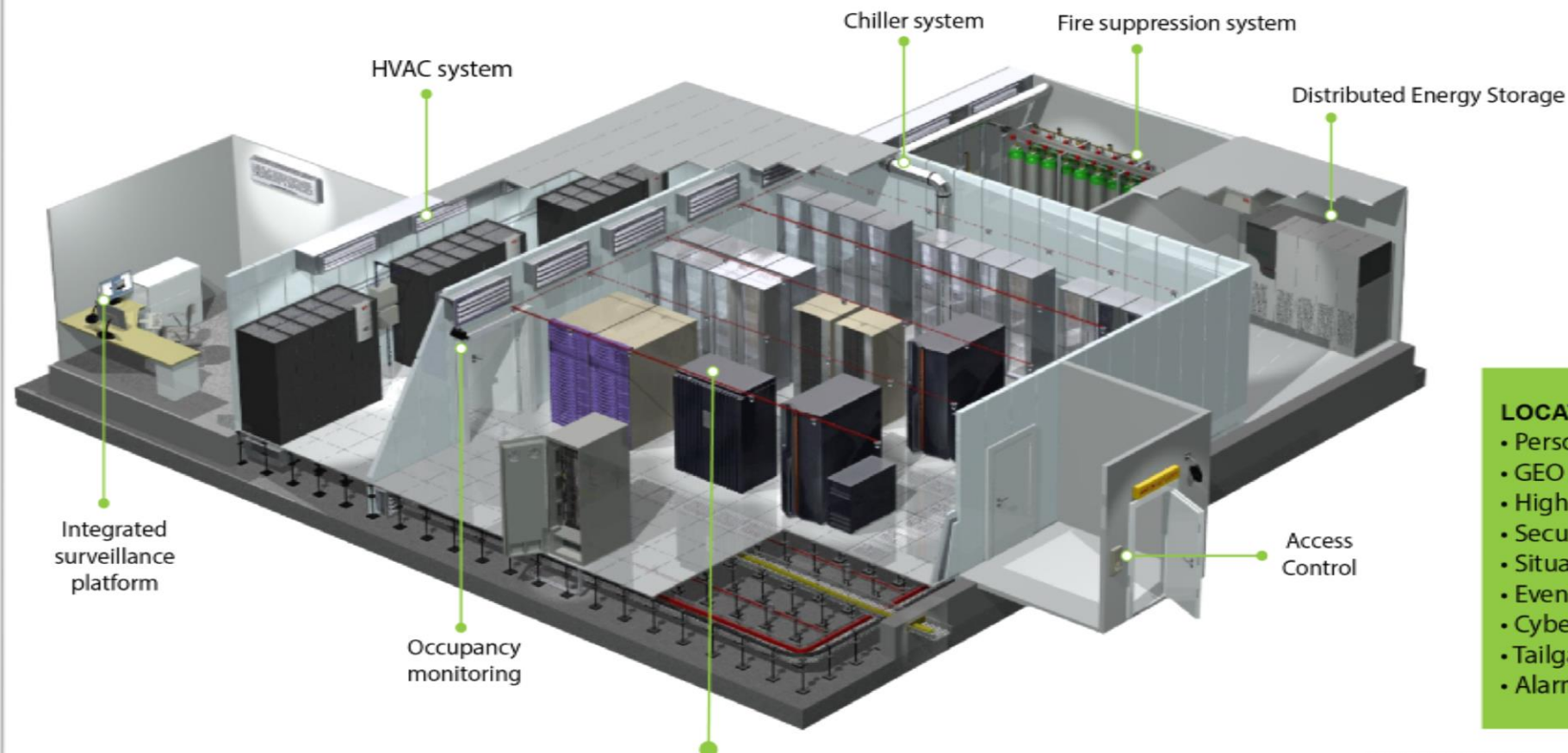


**Johnson  
Controls**  
  
Johnson  
Controls 





## DATA CENTRE **USECASE:**



### LOCATION-BASED SERVICES:

- Persons of interest
- GEO fencing
- High value asset tracking
- Secure access to HSMs
- Situational awareness
- Event correlation
- Cyber/Physical IT integration
- Tailgate solutions
- Alarm noise reduction

- High Security Module (HSM) physical access detection
- Occupancy tracking
- Asset movement
- GEO fencing
- Dwell times

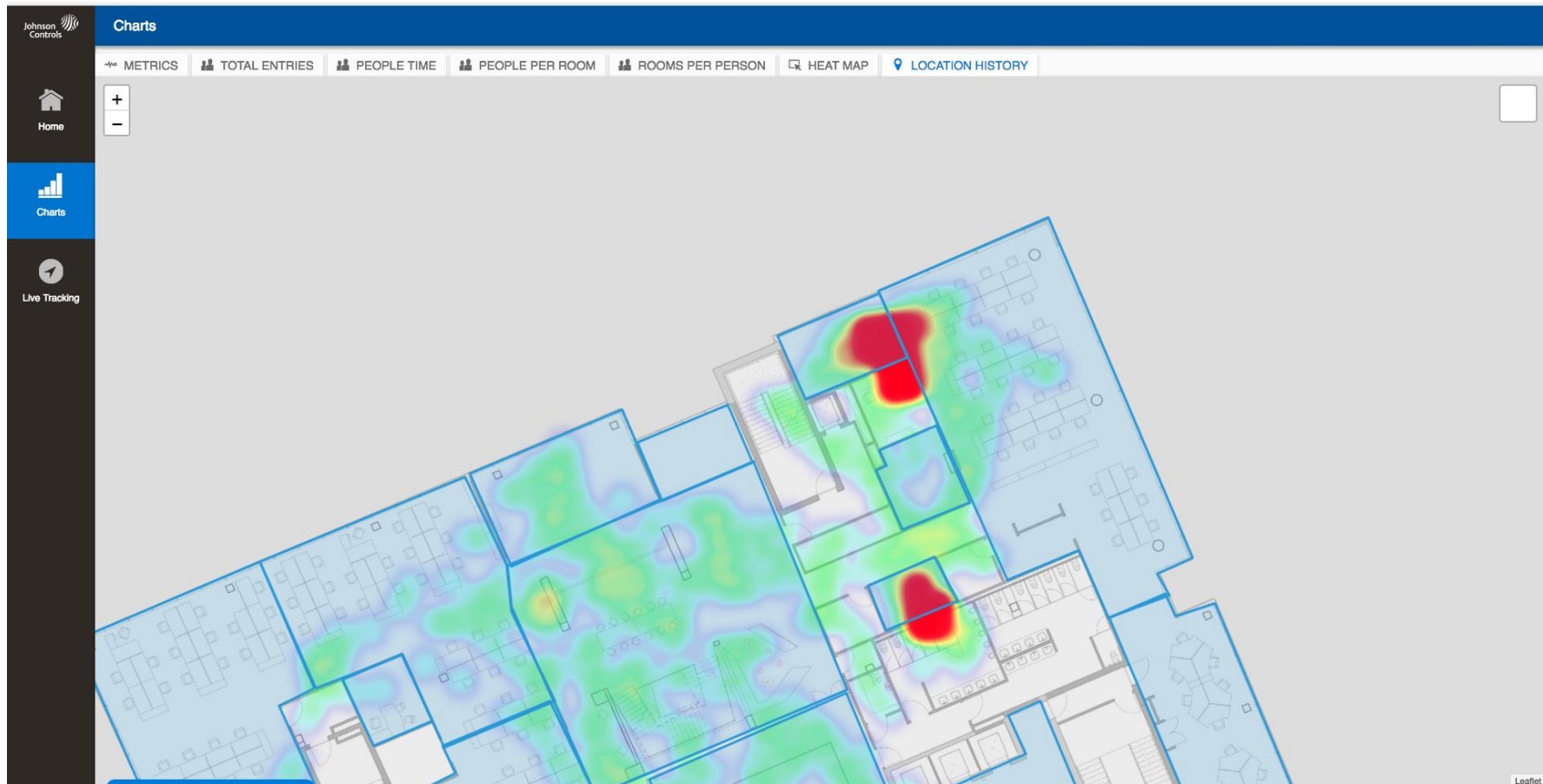






When a visitor badge and accompanying employee badge move apart by a set distance or if they are separated by a room, their locations are highlighted and a relevant alert can be generated. A complete time and location trail can be reviewed.

2



# Room and or geo fence area occupancy in minutes for user specified time period





**tyco**



**ENGAGE**  
TYCO CONFERENCE 2019



Life sciences\Medical research lab  
utilisation and efficiency solution.



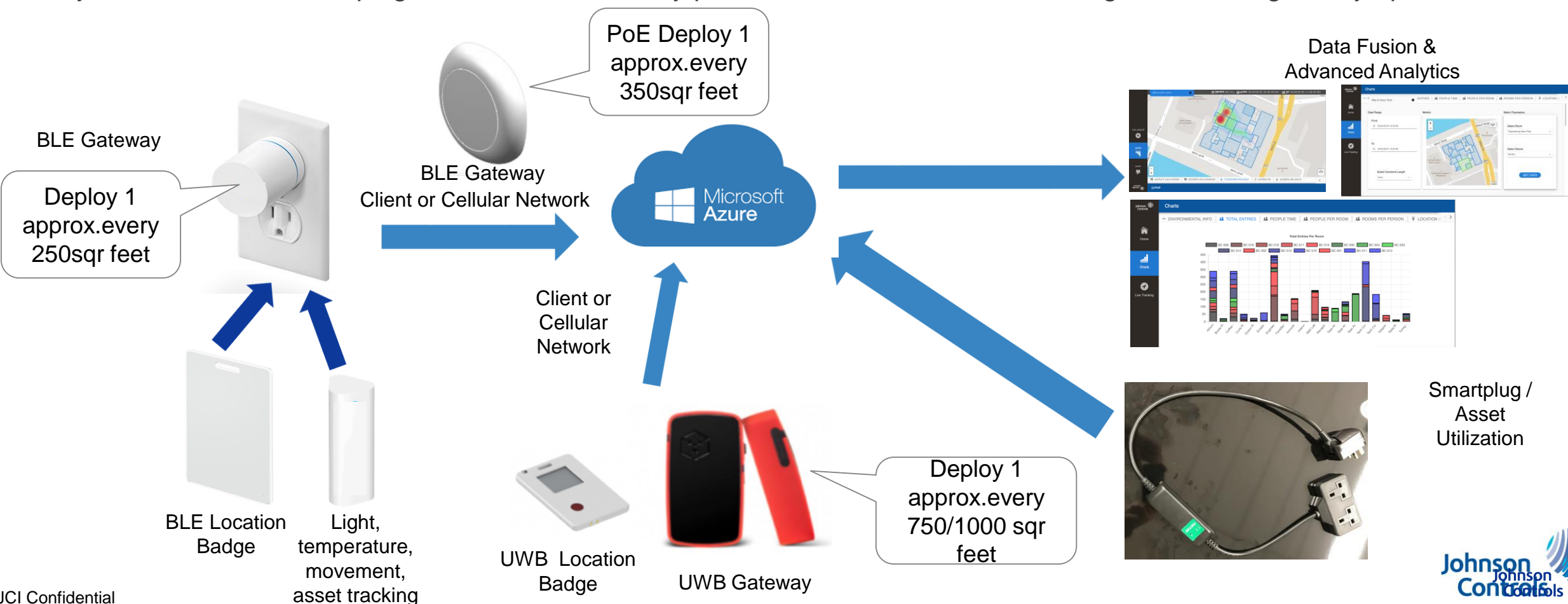
**Johnson  
Controls**  
Johnson  
Controls



# Location Services applied to Life Sciences\Medical research and development



- Focused on research lab optimization, determine best layout and right size the equipment within that layout, while increasing experimental throughput.
- Understand potential for cross contamination and micro climate risks to experiments.
- Gain insights into cross team collaboration and interaction.
- System is a collection of plug, stick and wear battery powered sensors with a wall\ceiling mount PoE gateway option.





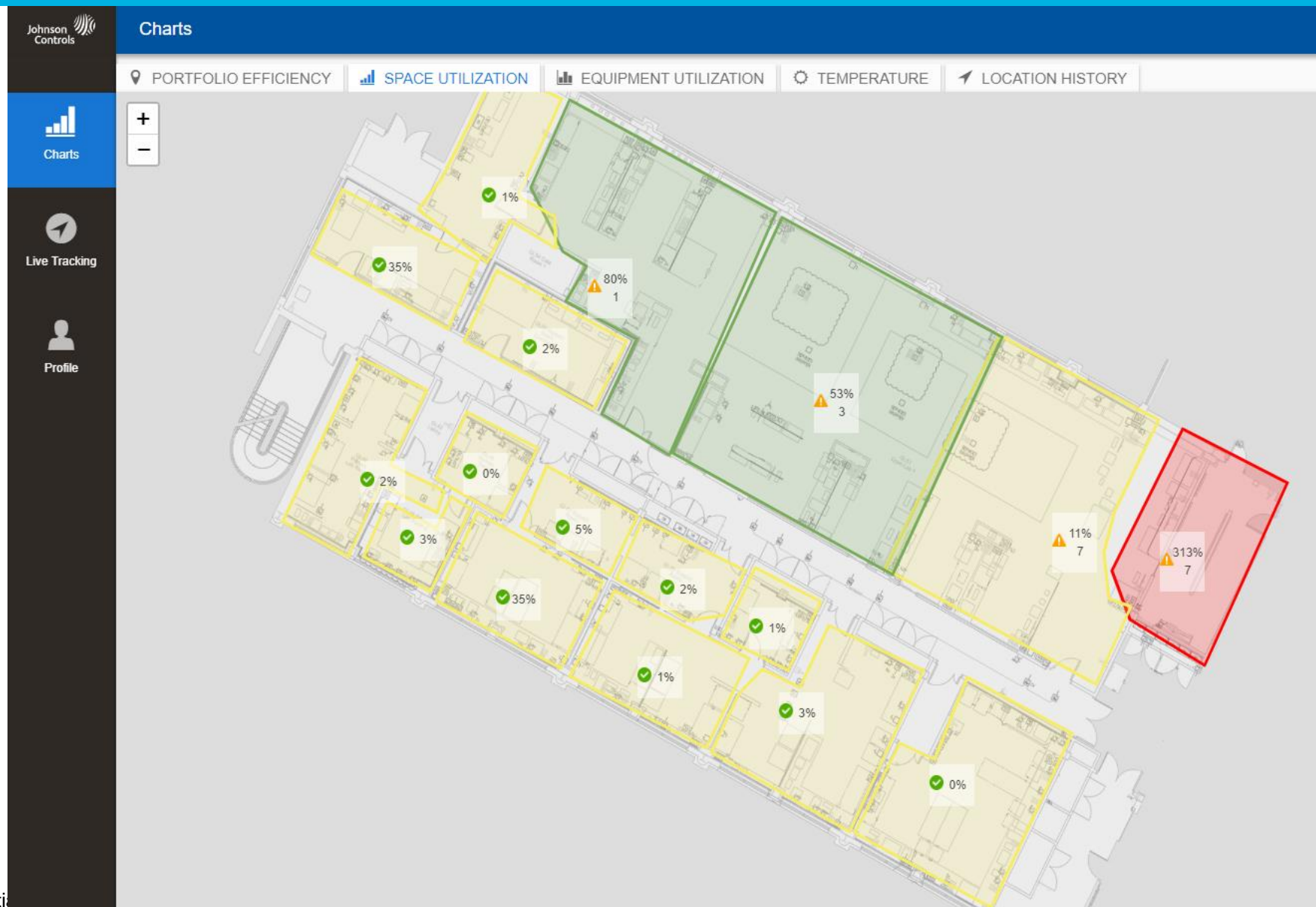
# Space Utilisation



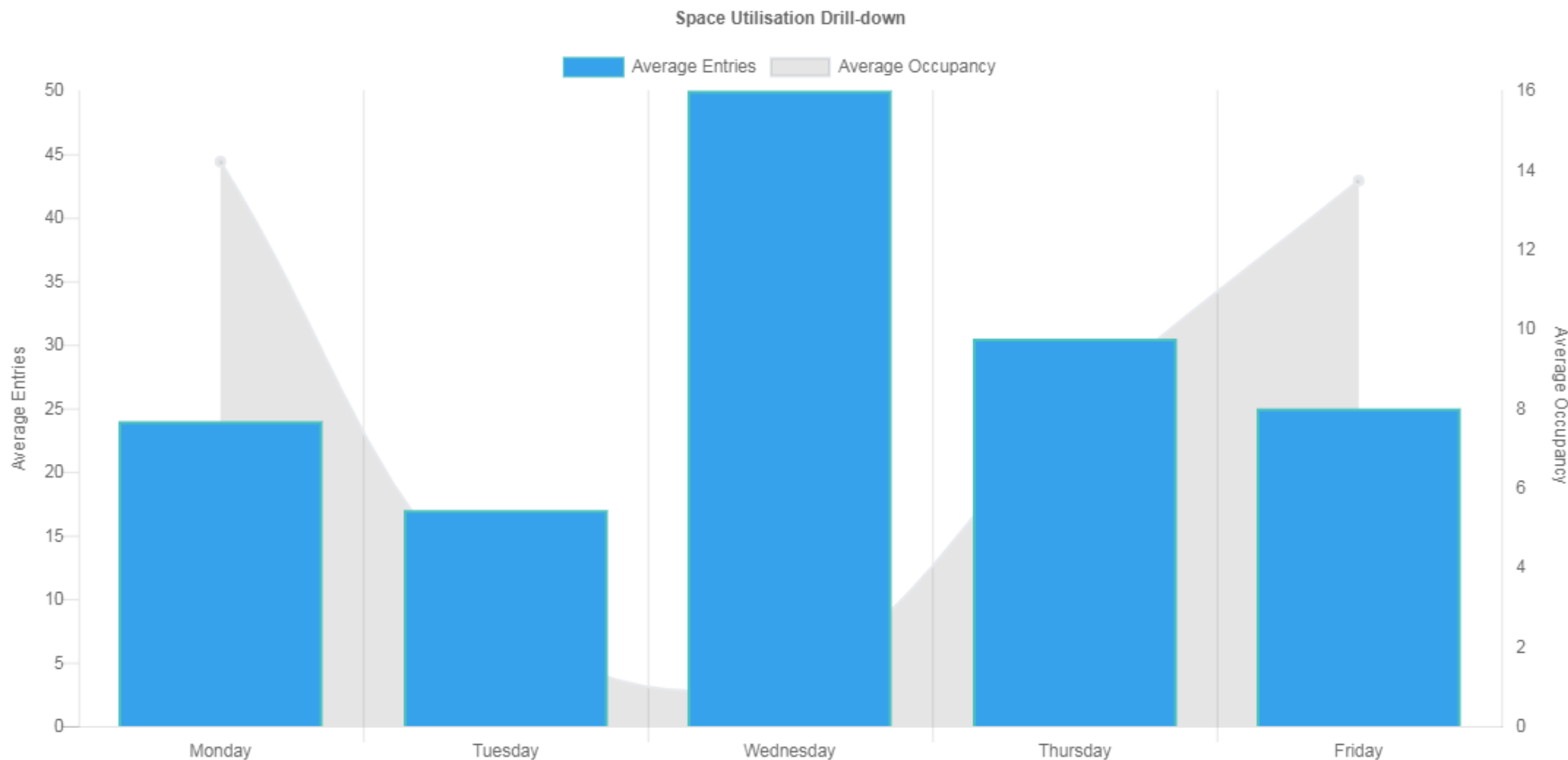
**ENGAGE**  
TYCO CONFERENCE 2019



2



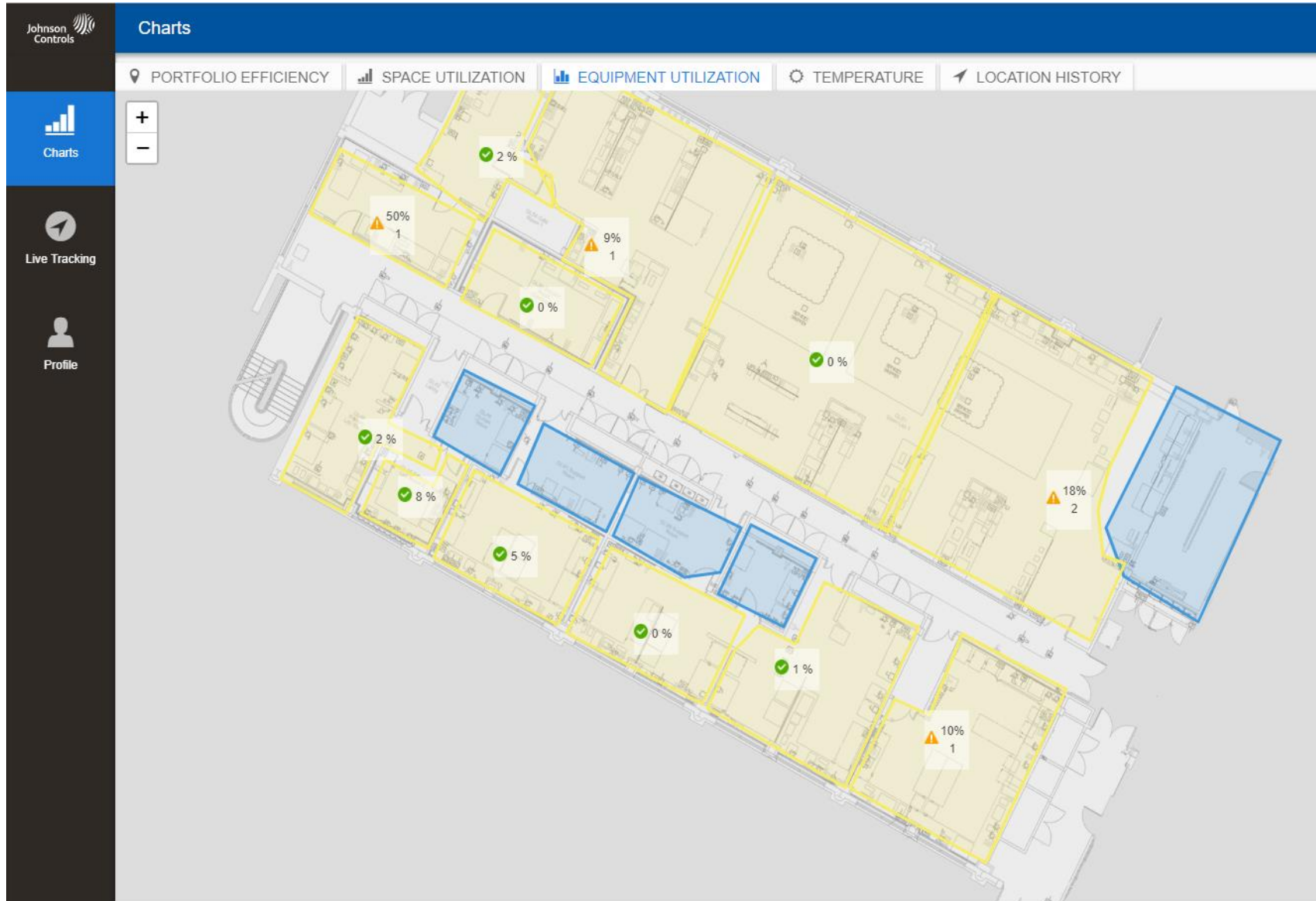
# Space Utilisation, Drill Down



# Equipment Utilisation



**ENGAGE**  
TYCO CONFERENCE 2019

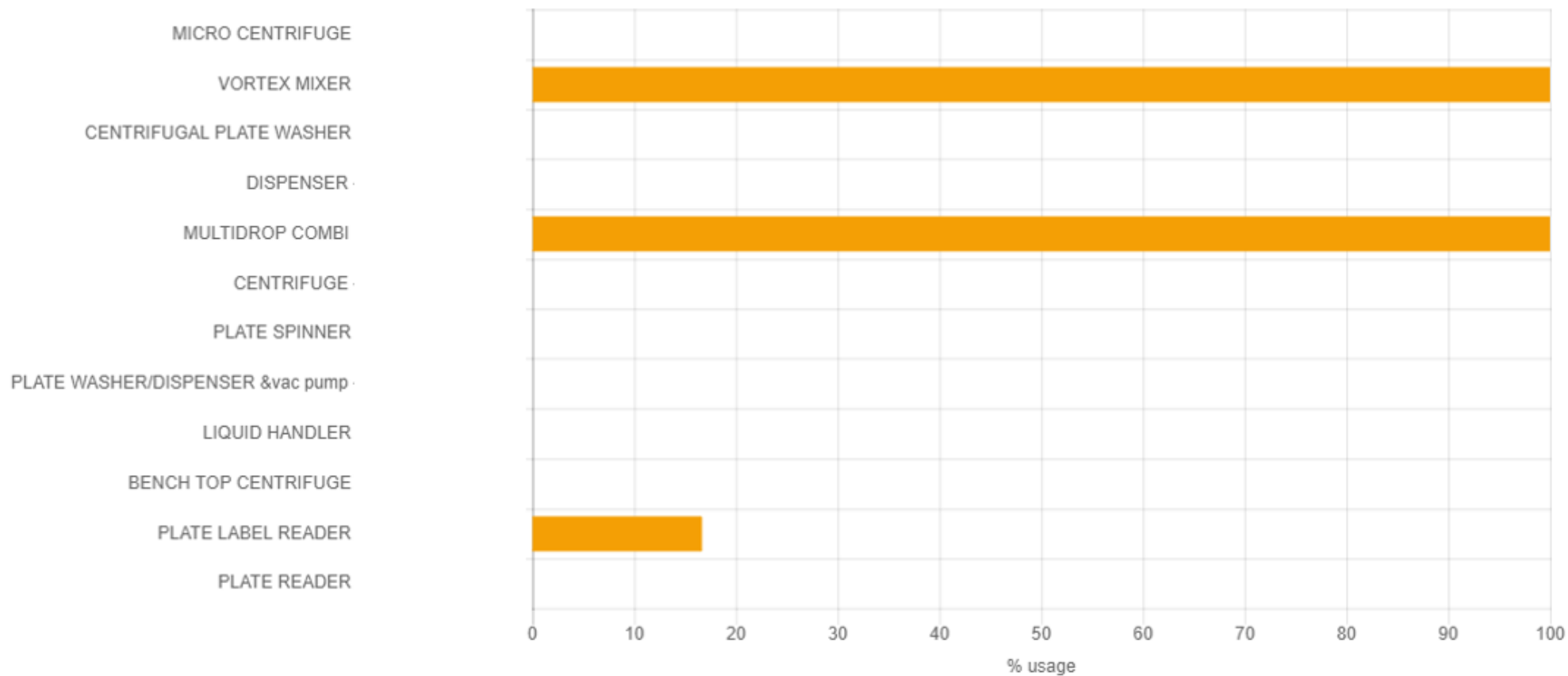


2

# Equipment Utilisation, Drill Down

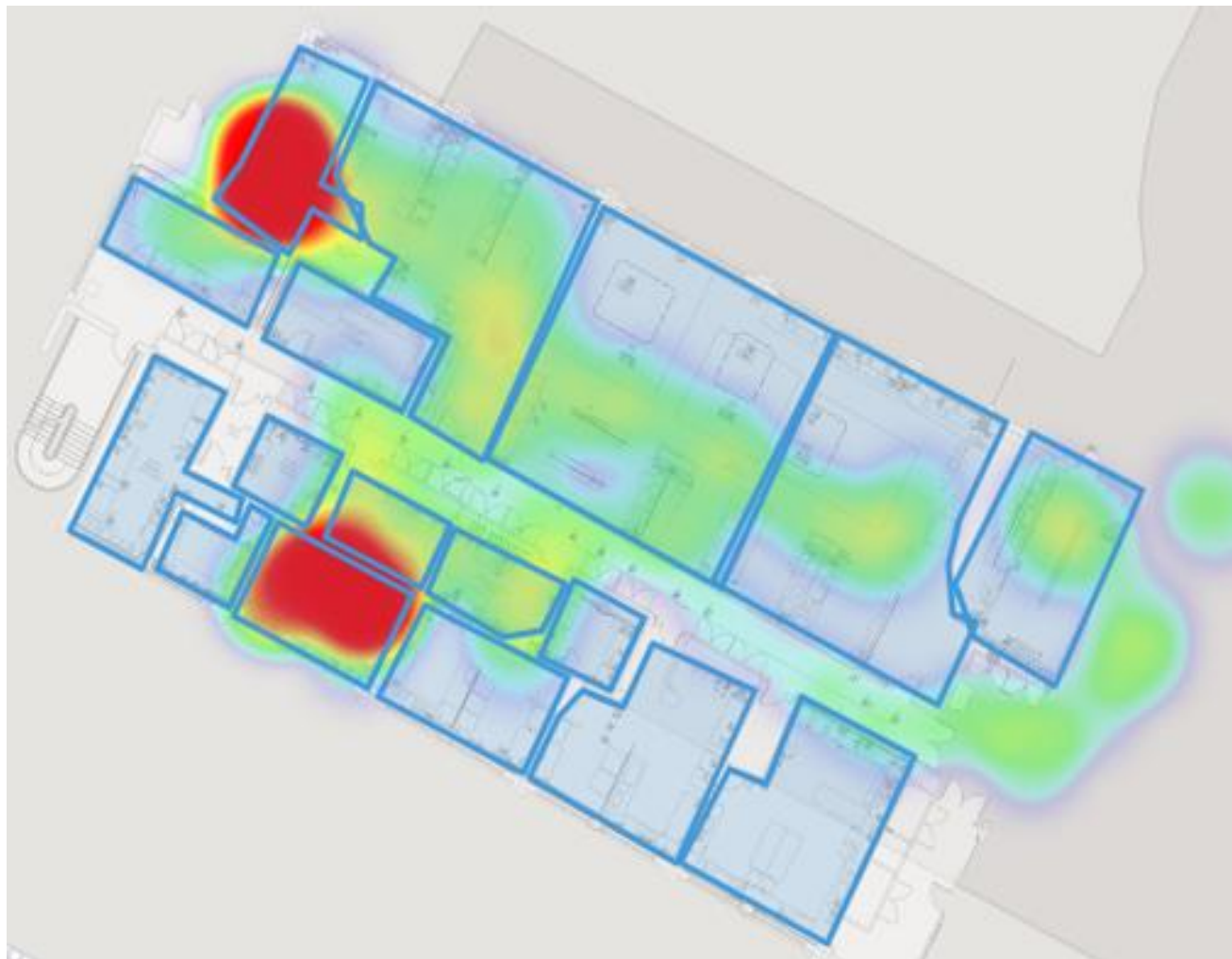


Equipment Utilisation Drill-down



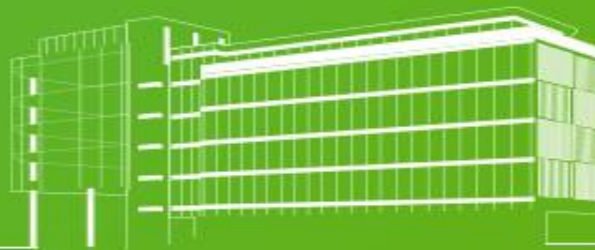


# Location history, heat map format



Smart Buildings  
Smart Future

Thanks





***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



Thank you

Questions?



**Johnson  
Controls**





***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



# CEM Systems Partner Awards

Philip Verner



**Johnson  
Controls**







Southern Regional  
College Armagh



Further and higher  
education college in the  
southern area of  
Northern Ireland.

Edgehill  
Theological College



University of  
West Scotland



Holmes Chapel  
School



The American  
School London







National Forensic Mental  
Health Facility Portrane



State-of-the-art facility  
providing care for 170  
patients. Replacing the  
Central mental Hospital,  
Dundrum.

Stirling Care Village



Royal Commission  
Hospital Dental Clinic



Circle Hospital,  
Birmingham







Tottenham Hotspur  
Stadium



Replacing White Hart Lane. It has a capacity of 62,062, making it one of the largest stadiums in the Premier League and the largest club stadium in London.

Aberdeen Exhibition &  
Conference Centre



International Convention  
Centre Wales



Manchester  
Arena







### Daily Mail Group

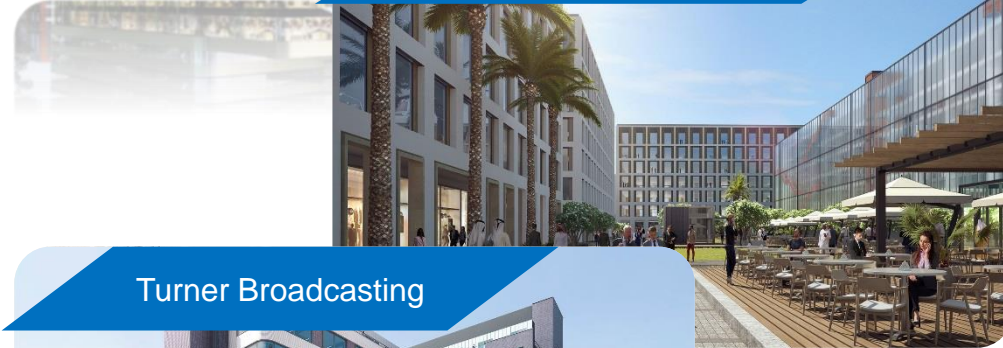


The Daily Mail Group is a British media company which owns The Daily Mail newspaper and several other titles.

### Fabryczna Office Park



### Dubai Hills Business Park



### Turner Broadcasting







Lancashire Police



Lancashire Police covers a population of 1.5m and an area of 1,189 square miles.

Irish Prison Service Training College



Ministry of Defence Armours







### Bahrain International Airport



### Cambridge Airport



### Al Maktoum New Airport Design Office





- Opportunity to recognise our business partners throughout EMEA that have;
  - Meet requirements of Approved Reseller program
  - Demonstrated a strong commitment to CEM Systems
  - Achieved continued level of business



**tyco** | CEM Systems

# Business Partner of the Year UK & Ireland (South)



**ENGAGE**  
TYCO CONFERENCE 2019



**LMG**

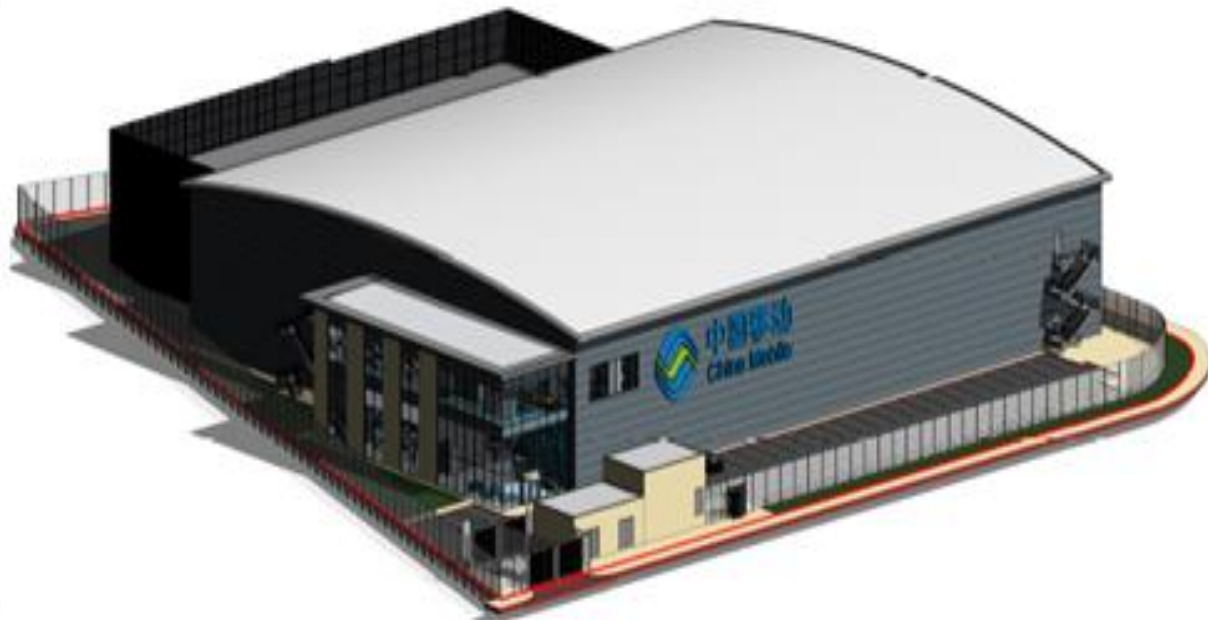
**tyco** | CEM Systems



# Business Partner of the Year UK & Ireland (South)



**ENGAGE**  
TYCO CONFERENCE 2019



# Business Partner of the Year UK & Ireland (North)



**ENGAGE**  
TYCO CONFERENCE 2019



**tyco** | CEM Systems





# Business Partner of the Year UK & Ireland (North)



**ENGAGE**  
TYCO CONFERENCE 2019





**tyco** | CEM Systems



# Business Partner of the Year Europe



**ENGAGE**  
TYCO CONFERENCE 2019



## LANSTER



Controls



**tyco** | CEM Systems





# Business Partner of the Year Africa



**ENGAGE**  
TYCO CONFERENCE 2019





**tyco** | CEM Systems





# Business Partner of the Year Middle East



**ENGAGE**  
TYCO CONFERENCE 2019





# CAPITA

**tyco** | CEM Systems





# CAPITA





# CEM Systems Approved Resellers Enterprise Awards



**ENGAGE**  
TYCO CONFERENCE 2019



CEM SYSTEMS  
**APPROVED**  
ENTERPRISE





CEM Systems Approved Resellers Enterprise Status is awarded to...

## Middle East

Majees Technical Services LLC  
Itelligent Technologies LLC



## UK/Ire

Securitas Security Services, UK  
FES Support Services Limited

Congratulations to all the winners



**tyco** | CEM Systems





***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



# Exacq Video Cloud Solution



Paul McCann



**Johnson  
Controls**



# Move to the Cloud with Confidence



**ENGAGE**  
TYCO CONFERENCE 2019



- NO HARDWARE.
- NO SOFTWARE.
- NO FUSS.



# Exacq Cloud VMS Solution Architecture Options

**ENGAGE**  
TYCO CONFERENCE 2019





# When is Exacq Cloud VMS the Answer?



## exacqVision VMS

- On Premises VMS
- NVR Required
- Local Recording
- Hybrid Cloud Recording
- Feature Rich Local
- Locally Managed
- Local Integrations



## Exacq Cloud VMS

- Cloud Based VMS
- No NVR Required
- Cloud Recording
- Hybrid Local Recording
- Feature Rich Cloud
- Cloud Managed
- Cloud Integrations

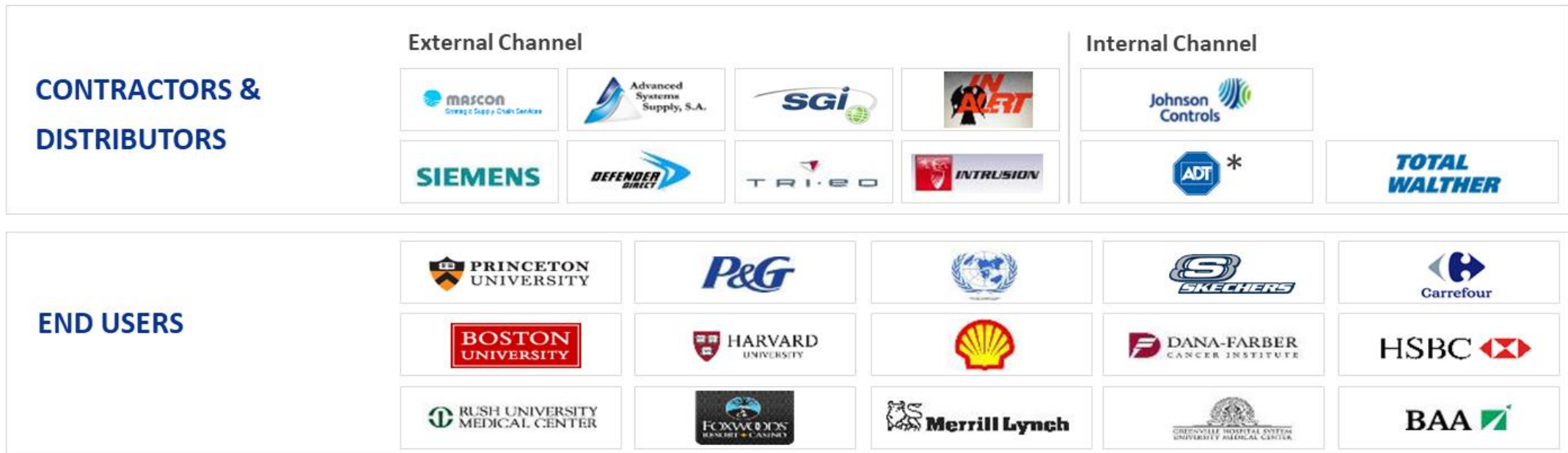
# Exacq Cloud VMS Customer Use Cases

**ENGAGE**  
TYCO CONFERENCE 2019





## KEY VERTICALS

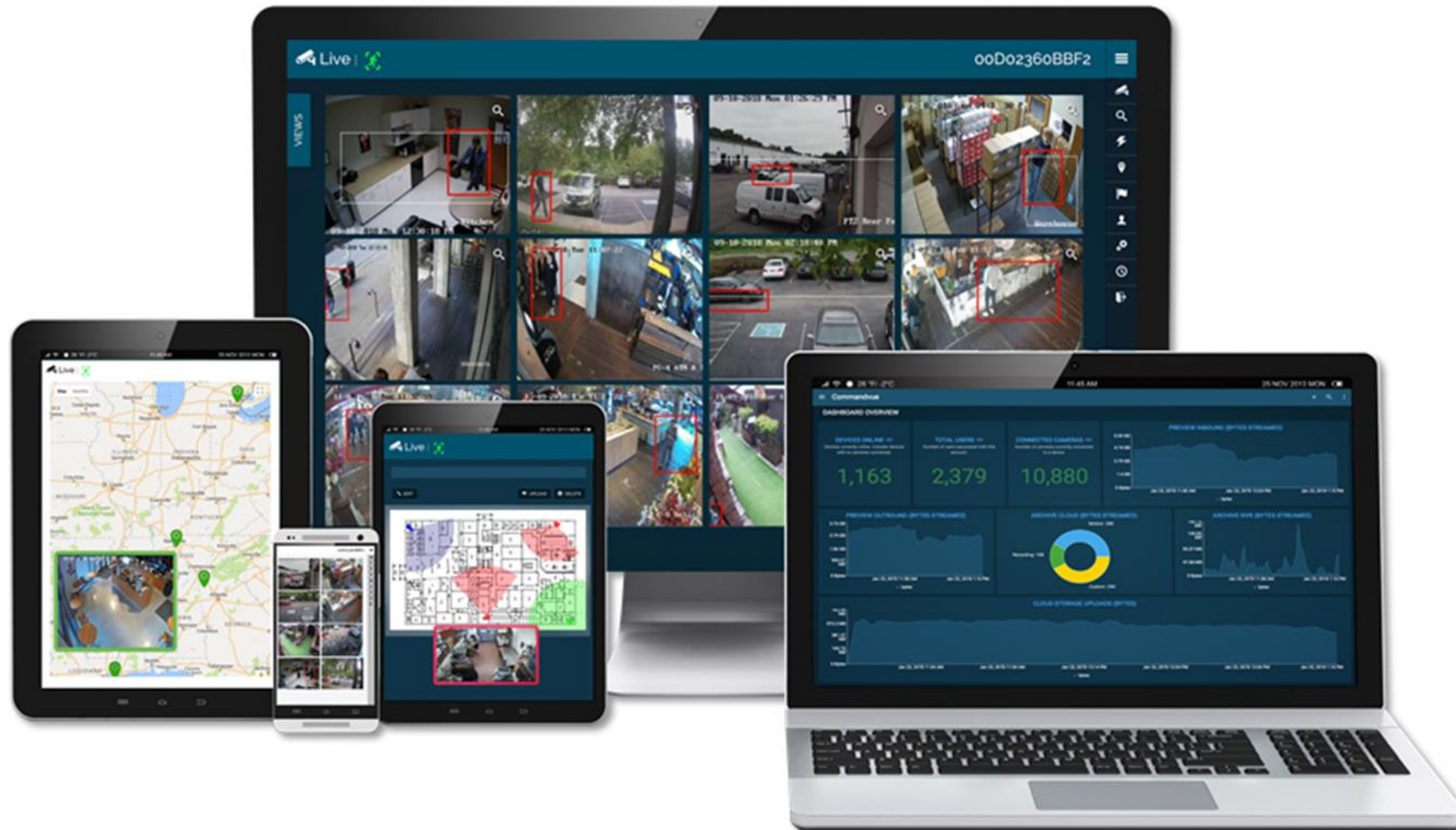


\* Outside of North America



# User Experience – Native Web and Mobile Interfaces

**ENGAGE**  
TYCO CONFERENCE 2019



# User Experience – Hyper View Fast Search



**Hypervue** 00D02360BBF2

Wed Sep 12, 2018

The interface displays 12 camera feeds arranged in a 3x4 grid. Each feed shows a different location with red bounding boxes highlighting detected objects. The locations include outdoor parking areas, indoor retail spaces, and a warehouse. The interface includes a top navigation bar with the Hypervue logo and a unique ID, a date selector for Wednesday, September 12, 2018, and a right-hand sidebar with icons for camera selection, search, and other functions. A bottom status bar is also visible.



# User Experience – Simple and Dynamic Cloud Video Storage

**ENGAGE**  
TYCO CONFERENCE 2019



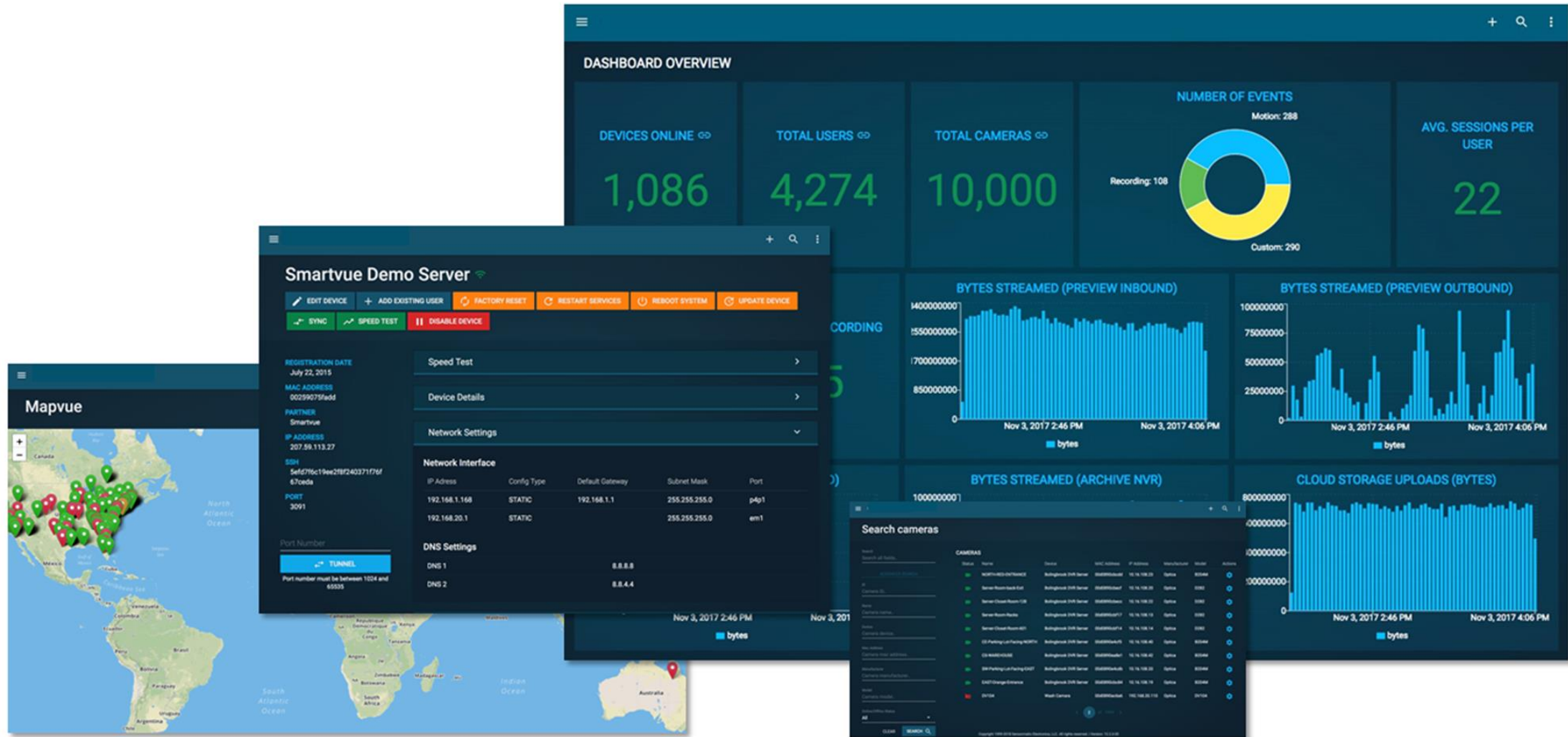


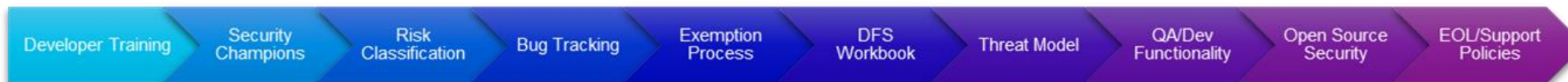


1. Improve Security & Disaster Recovery
2. Leverage Current Investments
3. Reduce Capital Expense of Hardware for smaller scale sites
4. Scale Globally on Demand
5. Upgrade Performance and reduce Monitoring costs
6. Feature Rich and Versatile

# User Experience – Exacq Cloud VMS Manager

ENGAGE  
TYCO CONFERENCE 2019





*All products in active development follow the same design methodology*

## Our Cyber Protection Program Pillars:



## Our Cyber Protection Program Values:



Disruption is Not an Option



A Higher Level Commitment



Expert Driven Designs



Lifecycle Support



Shared Responsibility



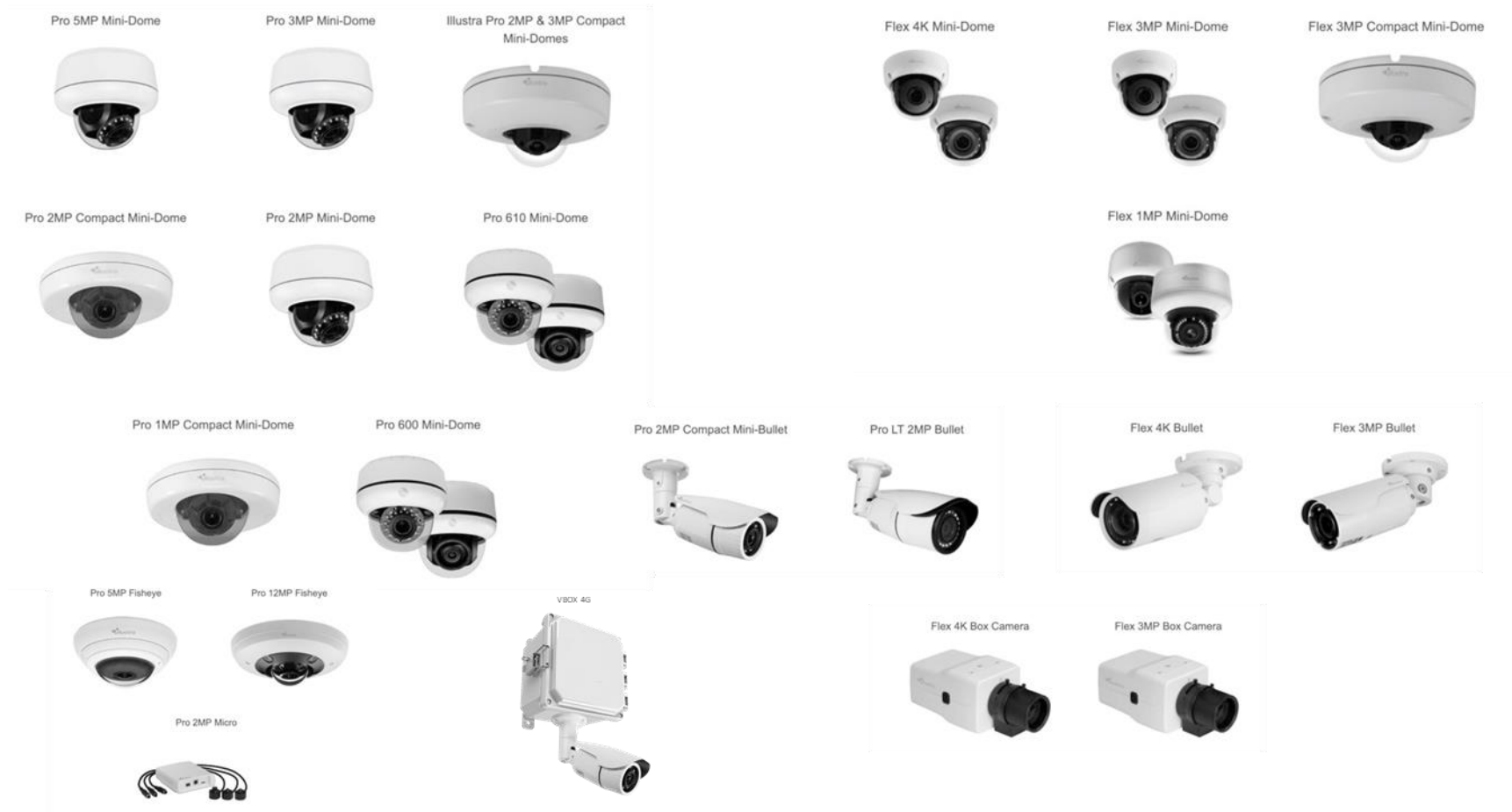
# Cloud Cameras – Direct to Cloud with No Hardware



**ENGAGE**  
TYCO CONFERENCE 2019



- No Hardware
- No Software
- No Headaches





## ■ SMVK (up to 16 cameras)

- Compact fanless cloud server with UP TO 2TB of local storage and support for up to 16 cameras. 32 Mbps.



## ■ SMVT/P/Z (up to 40 cameras)

- Mid-range cloud server with UP TO 40TB of local storage and support for up to 40 cameras. 48-64 Mbps.



## ■ SMVR (up to 100 cameras)

- Rack cloud server with UP TO 120TB of local RAID5 storage and support for up to 100 cameras. 200 Mbps.





## Why Exacq delivers the World's #1 Cloud VMS.

### #1 Most Experienced

First cloud surveillance services delivered in 1999 and innovations earned more than 800 granted patent claims since.

### #2 Advanced Security

Secured by Johnson Controls cyber and GDPR programs and 20 years of cyber and cloud security experience.

### #3 Best Value

The total cost of ownership over three years consistently ranks below the competition.

### #4 Lightning Fast

Works when you need it to, delivering video worldwide with almost no latency.

### #5 Unprecedented Scale

Manages more than 52B video clips annually and uploads 72m video clips daily at its peak.

### #6 Unmatched Support

Backed by 120,000 Johnson Controls employees at more than 2,000 locations worldwide.





## Why Organizations are Moving Surveillance to the Cloud.

### #1 Improve Security

Reducing connected device counts and off site storage all protected by major cyber investments make cloud a safe place.

### #2 Cut IT Infrastructure

Eliminate or reduce the requirement for IT to manage, maintain and upgrade surveillance systems with cloud management.

### #3 Leverage Current Investments

Use your current investments in surveillance cameras with cloud gateways to get the benefits of the cloud.

### #4 Reduce Capital Expense of Hardware Costs

Eliminate or reduce the costs of NVRs and local storage with pure cloud or cloud enabled solutions.

### #5 Scale Globally on Demand

Dynamically change solutions as your requirements change without costly hardware and IT infrastructure expense.

### #6 Upgrade Performance

Centrally access any video from any location to get the right data to the right person on demand.



***tyco***



**ENGAGE**  
TYCO CONFERENCE 2019



Thank you

Questions?



**Johnson  
Controls**

