Big Data in Action - Predictive Risk Analytics Solution for Airport Security

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AlertEnterprise, Inc.

Professional Techniques - Session T12

Incident Management, Command & Control Challenges

Geographically Dispersed assets/locations

- Guards with guns – expensive and not cost-effective
- Impossible to cover all locations
- Putting guards/employees at unnecessary risk

3 ring binders approach – not suitable for modern times

- We are up against Organized and State Sponsored Crime
- Response has to be instant and appropriate

Audit trail of incident management – very important

- How incident was handled – to learn from mistakes for future
- Making sure no one took advantage of an emergency
- Monitoring First Responders (with privilege comes accountability)

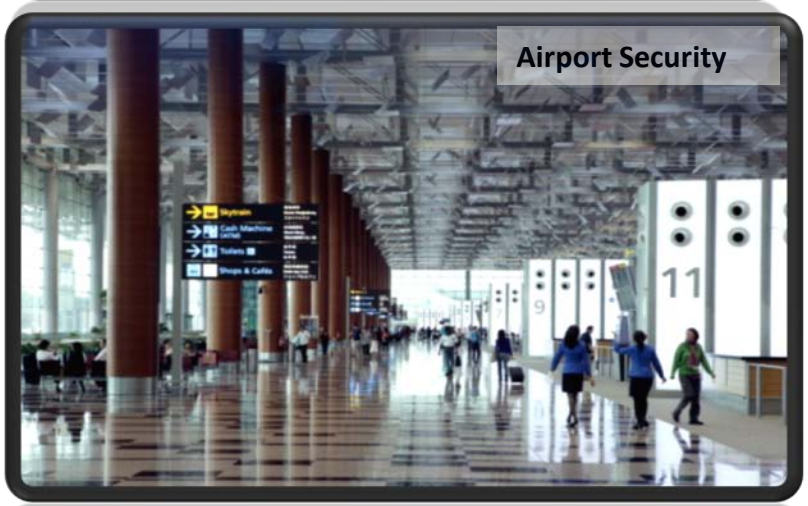
Leveraging investments in technology

- Non-lethal weapon systems (rubber bullets, sticky foam, non-lethal gas)
- Cameras, sensors, alarms, physical access control systems etc.

Complex Risks and Security Challenges

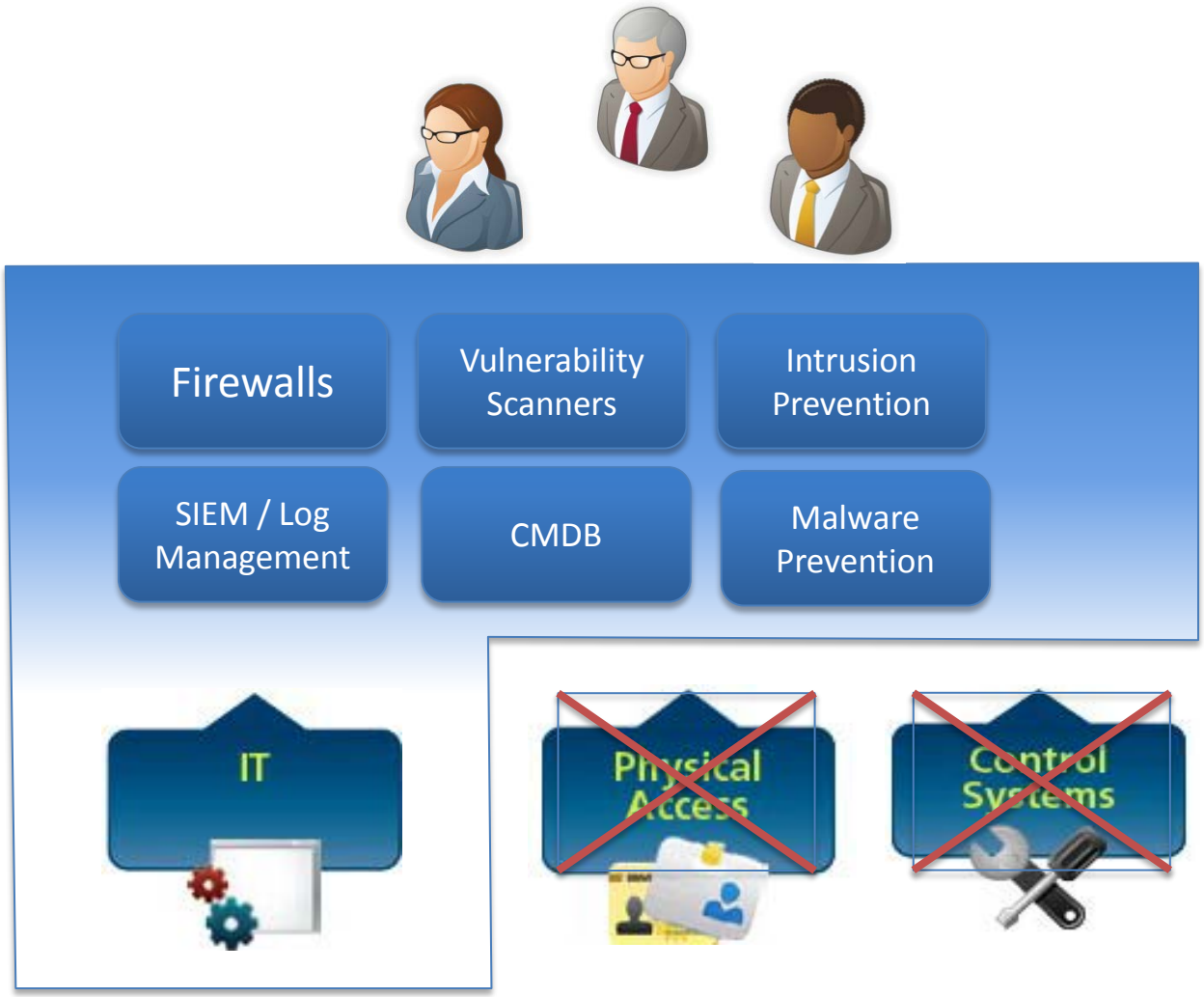
- **Threats**
  - Sensitive Asset Diversion (Dangerous Chemicals, Pathogens, Nuclear material)
  - Cyber Attacks - Utilities (Water, Power, Gas), Smart Grid, Transportation
  - Terrorism (Chemicals stolen to make explosives)
  - Bio Terrorism (Food & Beverage, Consumer Products)
  - Disgruntled employees/contractors
- **Monitoring both Access and Behavior**
  - Who has access to assets (physical, cyber..)
  - Any suspicious behavior or activities
  - Monitoring Privileged Users (guarding the guards)
- **Effective Response, Command and Control**
  - Situational Awareness, Incident/Emergency Management

Securing Our Critical Infrastructure is a National Imperative



Billions of Dollars Being Spent on Security. Breaches Still Continue: Why?

Traditional Cyber Security Solutions Address Only One-third Of The Problem

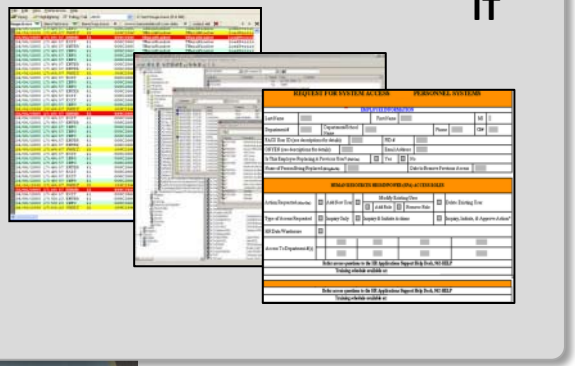


Silos are Costly, Inefficient: Organizations Respond to Threats in Silos - Attackers Don't think that Way.

Access Management

Compliance

Security



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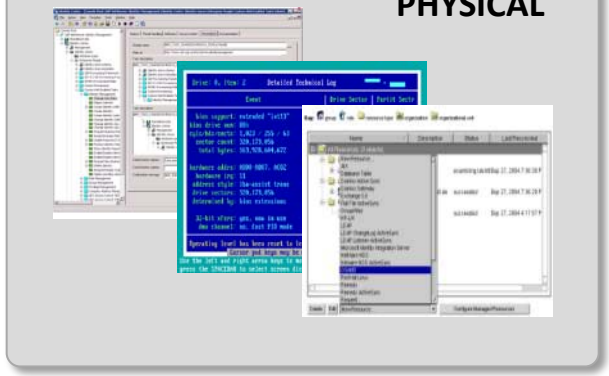

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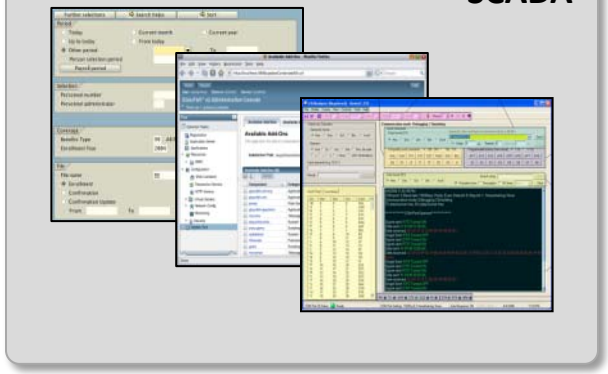


IT Resources

SAP

hp

IBM

ca

Tivoli software

ORACLE

Physical Access

LENEL

A UTC Fire & Security Company

tyco

Johnson Controls

Honeywell

SIEMENS

Control Systems

Honeywell

ABB

invensys

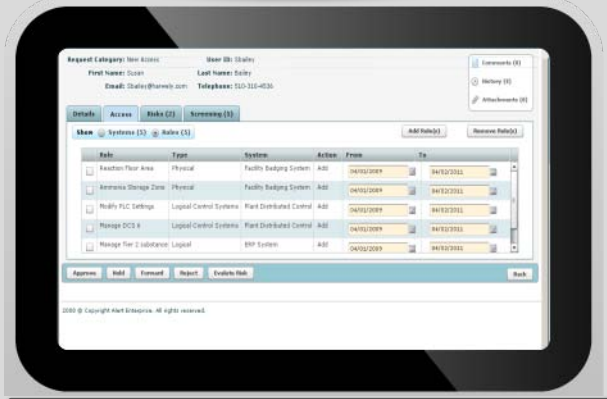
SIEMENS

Schneider Electric

EMERSON

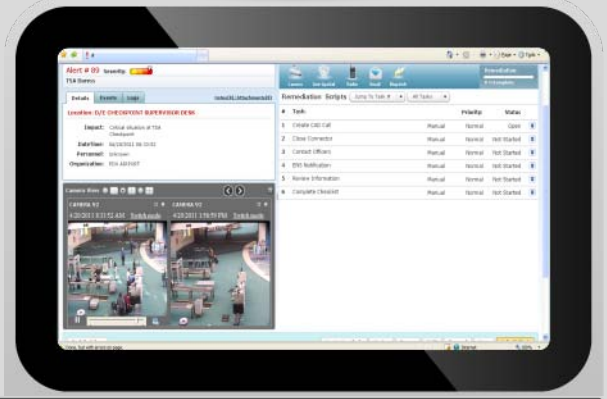
The Solution – Unified Security, Identity and Access Governance, Compliance and Situational Awareness

Enterprise Identity and Access Governance



Multi-Regulatory Compliance

Security Critical Infrastructure Protection



Security, Risk and Access Governance Platform

Integration Framework

IT Resources

SAP, hp, IBM, ca, Tivoli software, ORACLE

Physical Access

Lenel (A UTC Fire & Security Company), tyco, Honeywell, Johnson Controls, SIEMENS

Control Systems

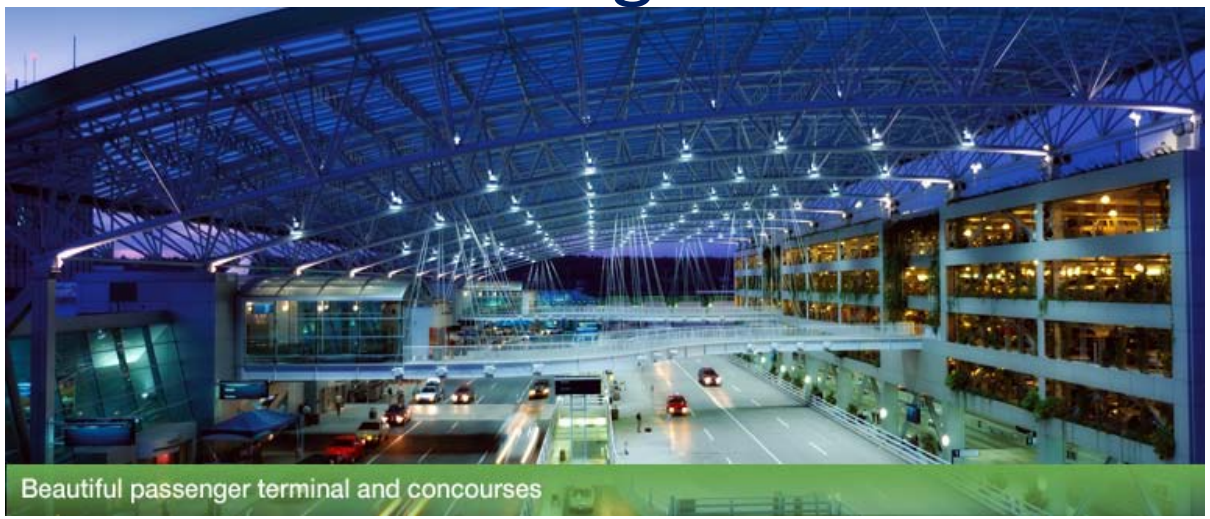
Honeywell, ABB, invensys, SIEMENS, Schneider Electric, EMERSON

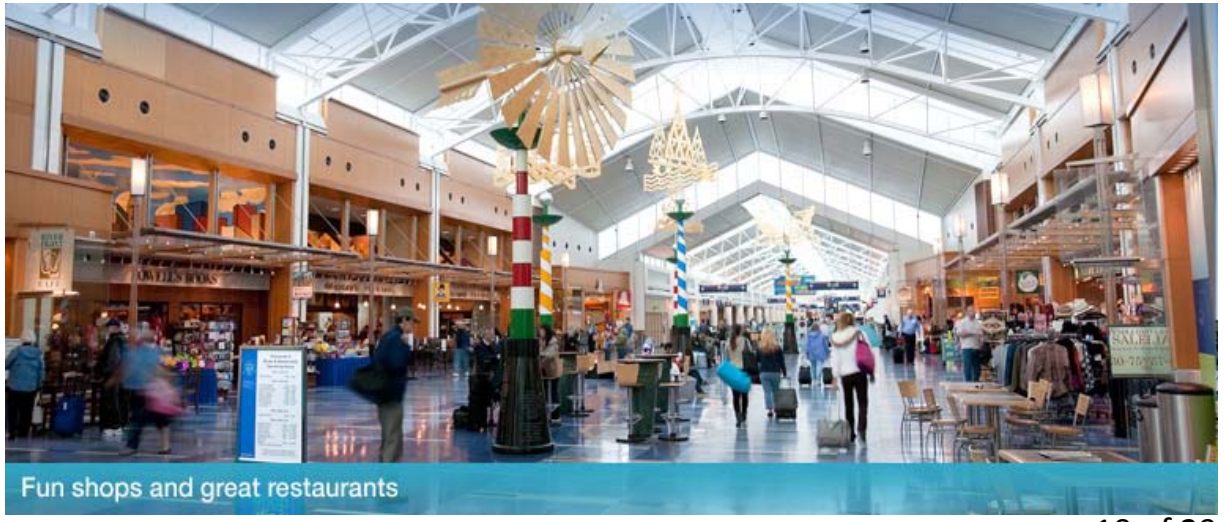
Airports are Complex Environments to Secure with Passengers, Tenants, and Employees

The secret to keeping the pace of innovation and commerce moving is to never stop…

People Need to Feel Safe and Secure

Keeping Safety and Security in Check Means Continuous Monitoring and Real-Time Situational Intelligence





The Challenge Facing Security Operations – Analysis Takes Too Long

Converged Solution Delivers:

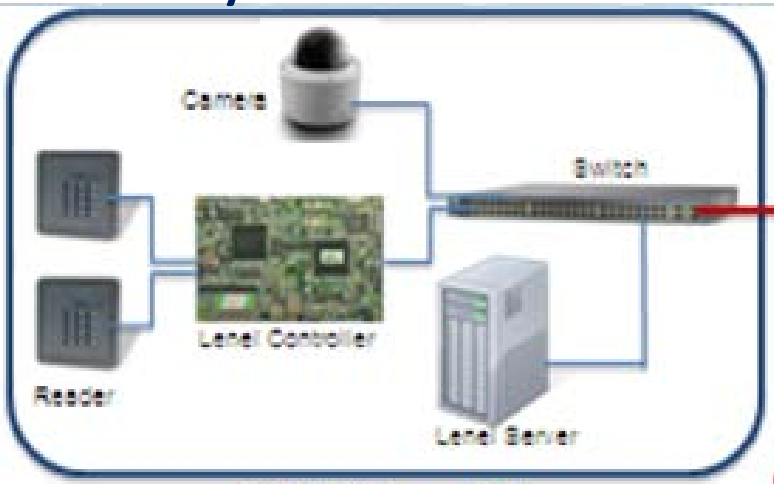
- Logical-Physical Security Convergence software with insider threat prevention Automate all aspects of Enrollment, Credentialing and Issuance related to the Airport Badging Office
- Situational Intelligence, Incident Management, Reporting, Response and Automated Remediation to enhance the Airport and Security Operations Center
- Predictive analytics can connect the dots across multiple actions that now paint a much more sinister picture.
- Huge amounts of data from disparate sources need to be analyzed.
- Large data sets from multiple disparate sources can pose a big problem.

Why In-Memory Computing?

- With In-Memory Computing, the speed of analytics and the real-time response capabilities can prevent incidents from occurring.
- Without the benefit of In-Memory computing, the time to handle large sets of data from multiple disparate data sources was taking too long.
- handling a combination of structured and un-structured data required separate processing streams to analyze results.
- With the integration of the Big Data, AlertEnterprise can analyze risks almost instantaneously and actually automate mitigating response actions to prevent malicious threats before they manifest.

Reducing the Time to Respond from Minutes and Hours to Split Seconds can literally make the difference between Life and Death – Mitigating the Impact from Adverse Incidents Saves Lives and Money

Utilize In-Memory Computing to Power the Predictive Risk Analytics Solution to Prevent Security Incidents



AlertEnterprise SAP HANA Demo Environment

SAP LAN

Michael Laptop

SAP HANA Makes AlertEnterprise Predictive Risk Analytics an Effective Means to Prevent Insider Threat. Utilizing SAP HANA speeds up the processing and correlates large data sets from multiple disparate sources

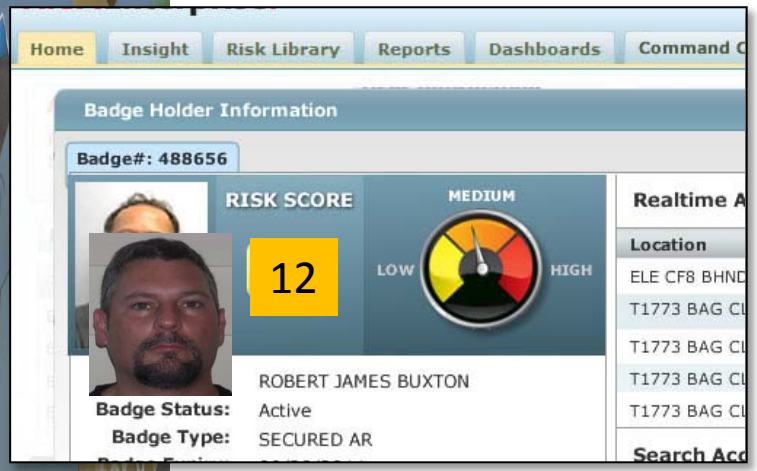
AlertEnterprise On VM

SAP HANA

Predictive Analytics – Requires Correlating Large Data Sets from Many Sources

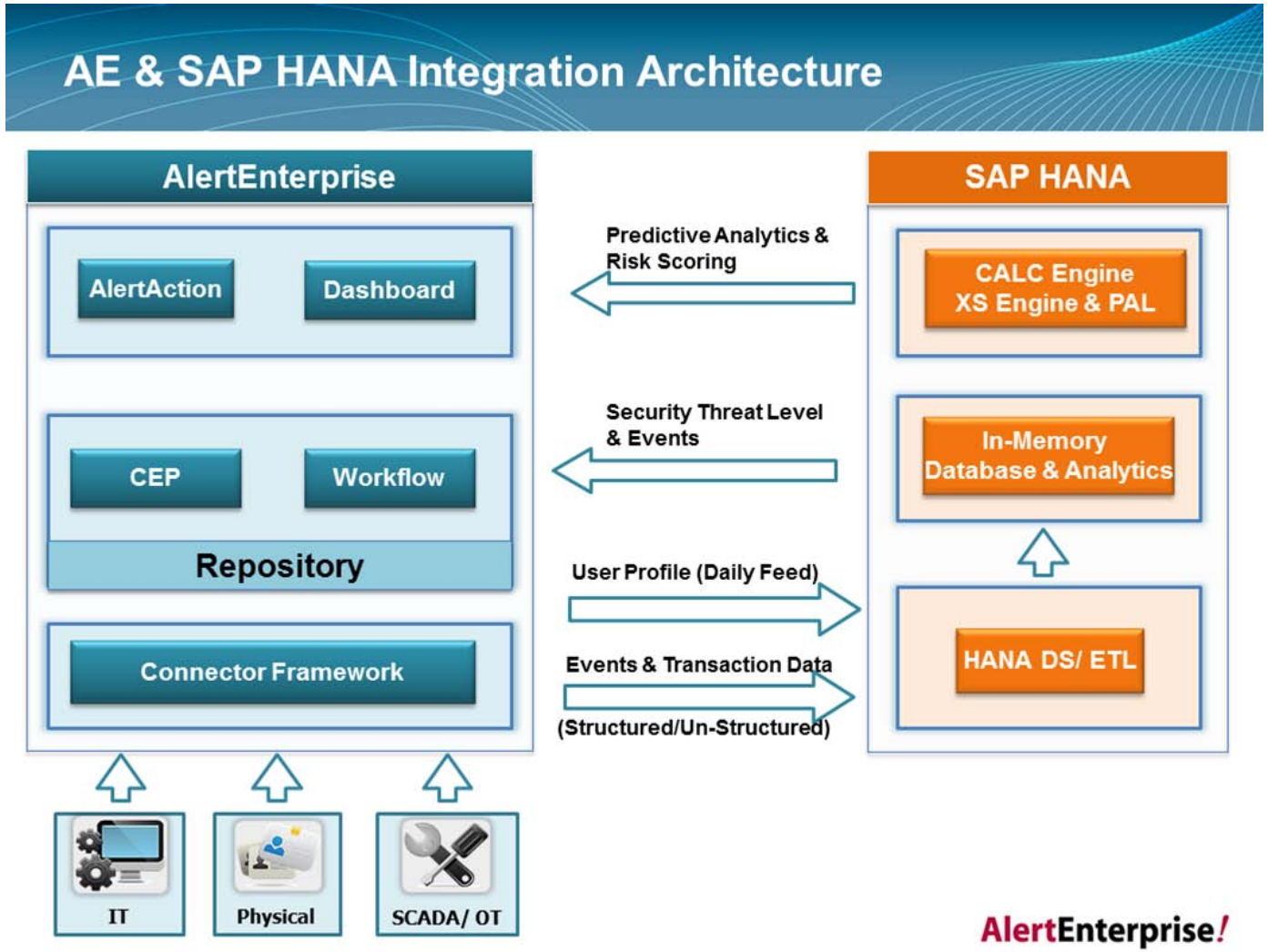
Use analytics to:

- **Track HR Flags**
- **Identify training issues**
- **Monitor Behavior and ToD Trends.**
- **Prevent security breaches**



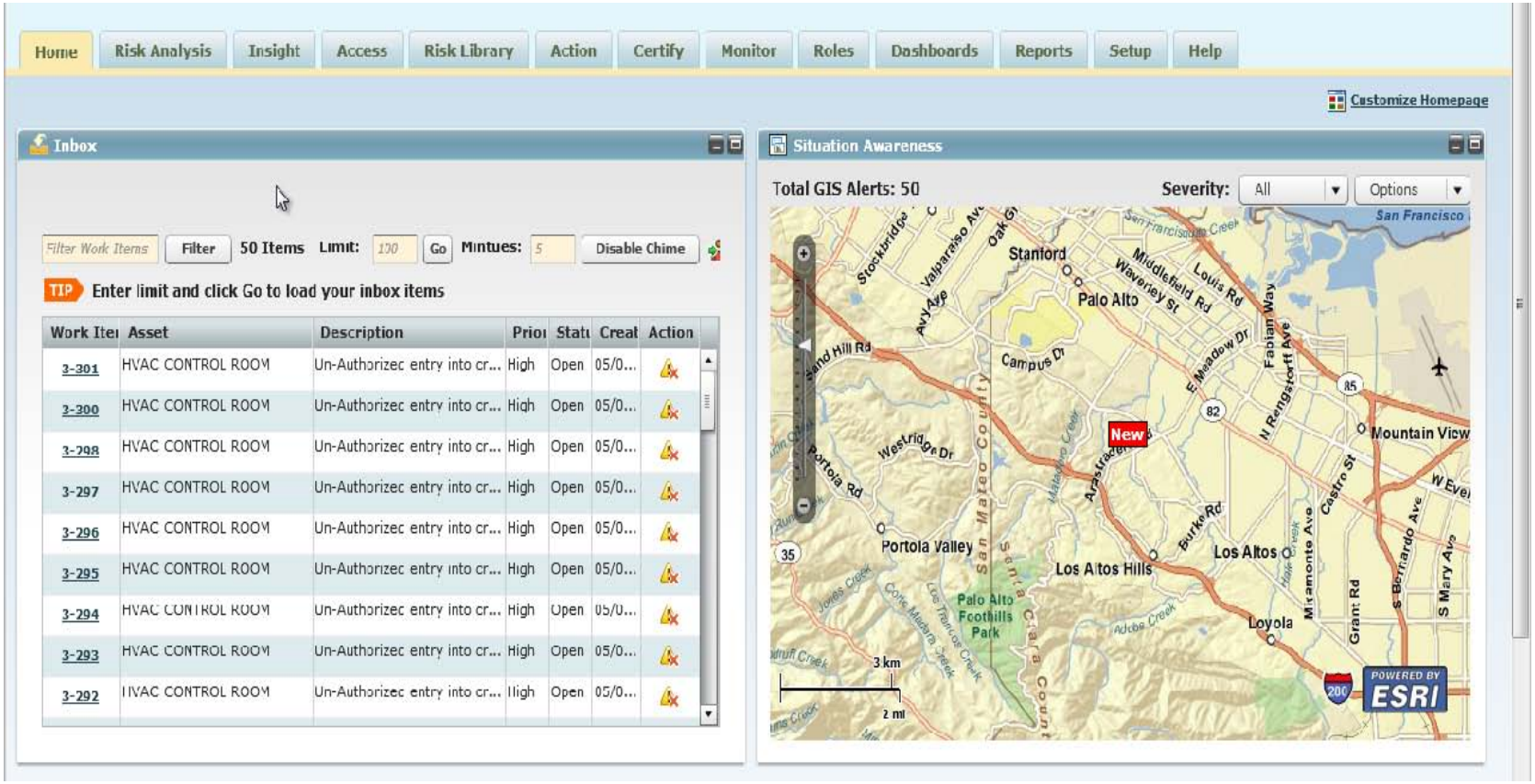
Physical Access	Access attempts outside of their normal working hours.
	Access inactivity (over 30 days without use).
	History of access issues.
System Access	Downloading of files from SharePoint.
	Use of thumbdrive on sensitive systems.
	VPN usage while on site.
Person Information	Updated STA information.
	Association with criminal activity (not disqualifying).
	Training expired.
Human Resources	New to the job, accessing wrong areas.
	History of performance issues.
	Recent performance review with HR.

The Combined Solution Delivers Continuous Monitoring and Ability to Handle Large Data Sets Quickly and Efficiently for the Best Results

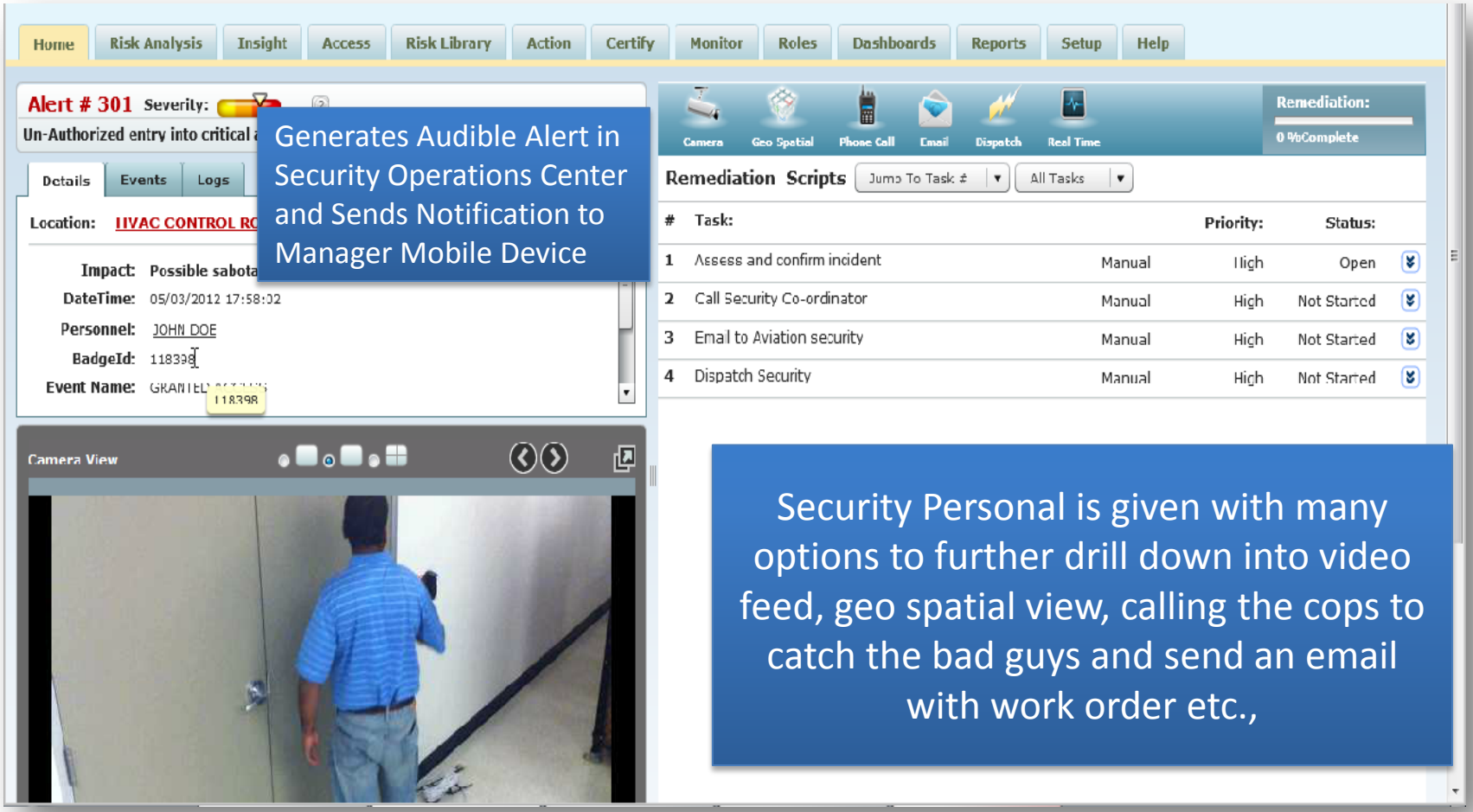


AlertEnterprise!

The Home Screen Delivers Alerts and Events along with Geo-Spatial Context to Security Operations Managers



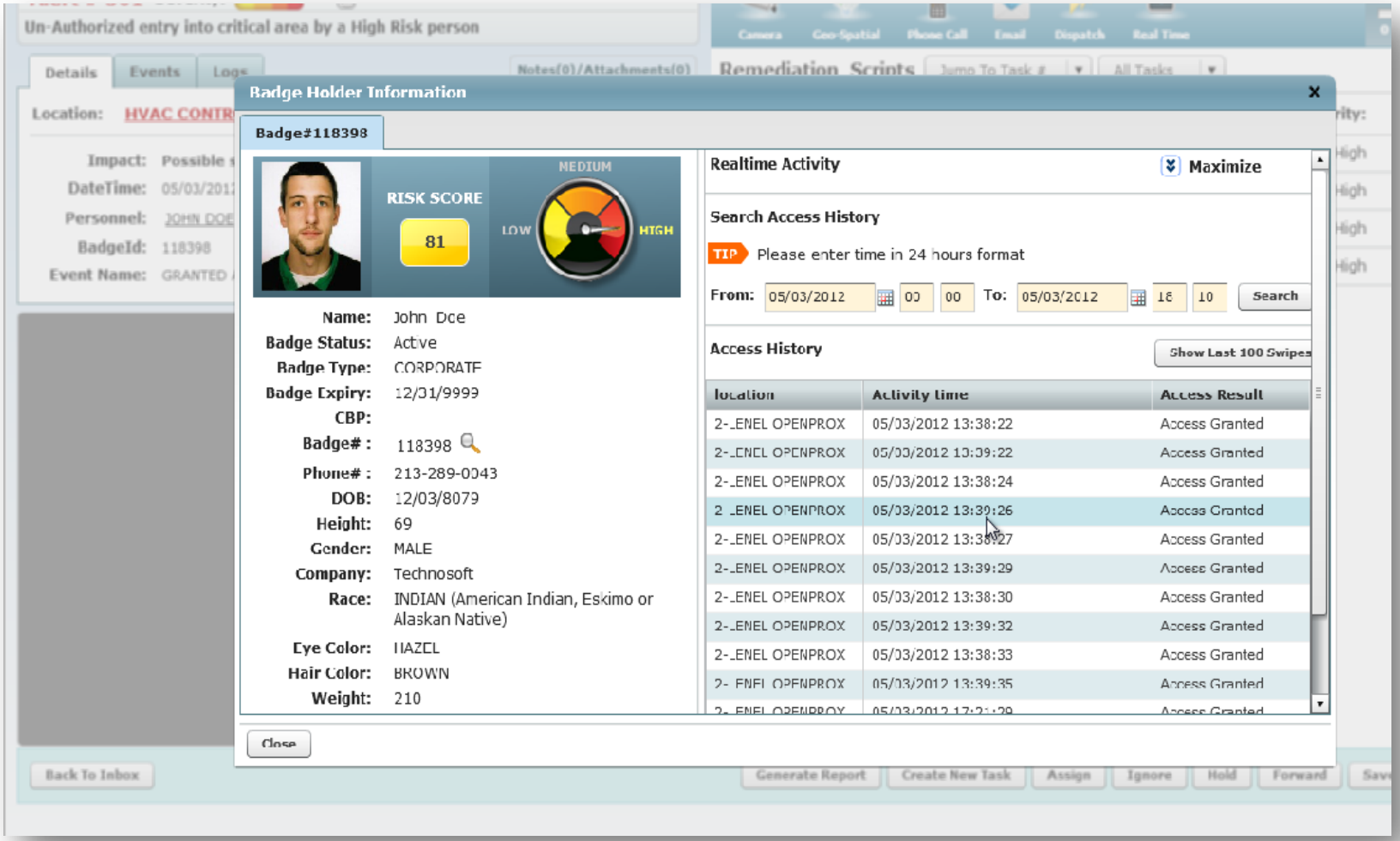
Employee Badges into HVAC Control Room. Software detects lack of Work Order and Runs Risk Analysis on Employee



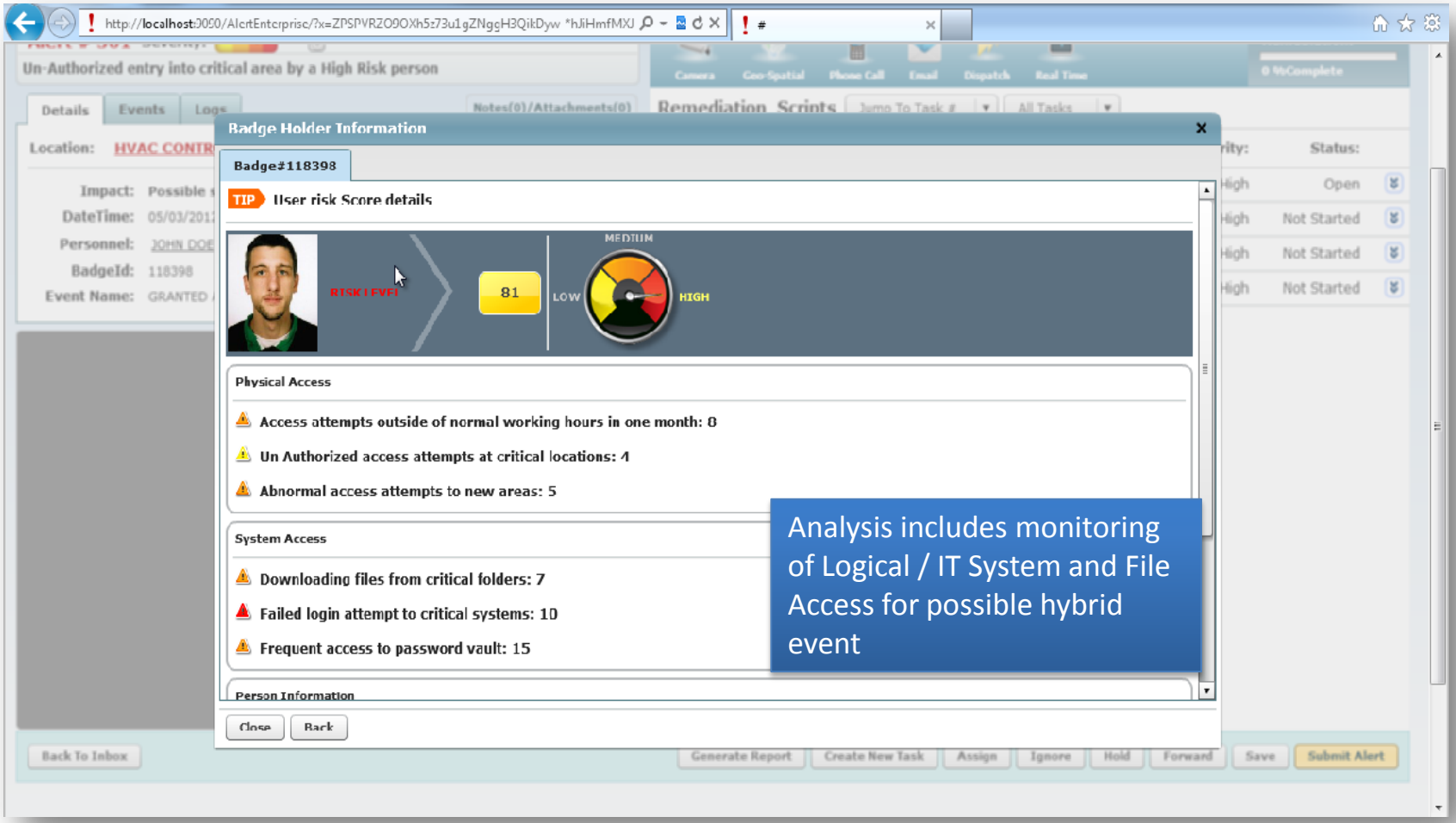
Generates Audible Alert in Security Operations Center and Sends Notification to Manager Mobile Device

Security Personal is given with many options to further drill down into video feed, geo spatial view, calling the cops to catch the bad guys and send an email with work order etc.,

Software checks HR records, work history, access patterns etc. and returns a high risk score of 81



Risk Score Details Include Past Access Attempts Outside of Working Hours / Unauthorized



The Software has identified Zach as a person of concern.

- Zach has been a baggage handler for three years. He had a higher rate of accidents and was written up for some negligent workplace behavior.
- Zach was denied promotion last year. Coworkers have been concerned that he has become withdrawn and have expressed their concerns to HR.

With the help of Predictive Analytics, Zach Has Been Tagged as a High Risk Insider

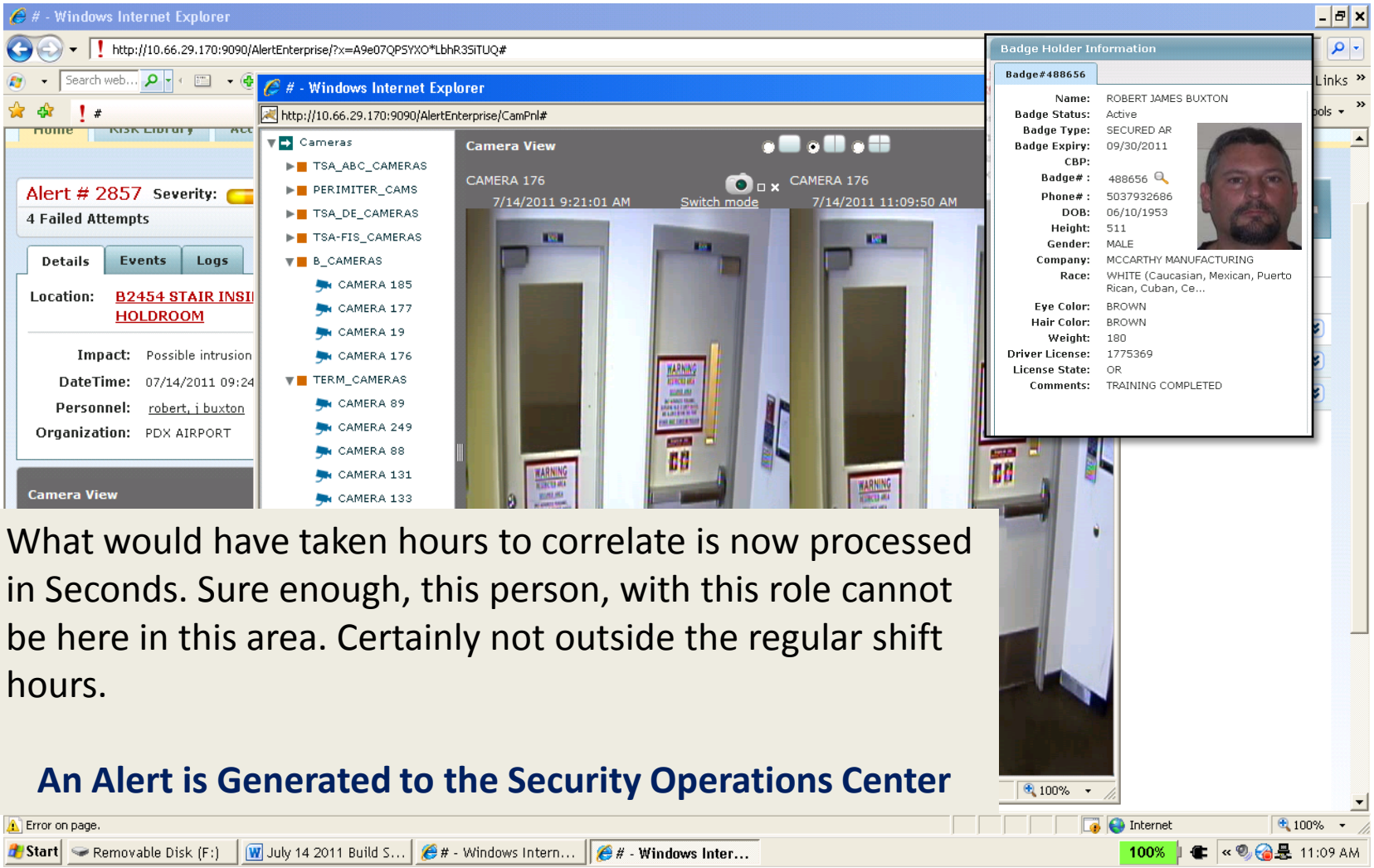
- It is 11:00 pm on Saturday Night.
- Zach Attempts to Enter the US Customs Area
- **Is he up to no good?**

Precious seconds are ticking by, reams of data from multiple sources need to be processed and analyzed – HR data, Federal Identity Information, Prior Access Patterns, Physical Access Level Assignments and Job Role Information all need to be analyzed in real-time. Preventing an incident from happening is a race to beat the clock.

The Unfolding Incident

- Zach attempts to use his standard issue airport access badge to enter the US Customs area hoping to find some left luggage waiting to clear customs.
- He swipes his badge multiple times, only to find out that the door does not open.
- The Software picks up the badge scans and springs into action to analyze all the events and the information from all the systems. Relying on in-memory processing speed and the capacity to manage large data sets, The Risk Analytics Engine is churning away at all the HR information including the photo, access level rights, and Time-Of-Day access patterns for the last 100 days.

End-to-End Security for the Airport



What would have taken hours to correlate is now processed in Seconds. Sure enough, this person, with this role cannot be here in this area. Certainly not outside the regular shift hours.

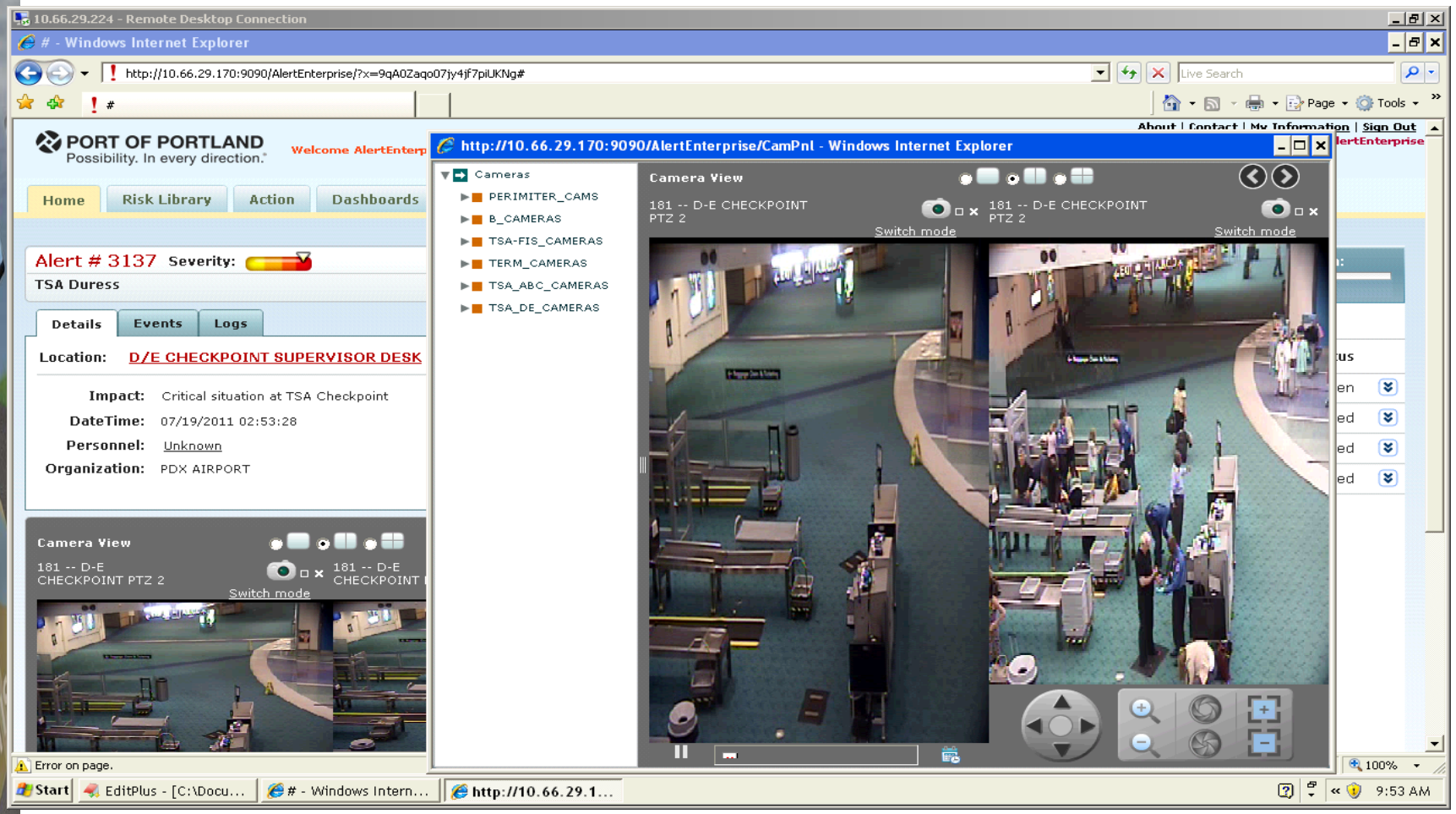
An Alert is Generated to the Security Operations Center

Security Operations Center
Working for you behind the scenes

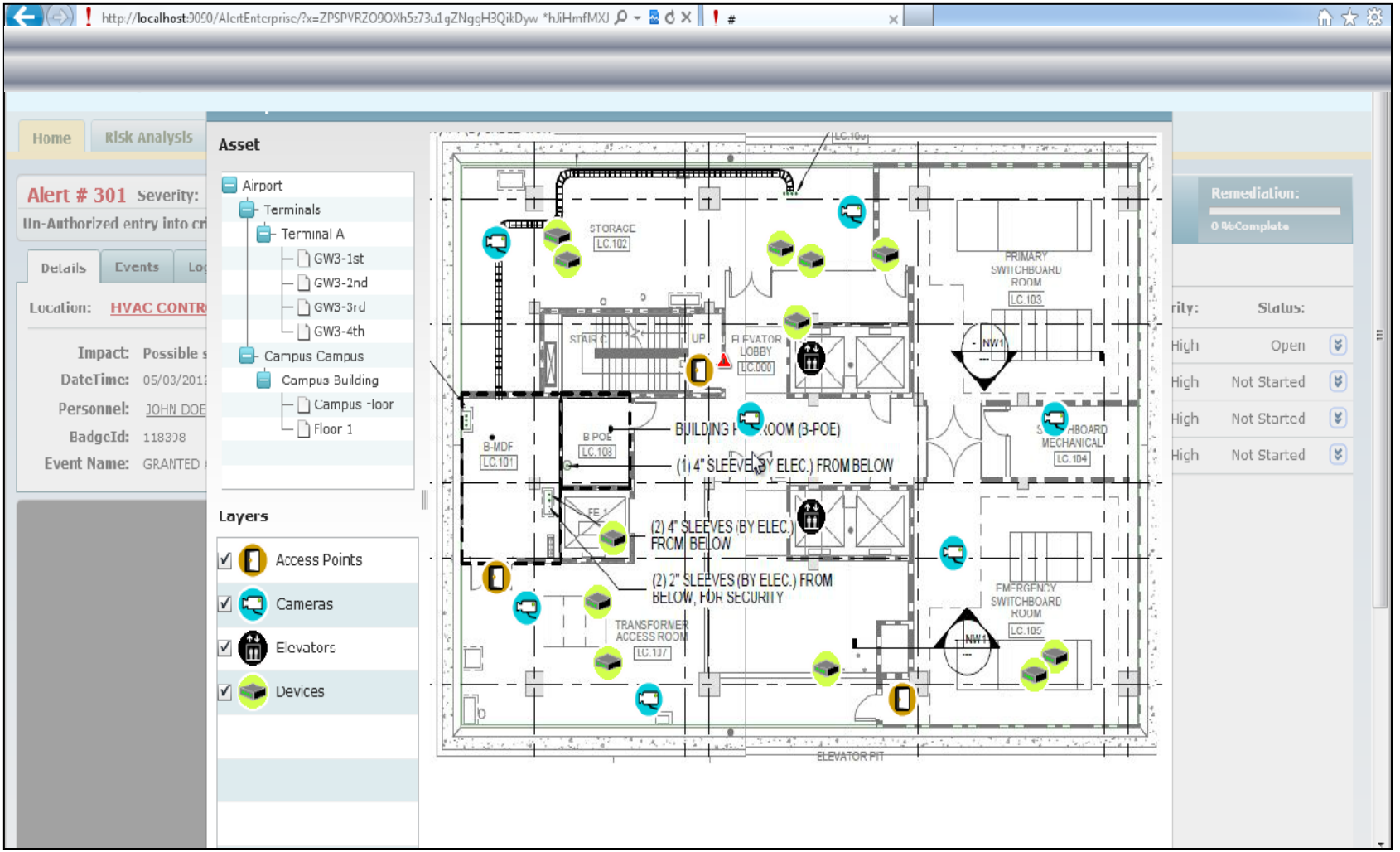
The Security convergence Software grabs a video surveillance clip, the person's HR profile, including a stored employee photo, as well as the current GIS position / facility map identifying the door and the person.

INCIDENT AVERTED!!

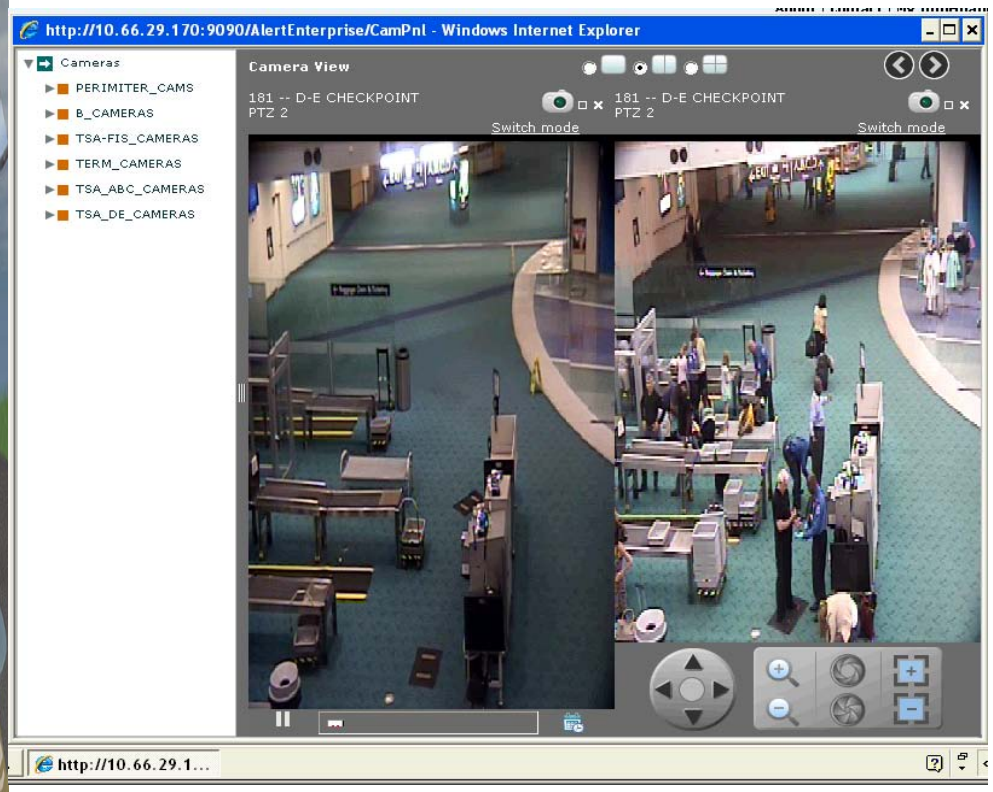
Airport Checkpoint Security Monitoring Access Patterns, Duress Alarms and Non-Complying Travelers



Unstructured Data including GIS Mapping Information is used by Security Managers to Track Movement of Suspects



Prevention is the only Fool-Proof Security



Thanks to the Security convergence Solution, Portland Airport remains vigilant but confident that commerce will continue un-interrupted.

Safety and Security will continue to be a hallmark of why the PDX maintains the distinction of being a Conde Nast Traveler's Best Business Airport and Destination

Real-Time Monitoring of Blended Threats to Prevent Incidents

- Using Big Data, Airport Security Staff can now rely on a system that analyzes blended threats across applications and physical access control system to conduct predictive risk analytics
- Correlate background information and access patterns with current actions
- Make a determination of the threat prior to an incident occurring

THANK YOU

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