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Total Solutions Protect Airports

A wide range of technologies stand guard over airports. This second of three articles looks at what makes up electronic security systems, along with challenges, are on the horizon.

BY LING-MEI WONG

SURVEILLANCE

As it is impossible for security guards to watch an entire airport at once, cameras serve as valuable lookouts. Some airports route video back to a security operations center, and larger airports have a secondary redundant viewing location for emergency operations, said Gary Tryon, Sales Manager for Europe, Middle East, Africa (EMEA) at Brijot Imaging Systems.

Network cameras, with their connectivity and scalability, are becoming a staple. "Both IP cameras and those with analog transmission are being used," said Uwe Karl, Vertical Market Manager of Airports, Siemens Building Technologies.

IP surveillance is being combined with other technologies for maximum effectiveness. "Video content analytics (VCA) and IP cameras are becoming standard for all large institutional deployments," said James Mihaychuk, Product Manager and Applications Engineer at Lumenera.

VCA aid security staff in identifying possible threats. "Video analytics can assist in protecting both landside and airside areas, by detecting automatically abnormal or suspicious behavior patterns," said Nir Hayzler, Vice

President of Marketing, NiceVision, Nice Systems. "Analytics can shift security into a more proactive mode rather than reactive."

"Demand for better security systems with intelligence is increasing," said Wong Wai King, Country Manager for Australia and New Zealand, Axis Communications. "This includes solutions from queue management to facial recognition at customs clearance."

Advanced analytics like object identification or abandoned-object detection based on motion detection, however, can cause many of false alarms.

"iOmniscient's internationally patented non-motion detection technology copes with crowded scenes and can handle very long detection times, which are important in airports, to avoid false alarms from the many bags that may be left momentarily by genuine passengers," said Rustom Kanga, CEO of iOmniscient. "Furthermore, it is possible with this technology to differentiate between bags and other objects such as trolleys or people. This is just one of a suite of applications for airports, which normally require a comprehensive integrated

solution covering a wide range of detections, from intrusion detection and behavior analysis to counting in a crowd and identification technologies, such as vehicle license plate or facial recognition.”

BIOMETRICS

With biometric identification, airport management hopes to prevent unauthorized access to restricted areas and unauthorized boarding of aircraft. Several countries are piloting national identification documents with biometrics, or optional registered traveler programs to verify identities of frequent flyers.

“Biometrics is being used to authorize entry,” Karl said. “Airlines are particularly sensitive when it comes to security controls. Biometric methods accelerate passenger check-in processes, provide more security and reduce costs.”

“Dividing employees into different groups with different access rights is common, but to more efficiently



■ Steen Munch Schmidt, Director Solution Sales at Precise Biometrics Solutions

Different countries interpret international directives in different ways, which means that the industry is challenged in creating a standard solution.



▲ Many security systems are brought together in airport security solutions. (Photo courtesy of Pelco)

secure that these roles are obeyed, biometric access control needs to be put in place,” said Steen Munch Schmidt, Director Solution Sales at Precise Biometrics Solutions.

EXPLOSIVE DETECTION

The U.S. Transportation Security Administration (TSA) reported that more than 13 million prohibited items — albeit most of them lighters — were intercepted in a single year.

Newer imaging technologies are joining X-rays. “Brijot’s GEN 2 whole-body imager detects liquids, gels and explosive threats without knowing what the item is,” Tryon said. “The GEN 2 uses passive millimeter-wave technology to indicate where objects are hidden on a passenger’s body.”

PERIMETER

At the edge of airports, perimeter solutions are overlooked but no less important. They can include barriers, lighting, surveillance, cabling and intrusion detection. “With a smart video surveillance system, airports can observe all areas 24 hours a day, seven days a week,” Karl said. “As soon as an unusual incident occurs, an appropriate signal is automatically transmitted to a predetermined location (security control center or

mobile devices). Appropriate steps can then be taken immediately to minimize damage.”

The Cardax FT high level integration with the PowerFence Trophy FT system delivers a perimeter security solutions designed to reduce theft of fuel resources. This perimeter system “provides the means for remote sites to be centrally monitored and managed for timely response to alarms,” McVeagh said. The solution is divided into zones, allowing attacks to be located quickly.

COMMUNICATIONS

Integrated security communications transmit voice, data and video. Karl described them as “the carriers of security-related information between command and operations centers, to and from security forces, and across agency responsibilities.” While not strictly for security, communications ensures security operations remain in place.

“Operational communications is critical for the smooth running of any airport. Staff and security cannot rely on communication systems that almost always work, they simply must work — always — and be a resource that those involved can trust unconditionally,” Haegh said.



Zenitel's intercom features a robust setup, with alternate routing in the event of failure. It is also compatible with existing equipment to enable continued use of infrastructure that is already in place, while generating cost savings.

CHALLENGES

As airports continue to be major transportation hubs, security will need to continue to improve. Security challenges range from the technical to the abstract.

One technological challenge is that higher resolution surveillance, such as multiple megapixel cameras, requires more storage. "Most airports require real-time recording and higher image quality (megapixel), which bring need for higher storage and bandwidth," Wong said.

Processors need to get faster and more robust to deal with more data. "Airports need to be able to capture (biometrics) at the border or customs point very quickly if that person is of interest," Lee said. "You need to capture that biometric information more efficiently and have enough data to distinguish between people."

Decreasing long lines is another hurdle. Karl said a combination of several checkpoints to a one-stop check eliminates bottlenecks.

Weighing the need for tight control and easy access is a delicate balancing act. "There is always going to be a trade-off between security and convenience," Lee said.

This was echoed by Precise Biometrics, particularly for secure traveler credentials. "Travelers want self-service procedures to bypass traditional security," Schmidt said. "This may include checking in online and going straight to the gate, using biometrics."

AD AEROSPACE CABINVU

CabinVu provides pilots with a clear, forward looking view of outside the cockpit door and in the surrounding area, from their usual seated positions.

A series of cameras link to either one or two monitors and controllers in the cockpit set forward of the pilots for ease and comfort of use.

This means that the pilots can visually identify anyone requesting entry and take appropriate action should an incident arise. This is in line with recommendations from International Civil Aviation Organisation ICAO Annex 6, EUROCAE ED-123 and provides compliance with FAA 14 CFR 121.313(k) and 14 CFR 121.584 (a) and with EU-OPS 1.1255 Sub Part S.

BRIJOT BIS-WDS GEN 2

With full-motion, real-time passive millimeter wave imaging capabilities, the Brijot BIS-WDS GEN 2 System enables security personnel to detect concealed threats sooner, minimize loss prevention more effectively and virtually pat down and screen people.

Brijot's standoff passive millimeter wave imaging system offers security and loss prevention officials a quick and discreet method for detecting

suspicious hidden items, whether they are explosives, weapons, contraband, stolen electronics, or other items.

The GEN 2 reveals hidden liquids and gels. Brijot's millimeter wave imaging solution is an effective high-throughput people screening system to effectively detect potential threats.

CARDAX FT

Cardax FT is a user friendly, single user interface and software package, giving airport security managers total control over security and access control from the core of their site to the perimeter. Cardax FT resides on an IT network and stores information about cardholders, the site and system activity.

A Windows-based security system, Cardax FT integrates access control and alarms management, intruder alarms, intercom, and photo identification. Complemented with integrations and interfaces with security systems such as surveillance, biometric, digital intercom systems, as well as HR, building management, vehicle identification and airport automation systems, Cardax FT is the platform for comprehensive landside and airside security.

While each airport will implement security to best fit its needs, worldwide guidelines need to be established. "Different countries interpret international directives in different ways, which means that the industry is challenged in creating a standard solution," Schmidt said. "Furthermore, there are no clear guidelines for exchanging biometric data across borders and, therefore, supporting the international or transfer traveler."

Better standards will help speed throughput, while ensuring security. "Increased standardization of data really helps mitigate problems in airports," Lee said.

"Persons that intend to harm others move faster than airport security can track," Tryon said. "Airports are reactive to threats; they should be more proactive to the fact that a terrorist is constantly trying to figure out how to defeat a metal detector and X-ray machine."

Airports remain targets for attack, which makes security an integral part of an airport's operation. As technology improves, it boosts security for travelers to fly in peace. **AS**

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