



NICE SYSTEMS' EYES AID AIRPORT SECURITY

Video surveillance has become a regrettable part of life today. Be it at a grocery store or outside one's own home people have resigned themselves to the fact that they are always being watched. Airports are no different; the hub of many activities, these areas need constant watching to ensure that the unusual doesn't happen under the guise of being ordinary. From the most basic of video surveillance systems to the most sophisticated, airports around the globe sport some combination of surveillance equipment. Surveillance solutions today are being coupled with analytical tools for enhanced security and better detection of threats.

NICE Systems, known for its digital video surveillance solutions for aviation security has been in the market since 1986 and is registered with NASDAQ. Its main product offering revolves around providing solutions that help organizations extract meaningful insight from interactions--voice, data, or video. Comprising different divisions that focus on multiple applications, this company provides solutions for the public and security sector (airports, railways, government and public facilities, critical facilities, and emergency service providers) and the enterprise sector (contact centers, and finance industry)

NiceVision is the division within NICE that deals with digital video security solutions. This division has a complete portfolio that covers a range of products comprising transmission/networking, recording equipment, management, and video analytical tools. Its systems are designed to provide end-to-end internet protocol (IP)-based solutions for monitoring as well as recording digital video in large, complex sites such as airports. It provides the video analytics tools that enable the analysis of information monitored or recorded at any point of time. This feature is especially useful both in real-time monitoring for detecting suspicious events as well as in post-event investigation, to prevent an unwarranted waste of time watching all recordings by zeroing in on suspicious recordings through analysis. Some of the classic events that the video analytics software is capable of identifying range from intrusion detection, illegally parked vehicles, check-in line overcrowding and abnormal behavior (for example, running, people moving in the wrong direction, loitering). The system is designed to not only identify events in real time but also filter out events from existing recordings for post-event analysis.

"Basically what we try to do is look at events from the point of view of the security officers in order to develop processes and tools to enable them to focus on assessing risks and making decisions rather than just trying to detect events. One of the major security challenges in airports is trying to detect meaningful security-related events while staring for hours at multiple monitors connected to hundreds and even

thousands of cameras being monitored. Video analytics tools such as perimeter intrusion detection, unattended baggage identification, tailgating, illegally parked cars or abandoned vehicle detection are a few of the capabilities our systems are equipped with, which enable enhanced airport security," elaborates Nir Hayzler, marketing director at NICE Systems to a *Technical Insights* query on the company's solutions.

The systems also have the ability to aid the security officer to identify whether the event is a true or false event, by instant replay of a suspicious event from its creation (for example, unattended baggage detection--instantly replay the event from the moment the bag was left with a single click). This, according to Hayzler, is done by incorporating metadata into the actual recordings so as to couple it with the actual video stream. The main role of the metadata is to allow the system to track down all objects in the video stream and their interactions with other objects. One of the biggest challenges faced today by most security systems is their inability to differentiate between real threats and false events, hence a conscious effort is being made to improve the intelligence capabilities of surveillance systems being developed, explains Hayzler. Here again research is being carried out on ways and means of improving the systems' abilities to identify false events from the real ones. The outcome of a false event affects not just airport security but business operations as well as it involves evacuating terminals and canceling or delaying flights.

According to Hayzler, another facet that is being avidly researched by the NiceVision labs is the ability to resolve events by tracking the suspect. Sophisticated algorithms on how to track down a suspect's current location once a suspicious event is identified is the latest on the list of innovations that this company is due to add to its existing offering. "This algorithm will identify all the areas where that one particular person has been active through the entire recording of multiple cameras, thereby allowing the security personnel to track down its path from the moment the suspicious event has occurred to his current whereabouts in the terminal," says Hayzler.

"NiceVision differentiates itself in the aviation security market by its holistic approach to video security, composed of a complete end-to-end IP-based solution, combined with a set of processes and video analytics tools, aimed to assist the security personnel to *detect* events, *verify* whether they are real and *resolve* them," Hayzler says in response to a *Technical Insights* query on how NiceVision's systems are different from those available in the market.

Talking about collaborations, Hayzler adds, "NiceVision is collaborating with a group of companies to do research on a non intruding suspect detection system for use in aviation security." The aim of this project, according to Hayzler, is to detect explosives, machine guns, and knives on people and their luggage by

using a fusion of technologies comprising millimetric waves, infrared, X-ray, and video surveillance. He believes that a system made of a combination of the above will provide improved security in real-time detection of terrorists, by combining inputs from multiple sensors, unrelated before, and gradually building a database on a suspect in real time. The video surveillance system plays a major role in such a solution, by analyzing and identifying abnormal behavior patterns as well as tracking the suspects throughout the terminal, he explains. Furthermore, the systems' non intrusive nature is a major parameter from an operational point of view, designed to enable it to function without slowing down the traffic at any point in the airports.