

# Airport Surveillance Technology

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Duos Technologies is a Jacksonville-based engineering firm that specializes in turn-key technology solutions with an emphasis on instrumentation and process controls, intelligent video and security systems, and information technology services. The company provides a wide range of customized systems to both the private and public sectors.

In 2004, Duos Technologies teamed with Sarnoff Corporation, a subsidiary of SRI (Stanford Research Institute) for the joint development of a pilot system that will allow airport security officials to identify, track and intercept people suspected of violating security rules, such as bypassing checkpoints. Airport closures, one of the many "0-tolerance" post 9/11 response mechanisms enforced by the Department of Homeland Security in the event of a [airport] security breach, impose substantial costs and distress on travelers, airlines, airport authorities and government agencies.

The prototype, which will be implemented for the first time in an indoor application at the Jacksonville International Airport, is funded by a \$1.35 million Transportation Security Administration (TSA) Grant to the Jacksonville Airport Authority.

The system is scheduled to come on line towards the end of March, 2005 and will undergo vigorous testing and evaluation by TSA officials during a period of 90 days. Once it has passed a series of acceptance tests it is expected to serve as a model for other airports and security sensitive venues across the land.

"Wrong Way Detection". An automatic alarm is triggered any time an individual is observed walking a wrong way. In addition to sending audible and visible alarms to security personnel, the security breach is captured with high quality cameras and recorded for instant retrieval at a command and control console.

All of these technologies are being integrated by Duos Technologies into a single scalable solution.

Video integration has become a critical aspect of facility monitoring, maintenance and security. Traditionally accomplished via an independent closed-circuit television network

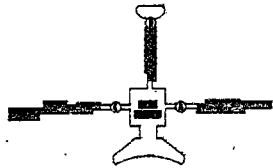
(CCTV), a combination of various technologies developed in recent times allows digitizing of video feeds from analog cameras. The digital video feed is subsequently compressed using a variety of compression technologies and transported and distributed to multiple locations simultaneously over local or wide area networks. Duos developed its own high-end digital video recorder licensed to its customers under the name of "rvsPro" which stands for "Remote Video Server, Programmable". The rvsPro is available as a desktop or as a rack mount unit in configurations of 4 channels (cameras), 8 channels or 16 channels.

Fixed and PTZ cameras can be controlled either locally via the native rvsPro interface or remotely via project specific browser based GUIs. The company hosts a demo site of its rvsPro at <http://www.rvspro.com>. The demo site features a Pelco Esprit camera installed on the roof top of one of the Quadrant buildings across the street from Southpoint. Interested persons can visit the site and log on to control the pan, tilt and zoom. The raw NTSC video signal is transmitted wireless from the Quadrant to the company's headquarters located in the Bank of America building at Southpoint. ■

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*The chief objective of the system is to identify i.e. verify a security breach, reconstruct any activity of a perpetrator between the time of breach and present time, and establish their current location.*

Live feed from almost 100 high quality cameras is stitched together and overlaid on a 3-D model of the entire area. All streaming video is recorded 24/7. Once a breach is noted, security personnel can access the Flashlight system from a command and control console housing dual 19" LCD displays. A simple click will "rewind the movie" to the instant the breach occurred. Once the perpetrator has been identified, the operator will tag the individual on the video and follow (track) the person in "fast forward" mode until the system establishes the exact real-time location. The object tracking can occur either automatically or manually in various speeds (2x, 4x and 8x).

Object tracking technology is being combined with a technology called "camera hand-off" to allow for continuous monitoring of the object within the defined coverage perimeter of the concourse.



Another unique technology which will be part of the overall system is a rule based

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