The background of the entire page is a close-up photograph of an American flag. The flag is draped over a red brick wall. The top portion of the flag is visible, showing the blue field with white stars and the red and white stripes. The text is overlaid on this image.

# SECURITY+LIFE SAFETY SYSTEMS

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# Jacksonville Airport Rockets to the Future

It's more than cutting edge; it's ahead of the curve



The Transportation Security Administration checkpoints include new state-of-the-art security technology.

**A** WISE AMERICAN once posulated that eternal vigilance is the price of liberty. Explosive world events in the early 21st century seem to reflect this, and the Jacksonville International Airport (JAX) in Jacksonville, Fla., is one venue taking security and protection seriously.

A system designed by Duos Technologies Inc., Jacksonville, in conjunction with their subcontractor, Pyramid Vision, Arlington, Va., a Sarnoff Co., is undergoing testing at the Jacksonville airport. The system uses the high-technology VisionAlert Suite and Video Flashlight surveillance software licensed from L-3 Communications, New York.

Installation of the two futuristic, integrated systems was completed in the latter part of 2004 by Electrical-Services Inc., (ESI) Leesburg, Fla. James Thompson, project manager at ESI and 15-year veteran of the company, said ESI's 40-year history of high-security, high-profile contracts includes institutions such as state prisons, educational facilities and healthcare projects.

One of ESI's greatest accomplishments is etched in Florida history—the 1997 installation at Universal Studios in Orlando, now among the country's largest and best-known theme parks. However, the Jacksonville Airport Flashlight Project—as it came to be called—was the first of its kind for ESI, having some 14 to 16 personnel assigned full time at the endeavor.

PHOTOS: DUOS TECHNOLOGIES

## Put to the test

Jacksonville was home to Super Bowl XXXIX. Already a busy place, JAX would become a mad house during the week of Feb. 2, 2005. Pouring into Jacksonville's largest commercial airport were hordes of fans, media and dignitaries. Concourse A was bombarded with passenger foot traffic that far exceeded a normal day for the airport.

A central control room hums behind the concourse walls, where surveillance cameras viewed through computers perform virtual reality miracles in nanoseconds.

The U.S. Department of Homeland Security is watching a living lab experiment within the airport confines. This is the rollout of a pilot project that will be studied by municipal airport security specialists and administrators all over the country. If deemed a success, it will serve as a model for dozens of major U.S. airports.

"The VisionAlert and Video Flashlight systems are the backbone of this project," said Craig Chambers, vice president of Advanced Video Systems for Virginia-based L-3 Communications GSI, a division of the nation's eighth-largest defense contractor. "These separate and distinct surveillance products can be configured to work together or operate independently."

In the example of the Jacksonville application, the systems have been set up to work jointly and to share information in a lightning-fast, digital format.

It was jointly, too, that the pair of companies won recognition in the Wall Street Journal awards for Global Technology Innovation in November 2004—a fact that would seem to bode well for the testing and evaluation period at JAX. VisionAlert's sensory capability can examine, analyze and react to human scenarios or input parameters that suggest possible threats to infrastructure and/or people in public venues.

Under the supervision of Pyramid Vision's partner, Duos Technologies, VisionAlert was customized to the specific envi-

ronment of JAX at Concourse A, with nearly 100 Pelco cameras strategically deployed on walls and in ceilings throughout the terminal. Cameras were installed unobtrusively on key area walls, between 17 feet and 40 feet, in ceiling-mount configurations.

The system extends the reach of airport law enforcement staff with intelligent monitoring features. It can be set to recognize specific threats, including perimeter/zone violations, wrong-way movement in a targeted zone and unattended packages. The system is the result of a full decade of research fueled by more than \$60 million in public and private funding.

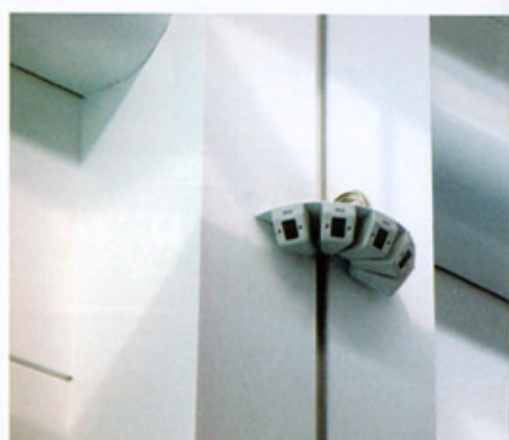
But it is not only perceived threats that worry government, airport and law enforcement officials. False alarms pose great threats as well. According to Sandy Bateh, senior vice president, Duos Technologies, airports incur astronomical losses when forced to evacuate a large terminal, especially during peak hours. Industry experts estimate tens of thousands of dollars are lost when this occurs.

The system includes many smart features that thwart the potential for false alarms. For example, while most airports currently are protected by 1970s-era video systems, many of which are still analog and may use videocassette recorders instead of digital video recorders, the new system represents a giant leap forward. First deployed outdoors and only by the military, and tested in environments such as the Kosovo conflict of 1996, the system was reengineered for challenging non-military environments.

## Futurespeak now

As impressive as the VisionAlert may be, Video Flashlight is equally so. Video Flashlight can instantaneously interpret and merge the real-time images of dozens of cameras in order to create a moving, 3-D computer image displayed on a monitor in the central control room.

The monitor displays full animated computer mapping visu-



Camera surveillance is a layered design that avoids coverage gaps.

alizations that recreate the movement of the public on the other side of the terminal walls. Security and law enforcement staff viewing the images as real-time activity can change angles or perspective with a joystick, mouse or keyboard. This function is termed the "warp & stitch" mode. This application is the first of its kind fully installed and operational anywhere in the world.

ESI's Thompson said that auto pan-tilt-zoom cameras accounted for only a handful of the nearly 100 total cameras used in the integrated systems set-up. It is the layered and overlapped camera design that allows the installation to do its magic.

"There is not one cubic foot of space that's not covered by at least a few cameras at any given moment in Concourse A past the Transportation Security Administration (TSA) checkpoints," Thompson said. "We have the entire interior space totally blanketed."

Linking cameras to computers used more than 25,000 feet of coaxial cable, along with roughly 1,200 feet of fiber optic cabling. The biggest challenge ESI crews had was remaining as unobtrusive as possible with respect to passengers, especially during periods of peak activity at the terminal. Workers were carefully screened and provided security clearance each day when entering or leaving the site.

After the catastrophic events of 9/11, airline TSA checkpoints for departing airline passengers became the focus of national attention. Images of low-tech terrorists easily passing through checkpoints on their way to a date with infamy captured the world's attention. Clearly, electrical contractors can expect jobs using similar technologies to surface, as the United States fortifies its home. +

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## Behind the Scenes at Concourse A

Sandy Bateh, senior vice president at Duos Technologies, is the former chief information officer in Jacksonville. It seemed fitting that he would become project manager of the JAX project that launched in February during the Super Bowl. Duos Technologies Chairman Gianni Arcaini worked with the Jacksonville Airport Authority to win government funding (a TSA grant) for the project.

Bateh noted that Jacksonville, in many ways, was ideally suited to be a test site for the new surveillance systems. The growing city has a great transportation infrastructure, diverse military presence throughout the metropolitan area and robust federal programs already in place to disrupt drug trafficking along Florida's Atlantic coastline.

JAX received more than \$1.35 million in funding from TSA ([www.tsa.gov](http://www.tsa.gov)) for the test deployment. With TSA assistance in the bank as of July 2004, the next step was finding the right electrical contractor and in the end, Duos gave the nod to ESI.

Although the company did not come in with the lowest bid, ESI was selected for its extensive familiarity with JAX in particular, having already done several related installations at the airport.



The system extends the reach of airport law enforcement with intelligent monitoring features.

### KEY SUPPLIERS

**DUOS TECHNOLOGIES/PYRAMID VISION**—Integrated surveillance system

**L-3 COMMUNICATIONS**—Licensed software

**PELCO**—Closed-circuit television cameras

### PROJECT PARTNERS

**ELECTRICAL-SERVICES INC.**—Lead systems integrator and electrical contractor

**TRANSPORTATION SECURITY ADMINISTRATION**—Project funding

**JACKSONVILLE AIRPORT AUTHORITY**—Owner