

The facility occupies 2,200 acres with a 19.5-mile perimeter and accommodates a total of 139 aircraft and 450 delivery trucks plus a total of 21 buildings. In fact, the facility ranks as the second largest privately owned airport in the world. A small city unto itself, the Wilmington air hub employs a massive workforce of 11,400 employees that can potentially occupy the facility at any given point of any day.

This one DHL location can move thousands of packages in a single day as a result of keen logistics and controls throughout the facility. The process starts when aircraft arrive with cargo containers that hold anywhere from 50 to 500 pieces each. The containers are off-loaded using special equipment and transported to an area where packages are unloaded, placed on conveyor belts and moved to sorting areas where they are re-routed and packed into outbound containers.

Delivering customers' packages on time and intact is DHL's primary business. To best assure that packages make their final destination, one of management's primary objectives is to eliminate package loss, which unfortunately results predominantly from pilferage. With so much traffic and activity at its Wilmington facility, security is a significant issue and concern.

"Securing the perimeter of the facility and the ability to monitor vehicles and people entering and leaving the facility were our primary focal points when designing our new video surveillance system," said Mike Gilpin, Director of Security at DHL. "In addition, we needed cameras to monitor and secure human touch points and package transfer points throughout the facility. Our plan is to have all package movement tracked by our video system when fully implemented."

**THE SOLUTION:  
INTELLIGENT IP VIDEO SURVEILLANCE**

Federal Communications Group (FCG), a systems integrator specializing in security and IT infrastructure, was called upon by DHL to help them design and implement a comprehensive video surveillance solution that could be used for both physical security and business operations applications. "We consulted with the client and they identified the capabilities and performance parameters

# High Flying Solutions

## DHL Protects Customer Confidence With Fully Scalable IP Video Surveillance Solution.

*Implements End-to-End Networked Video Solution At Wilmington Air Hub.*

DHL is the global market leader in international express shipping, overland transport, airfreight, ocean freight and contract logistics. With over 120,000 destinations, 6,500 offices and 450 hubs worldwide, DHL maintains strict controls and business practices to manage the company's infrastructure and help assure that every customer's package

gets delivered to its destination when expected. It's DHL's commitment to customer confidence that has propelled the company's success – and its ability to deliver 1.5 million packages a day.

The busiest air hub in DHL's global delivery network is located in Wilmington, Ohio.

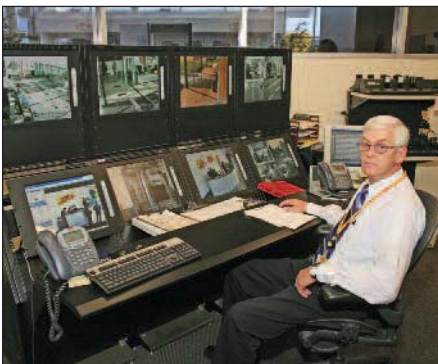
## COVER STORY



DHL's state of the art control room video wall consists of eight monitors with two monitors split into quad screens, all controlled from a single Workstation PC using OnSSI's NetSwitcher touch-screen, dynamic map-based interface.

they desired for their new video surveillance system,” said Eric Johnson, National Account Manager at FCG Group. “One determination that was made at the very earliest stages of this process was that the system was to be completely IP based – fully networked – and we agreed. Mike Gilpin was not comfortable with DVRs and the failure issues commonly encountered with DVRs that could possibly render the cameras useless. Another issue was back-up redundancy. All this could be addressed with the right IP solution.”

FCG's design included an integrated IP video surveillance solution wrapped around a suite of IP video surveillance applications from the leader in IP surveillance solutions On-Net Surveillance Systems Inc. (OnSSI). The proposed system called for high performance



Mike Gilpin, Director of Security at DHL at the centralized IP video surveillance control and command center which employs OnSSI's NetSwitcher IP-based virtual video matrix solution to manage and control the hundreds of cameras placed throughout the facility.

network cameras, network switches and servers operating on OnSSI's platform. As the



Over 200 Panasonic i-Pro IP cameras have been deployed at DHL's air hub in Wilmington, Ohio; many of which are programmed using the OnSSI solution to be activated using motion analytics.

system would also be used to capture images at night and in low-light conditions, the cameras chosen were also required to be capable of reproducing high resolution MPEG and JPEG images and capturing human faces in the most demanding lighting conditions.

FCG's proposal also included provisions for future scalable expansion, distributed camera management, recording and a video delivery system. Video motion detection was also necessary in order to conserve resources on the recording server.

The final site plan and system layout for the facility called for almost 600 IP cameras to be installed in phases and controlled using

NetSwitcher, the IP-based virtual video matrix solution from OnSSI. “OnSSI's NetSwitcher is the critical component in this system because it provides a totally scalable solution with open architecture that's hardware agnostic. As a result, it accepts any IP device, so we are not locked into any manufacturers' devices across any aspect of the system,” said Mr. Gilpin.

Looking to implement a best in breed solution, FCG recommended Panasonic Security Systems' i-Pro network cameras for the DHL project because of their high performance imaging capabilities and superior low-light performance attributes. Images from the Panasonic i-Pro cameras are recorded using OnSSI's solution employing HP blade servers. The IP recording system fully complements OnSSI's NetSwitcher control solution with complete scalability to add recording capacity as the system expands. It also allowed FCG to configure the system with redundant servers to assure continuous operation in the event the primary servers go off-line.

### Network Implementation:

The OnSSI IP video surveillance control and recording solution runs on a shared network at the facility that is carefully fire-walled from all other applications. A separate second network is also employed at the facility just for operations surrounding package handling and routing. DHL's video surveillance system



In addition to providing core security surveillance, many of the Panasonic i-Pro cameras located through the DHL facility are employed for process automation surveillance applications to monitor package shipping and sorting operations using OnSSI's advanced IP management and control solution.

resides on a single-chassis 8 blade HP server array with dual Zeon processors, dual 170GB OS drives, dual NIC cards, fiber channel and an M 1500 Raid controller. Video is stored on 24 300GB SCSI drives for daily storage and 22 500GB SATA drives for extended archiving.

## COVER STORY



One of the main camera surveillance priorities at DHL is the perimeter of the facility and the ability to monitor vehicles and people entering and leaving the facility.

“We worked in conjunction with DHL’s IT department to implement the system on their existing network backbone,” said Mr. Johnson. “When working with IP systems employing this many cameras, it is important to define viewing and recording parameters for each camera so that bandwidth can be properly managed. OnSSI’s IP video surveillance solution also has capabilities and provisions that help minimize bandwidth requirements by providing a great deal of control over camera



Over 95 Panasonic i-Pro IP cameras installed at DHL are allocated for perimeter security and are monitored 24/7 from a centralized control center using OnSSI’s IP management and control solution.

functions such as resolution and frame size and their impact on network bandwidth. We basically use the tools OnSSI provides us to limit the bandwidth to what’s really needed as opposed to just broadcasting cameras over the network. In addition, the motion detection capability provided by OnSSI allows us to push video through the network when it’s

necessary to actually record something, which effectively reduces network allocation and bandwidth usage.”



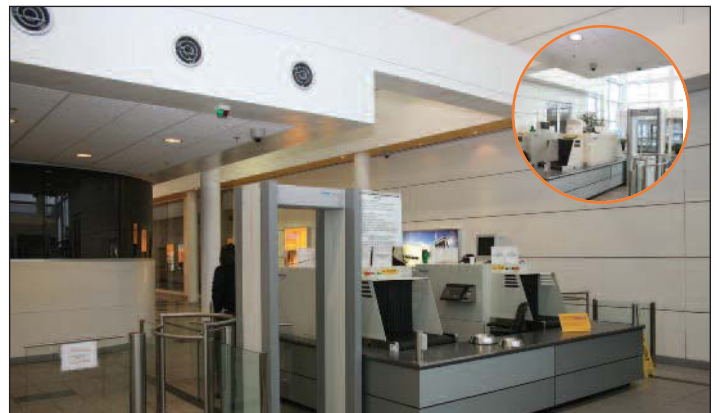
According to Mike Gilpin, Director of Security at DHL: “One area where our new OnSSI IP surveillance system will provide tangible ROI is in detecting damaged packages, as we can clearly see if a package was damaged when it came to us and have the ability to prove it using recorded video.”

View rates and recording capacities for the Panasonic i-Pro cameras have been calculated based on what they are monitoring and the need for archived recordings to be stored. For security surveillance, which is basically defined as any area where people are viewed, cameras are viewed at 15 frames

per second with 3-4 weeks of archive storage assigned per unit. To view operations, which entails monitoring machinery and/or equipment, cameras are viewed at the slower rates of 5-15 frames per second with 0 to 7 days of storage. “We need to employ faster rates for true security applications so we can closely monitor people’s movements,” said Mr. Gilpin. “It is important that the cameras refresh faster so that we have the ability to identify individuals. We keep this information stored longer as well, in the event that we need to go back and view a series of events.”

“Many of the Panasonic i-Pro cameras in the system are programmed using the OnSSI solution to be activated using motion analytics. By employing push technology in areas where we do not need constant surveillance, we can further minimize bandwidth consumption by having the system call up cameras only when the need arises,” said Mr. Johnson. “This also allows us to record these cameras only when there’s activity to record which saves valuable storage space on the servers. OnSSI’s analytics also eliminate the need for security personnel to view inconsequential, non-event streams, resulting in more efficient operations.”

Over 200 Panasonic i-Pro IP cameras have been installed to date at the facility with approximately 95 cameras allocated for perimeter security. Contracted security guards monitor the system 24/7 from a centralized control center using OnSSI’s NetGuard NVR display client. NetGuard manages multiple video streams from programmed camera groupings providing time synchronized playback control, navigation maps for quick access to cameras and database management with events preview. The state of the art control



Panasonic i-Pro cameras provide detailed images to the OnSSI IP management and control solution from pedestrian and vehicle entry and exit points, inside terminal gates and turnstiles where card reader access is enforced, at X-ray machines and metal detector locations, as well as in the parking lot and exterior grounds.



Panasonic i-Pro cameras were selected for the DHL project because of their high performance imaging capabilities and superior low-light performance attributes.

room video wall consists of eight monitors with two monitors split into quad screens, all controlled from a single Workstation PC using OnSSI's NetSwitcher touch-screen, dynamic map-based interface. This configuration provides a total of 14 simultaneous streams,

displaying cameras deployed at five pedestrian and seven vehicle entry and exit points, inside terminal gates and turnstiles where card reader access is enforced, at X-ray machines and metal detector locations, as well as in the parking lot and exterior grounds.



The OnSSI IP video surveillance solution implemented at DHL's Wilmington, Ohio facility has made a significant impact on the shipping and sorting operations at the facility, above and beyond the added security it provides," said Mike Gilpin, Director of Security at DHL.

Mr. Gilpin has the added capability of accessing and viewing the system from his desktop PC in his office over the facility's network. Additional NetGuard remote clients are deployed at the United States Customs division, which also has a number of cameras installed at DHL's facility. "The IP video surveillance solution implemented at DHL's facility has made a significant impact on the shipping and sorting operations at the facility, above and beyond the added security it provides," said Mr. Gilpin.

### Realizing ROI:

One immediate result of DHL's new IP video surveillance system was the break-up of an of six employees and one of DHL's contractors. While still in litigation, two members of the crime ring were fired, while four more were arrested. DHL's IP video surveillance solution helped initially uncover this criminal activity as well as 11 related incidents that would have otherwise gone undiscovered. Aside from its ability to help document crimes, DHL has successfully used its IP video surveillance system to intervene in real-time situations. Since January 2007, approximately six occurrences have been detected and intercepted as they were unfolding with one netting approximately \$60,000 in stolen goods.

"A system like this is a strong deterrent for criminals and helps prevent problems from occurring, and ROI cannot be calculated for events that don't occur," continued Mr. Gilpin. "One area where it will provide tangible ROI is in detecting damaged packages, as we can clearly see if a package was damaged when it came to us and have the ability to prove it using recorded video."

"The integrated IP video surveillance solution from OnSSI has surpassed our objectives," continued Mr. Gilpin. "It has reduced package loss significantly, and has helped improve our operational efficiency as well. We are looking forward to completing the planned system expansion and incorporation of more advanced video analytics."