Airports
Case study book

Raising expectations for airport excellence.

Before, airport video surveillance was a security matter only. Now, with Axis leading the shift from analog to digital technology, multiple airport functions benefit from new possibilities with network cameras.

All cameras, even existing analog, can be connected to the same network where different user groups – security, baggage, retail, airlines, maintenance, ground services, parking, etc. – are granted customized access rights to live and recorded video. With a real-time view of any relevant area of the airport, they can make informed decisions at any time to optimize their everyday work and performance.

A new level of airport security
> Central surveillance in real-time
> Automatic incident detection
> HDTV video quality

Optimized operations
> Minimized waiting times
> Improved passenger flow
> The right service to the right airplane at the right time

New business opportunities
> Live video as a service
> Increased retail revenues
> Improved parking offering

In this booklet, we've gathered examples of how airports around the world have improved their security and daily operations by implementing Axis network video solutions.

Visit www.axis.com/airports for more information.

Airports

Case Studies Book

" Airport security and safety cannot be ensured without installation of an intelligent security system. The integrated digital video surveillance system based on Axis equipment ensures 24/7 surveillance and guarantees the highest security and safety for our passengers. **"**

Dmitry Shmakov, Head of Vnukovo Airport Security Department.

Axis solution implemented in new terminals of Vnukovo Airport.

More than 2,000 Axis network cameras enhance video surveillance in Moscow's famous airport.

Organization:
Vnukovo International Airport

Location:
Moscow, Russia

Industry segment:
Transportation

Application:
Airport safety and security

Axis partner:
EcoProg

Mission

Installation of a highly reliable video surveillance system was needed to ensure a high level of security and process monitoring for the passenger and cargo terminals of Vnukovo airport in Moscow. The total area of both terminals is 327,000 square meters.

Solution

As the Department of Aviation Security was interested in improving counter-terrorism protection, preventing thefts, monitoring production processes and bringing up airport safety and security to a higher level, EcoProg, an Axis partner, successfully created an integrated system, which essentially relied on video surveillance system comprised of 2,100 Axis IP cameras. The project of IT-infrastructure of the "A" passenger terminal of Vnukovo airport, offered by EcoProg, was recognized by Global CIO as the best "Improving IT-infrastructure" solution.

Since 2004, EcoProg has operated as an engineering contractor for Vnukovo airport, and works on creating projects and building engineering communications infrastructure. The Axis solution was selected due to the following evident advantages: image scaling capability and high resolution; widest portfolio on the market; high performance and reliability of the equipment; and the open standard support needed to create infrastructure for highly complex applications.

Result

The result was effective detection of potential incidents or unattended cargos; prevention and assistance in crime investigations or damage of valuable property/ cargo; secured zone access control and surveillance; and the monitoring of production and manufacturing processes, as well highly dangerous machines.

CCTV surveillance

EcoProg installed Axis IP surveillance cameras both indoors and outdoors: checking zones, registration zones, passport and custom check zones, lobby, halls, all entrances and exits, elevators, stairways and parking. The system offers continuous monitoring of all internal and external areas of the airport termina and the network surveillance system adds the following values:

> Stability: if any DVR fails, the system automatically relocates video channels and switches to intact channels
> Reliability: digital video data may be shared over the network or fiber optic, which features longer life and requires no additional equipment
> Noise immunity: no distortions of digital signal transmitted over communication lines; protected fiber optic is resistant even to strong electromagnetic fields
> Future-proof: bandwidth of existent fiber optic lines is sufficient to serve digital video cameras of next generations
> Cost-effectiveness: resource savings due to lower power consumption and less equipment allows to increase archive capabilities of the system

The network cameras operate in pre-recording mode supporting 30-seconds buffer, while intelligent software supports motion detection within field of view of the cameras, virtual cross-line detection, and unattended cargo detection, identification in check zones and registration zones as well as integration with other security systems, including automatic fire-fighting equipment. For instance, if unauthorized persons trys to enter the terminal outside of the checking zone, a cross-line detector automatically triggers video recording and initiates transmission of video and audio data to airport security service in real-time. Recorded video data is stored and can be viewed when needed.

Process monitoring

When the fire alarm system produces an alarm signal, the operator of the fire safety station receives images from the cameras located near the alarm area and evacuation routes. Taking into account the large size of the terminals, the new security system greatly assists in decision-making, differentiation of false alarms and effective evacuation in emergency cases.

For monitoring of elevators, travelators, cargo conveyors and other process equipment, automated workplaces are provided in the Maintenance Dispatch Center. Reliable performance monitoring of this equipment ensures fast response in case of incidents and helps reduce possible negative effects.
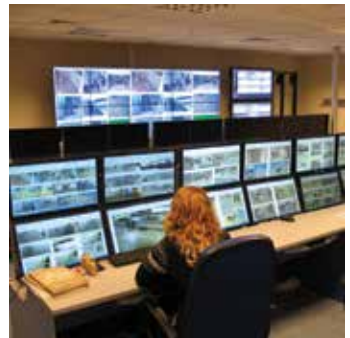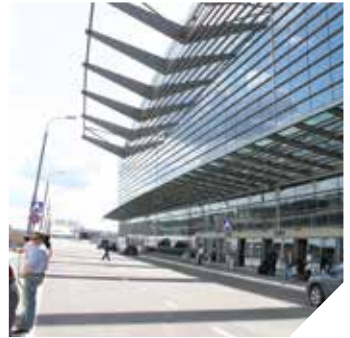
Only flying is more secure.

Terminals 1 and 2 of Munich Airport are equipped with
an elaborate video surveillance system with a total of 1,800 cameras.

Organization:
Munich Airport

Location:
Munich, Germany

Industry segment:
Transportation

Application:
Airport safety and
security, threat prevention

Axis partners:
Alcatel Lucent, Aimetis

Mission

Munich Airport is the 2nd largest airport in Germany and
the 7th largest in Europe in terms of passenger growth
(2009). With about 400,000 takeoffs and landings and
approximately 33 million passengers per year, first-class
security is a matter of prime importance. To enable the
system to be controlled via centralized management
software, all of the cameras must transmit digital images.
Munich Airport therefore equipped about a third of its
cameras with Axis video encoders.

Solution

The European-wide tender for the project was made in
mid-2007, and Alcatel and Lucent were awarded the
contract. As Alcatel's partner, Lucent contributed 800
AXIS Q7406 Video Encoders in AXIS Q7900 racks.

"We had no problems installing the encoders. We had a
telecommunications company that was already working
for us perform the installation. Alcatel Lucent then took
over the task of integrating the hardware into the Aimetis
Symphony software," recounts Michael Fröhlich, Munich
Airport's project manager for closed circuit television.

Result

The new digital video surveillance system simplifies many
processes at the airport. On the one hand, it's a matter of
ensuring compliance with the Aviation Security Act,
which covers border surveillance, support for the security
authorities and passenger checks. On the other hand, it's
also about the simplification of work processes.

"We're very proud that our encoders have been integrat-
ed into such a prestigious project as the Munich airport.
The cooperation with our partners Alcatel Lucent and
Aimetis was flawless," recounts Edwin Roobol, Regional
Manager Middle Europe, Axis Communications.

> "The cameras at the airport allow us to see exactly when the plane lands. Once the aircraft has safely landed, the servicing processes begin, and these processes require adherence to a very tight schedule. The cameras allow us to closely monitor these logistics processes and therefore simplify them."
>
> Johann Götz, Manager, ITN Engineering, Munich Airport.

The airport, located in Erdinger Moos, began operations in 1992, initially with only one terminal. At the same time, work also began on setting up a video surveillance system in which analog cameras were initially used. When Terminal 2 was added in 2003, analog cameras were also installed. However, over time it became ever more apparent that a digital video surveillance system based on a common platform strategy was required. "Our goal was to reduce IT costs and to operate more efficiently. We therefore wanted to integrate voice, data, TV and also video recordings into one platform on one network," explains John Götz, Manager ITN Engineering, Munich Airport.

All digital

The European-wide tender for the project was made in mid-2007, and Alcatel Lucent were awarded the contract. As Alcatel's partner, Lucent contributed 800 AXIS Q7406 Video Encoders in AXIS Q7900 racks. "By conserving bandwidth and storage, the seamless integration between the AXIS Q7406 Video Encoder and Aimetis video management software enables us to minimize costs through the use of the effective network video solution," Marc Holtenhoff, CEO of Aimetis points out.

Simplified processes

The new digital video surveillance system simplifies many processes at the airport. On the one hand, it's a matter of ensuring compliance with the Aviation Security Act, which covers border surveillance, support for the security authorities and passenger checks. On the other hand, it's also about the simplification of work processes.

"The cameras at the airport allow us to see exactly when the plane lands. Once the aircraft has safely landed, the servicing processes begin, and these processes require adherence to a very tight schedule. For example, to service an aircraft, a stairway for the disembarking passengers must be brought to the aircraft, all passengers must disembark, their luggage must be unloaded, the aircraft must be cleaned, and fresh food and water need to be brought on board. Many more tasks need to be completed before the aircraft can roll back for the next takeoff. The cameras allow us to closely monitor these logistics processes and therefore simplify them," explains John Götz.

Flughafen München

Alcatel·Lucent

aimetis

IP-based security takes off at Montana airport with Axis.

Bozeman Yellowstone Airport chooses Axis cameras and exacqVision video management system (VMS) software for terminal expansion security solution.

Organization:
Bozeman Yellowstone International Airport

Location:
Belgrade, Montana, USA

Industry segment:
Transportation

Application:
Airport safety and security

Axis partners:
Video and Sound Service, Inc., exacqVision

Mission

Bozeman Yellowstone International Airport in Belgrade, Montana connects travelers with southwestern Montana, Yellowstone National Park and Big Sky ski resort. In the midst of record growth, the airport launched an expansion and renovation project. At the time of the expansion, they relied on analog technology for video security, but they were driven to upgrade to an IP-based system to complement the forward-thinking redesign.

Solution

Jacksonville, Florida-based infrastructure design consultant RS&H recommended Axis network cameras to complement the exacqVision Enterprise VMS software and RS2 Technologies access control being installed by Illinois-based systems integrator Video and Sound Service, Inc. The Axis cameras were chosen because of their ability to seamlessly integrate with the VMS and access control, as well as their high quality images, solid construction and high reliability.

The airport installed AXIS P3344 Fixed Dome Network Cameras over entryways, outdoor-ready AXIS P1344-E and AXIS P1347-E Network Cameras for external security, and AXIS 233D pan/tilt/zoom (PTZ) Network Cameras for support in the terminal and other areas.

Result

With the launch of the IP video security solution, Bozeman airport has set a course for the future. The IP-based system makes it easy for the public safety officers to monitor multiple feeds at once and keep watch over the entire airport, indoors and out. The airport is able to use its resources more effectively, and it has greater control over video and who can access it. The system has helped make the airport more secure as it continues to grow.

Redesigning airport security

Starting in 2010, Bozeman Yellowstone International Airport in Belgrade, Montana began setting new passenger records each year, and they soon became the most visited airport in the state with almost 900,000 passengers coming through from June 2012 to May 2013. In the midst of this boom, the gateway to western Yellowstone National Park, Big Sky Ski Resort and southwestern Montana launched a $42 million terminal expansion project to add another three gates, 125,000 square feet of new space, and a host of other amenities.

As part of the expansion, Bozeman decided to overhaul its outdated security system. Previously, they relied on analog cameras and DVR-based storage, but Illinois-based systems integrator Video and Sound Service, Inc. and infrastructure design consultant RS&H developed a plan to upgrade the entire analog system to state-of-the-art IP-based technologies.

They took advantage of the open API platform offered by Axis cameras to create a fully integrated IP solution with exacqVision Enterprise VMS software and RS2 Technologies access control.

"IP cameras and IP-based video management are essential to the needs of a modern airport facility," said Andrew Lee, Senior Aviation Designer for RS&H. "IP-based systems allow different users the ability to access and utilize the system, as well as provide quality, high resolution images."

IP on the ascent

From their command control center, the public safety team led by Public Safety Chief Bill Dove can keep a vigilant eye over all areas of the airport, indoors and out. HDTV 720p-quality AXIS P3344 Fixed Dome Network Cameras with WDR and digital zoom were installed overlooking all locked entryways inside the airport.

Outdoor-ready AXIS P1344-E and AXIS P1347-E Network Cameras were chosen for external security at the Rocky Mountain-area airport. Both can withstand temperatures as low as -40°F/C and are built to resist rain, sun, snow,

and dust. They both offer automatic day/night functionality and AXIS P1347 cameras leverage P-Iris technology to provide better contrast, clarity and depth of field in up to 5 MP/1080p HDTV resolution. AXIS 233D pan/tilt/zoom (PTZ) Network Cameras with 35x optical zoom were installed throughout the terminal, airport apron and parking facilities to provide additional support for the public safety team.

"We can zoom in even from a distance, and still have a clear, sharp picture," Public Safety Chief, Bill Dove said. "We can also put [the Axis camera] on guard tour and sweep an area if we choose."

User-friendly software support

In total, the airport has installed 150 IP cameras throughout the facility. The feature-rich exacqVision client provided the perfect complement to the crisp, high resolution images produced by the Axis cameras. With exacqVision, safety officers can view multiple streams at once, and the VMS is set to automatically display the video feed when cameras' monitoring the doors detect motion through the exacqVision video wall virtual matrix switching. Video can be easily extracted and shared with airport administrators and law enforcement officers, and safety officers can set access privileges so airport officials and members of the Transportation Security Administration (TSA) can view specific footage directly. The free exacq Mobile app allows safety officers to view and search video on their smartphones anytime.

The video even helps passengers locate lost or misplaced luggage. In one instance, two passengers noticed they had the wrong laptops after being screened by the TSA. Public safety officers were able to quickly determine they had switched bags after reviewing the video. The video support also helps the airport use their staffing resources more efficiently.

"We can determine whether a response is necessary or not," Dove said. Overall, the system "is a far cry above what it was."

El Dorado International Airport bolsters security with more than 700 cameras.

Colombia's most important air terminal integrates video surveillance, fire safety and biometric security access reader systems.

Organization:
Opain S.A. (El Dorado International Airport)

Location:
Bogotá, Colombia

Industry segment:
Transportation

Application:
Airport safety and security

Axis partner:
Johnson Controls

Mission

El Dorado International Airport, retaining its original location in Bogota since opening in the 1950s, has become one of the most active airports in the world, handling more than 22 million passengers and 650,000 tons of cargo per year.

Growth in airport traffic there has resulted in a decision by Opain, SA, the airport's administrative authority, to develop a project that will create the largest, most modern transportation facility in Latin America. The project calls for the inclusion of a state-of-the-art video surveillance system offering improved security for passengers, cargo, employees and all of the airport's assets.

Solution

Given its experience with this type of project, Johnson Controls, an Axis partner, was chosen to install Metasys software to provide integrated control of video surveillance, fire and security access control systems in one platform together with existing ones for the monitoring of luggage areas, hallways, staircases, elevators, etc.

During the first phases of the project, more than 700 Axis network cameras were installed including AXIS Q6035-E, AXIS Q6032 and AXIS P3343, along with AXIS M7001 Video Encoder. These cameras have significantly improved the tracking of moving images, eliminated blurred edges, and they provide video in a secure digital format.

Result

The security team uses the video analysis tool for intelligent monitoring of the airport. As a result of great improvement gained from the first phases of the project, the implementation of further stages using Axis cameras is now being considered.

Video analysis

All of the cameras store 15 days worth of 24-hour video coverage. This preserves the recordings and allows access to the video in real time to provide immediate feedback on situations.

"It allows us to perform video analysis, a very useful tool in security work", explains Susana Vargas Herrán, Director of Communications at Opain.

"Our experience with Axis cameras has been very positive. Features like progressive scan mode and data entry significantly improve the quality of moving images, eliminating blurred edges with no loss of signal. And it transfers the video in a secure manner by encrypting data", said Susana.

Welcome to Colombia

Julia Piedad Gomez, Director of Technology at Opain, the airport's administrative authority, says that the integration of so many varied systems was designed to improve traveler experience and bring El Dorado International up to the standards of a world-class airport.

"For many international passengers, El Dorado will be their first exposure not only to Colombia, but to South America", she said. "We want our visitors to benefit from the high level of technology being used for their comfort, convenience and security. This terminal is a symbol of the growing importance of our country in the global economy, and especially in the Americas."

The remodeling of El Dorado Airport and the expansion of facilities and runways has been made possible due to an approximately $4 million investment, and it has gained the support of government entities.

An intelligent video surveillance system for Aéroports de Lyon.

Thanks to Axis Communications IP video, Lyon's Saint Exupéry Airport is able to estimate wait time at access control points and inform travelers.

Mission

Saint Exupéry Airport is the third largest in France. With over 8 million passengers in 2011, it can accommodate up to 32,000 travelers per day. In an effort to constantly improve its service quality, the airport wanted to set up an intelligent video surveillance system to give passengers more information as they move around, including the wait times between security checkpoints and in departure lounges.

Solution

Aéroports de Lyon was seeking a reliable, autonomous solution. The company thus approached several specialists. The airport's consultations led to a number of equipment and software solutions, which were studied closely for three months. Foxstream recommended a solution based on Axis network cameras, with software developed by Foxstream's own engineers that analyzes and process images automatically and in real time.

Result

Close to 50 network cameras were installed, and it took three months to test and adapt the installation from a technical and architectural standpoint. Aéroports de Lyon is very satisfied with the solution.

"This solution based on IP video and image analysis has allowed us to flesh out the details of our project and to perfect operations at the airport. Beyond the satisfaction of the passengers that we achieve, we can see that it is a daily work tool that allows us to enhance our organization and assist our development," said Frédéric Besson, the airport's Information Systems project leader. Looking forward, Aéroports de Lyon may plan to deploy the same equipment at arrivals control booths.

Optimizing the infrastructure

With the number of passengers growing daily, Lyon's Saint Exupéry Airport is trying to enhance its infrastructure in order to make life easier for passengers by giving them more information while they are in the airport, particularly regarding wait times at security checkpoints and in departure lounges. The airport identified the wait times leading up to access control, and the duration of the control itself, as potential stress factors for passengers, or ones which simply lead to poor management of time spent in the terminals.

The challenge was to find a reliable solution that estimates crowd flows and the expected time spent from the moment of joining the waiting line to passage through the metal detectors, and informing the travelers. At the same time, the airport did not want a solution that required large numbers of staff or substantial equipment and maintenance liable to disrupt operations. Aéroports de Lyon chose to use IP video, backed by a software solution developed by Foxstream. Foxstream chose Axis network cameras since their characteristics could be controlled so as to minimize the technical risks of the project.

A solution combining appropriate equipment and software

Two types of cameras were installed to monitor airport checkpoints. AXIS M3203 Network Cameras are set in fixed compact domes, perfectly adapted to institutions that require discreet surveillance in a spacious indoor environment and which have exceptional image quality and high-resolution progressive scan. The second were AXIS 216MFD Network Cameras, which offer high performance megapixel images. They offer numerous adjustment possibilities: panorama, tilt, and rotation of the varifocal lens according to the desired angle. These cameras were matched with the Foxstream software solution, which performs three different functions for wait time: measuring the number of persons in the line, the outgoing flow, and taking into account the number of open checkpoints.

In the transportation sector, video surveillance can improve day-to-day service as well function as a security tool. IP video can also be useful to corporate users, such as to ensure and improve the management of their activities.

"This solution based on IP video and image analysis has allowed us to flesh out the details of our project and to perfect operations at the airport. Beyond the satisfaction of the passengers that we achieve, we can see that it is a daily work tool that allows us to enhance our organization and assist our development," said Frédéric Besson, the airport's Information Systems project leader. Looking forward, Aéroports de Lyon may plan to deploy the same equipment at arrivals control booths.

Foxstream – www.foxstream.fr
Created in 2004, Foxstream is a publisher of software solutions that allow automatic and real-time analysis and processing of video image content. The company specializes in the area of video surveillance and the security of goods and persons. It provides assistance with surveillance in order to increase the efficiency of existing systems while at the same time reducing operating costs.

Roiret Transport – www.roiret.fr
Roiret Transport, a subsidiary of Vinci Energies, is well-established in the Lyon region. It provides expertise in centralized technical management, in low-current and high-current equipment, in security systems, and in communications systems, all applied to inter-urban transport (subways, streetcars, trolley buses), airports, parking lots, and the TER lines of the French national railroad.

Lyon–Saint Exupéry Airport
In 2012, the Lyon-Saint Exupéry Airport will receive more than 8.4 million passengers, growth of approximately 6% compared to 2010. Currently the third busiest airport in French and the major airport in southeastern France, it offers more than 120 direct destinations and transfers throughout the world through numerous connections to the largest European hubs. It is the only French airport to have received the Best European Airport Prize, 5 to 10 million passengers category, on two occasions (2008 and 2010).

Axis fully safeguards parking lot at Shuangliu International Airport, Chengdu.

Organization:
Sichuan Airport Group Co., Ltd. (Chenghu Airport)

Location:
Chengdu, China

Industry segment:
Transportation

Application:
Safety and security, entrance and exit monitoring

Mission

Shuangliu International Airport in Chengdu is the fourth largest air hub in China and the busiest hub airport in Central and Western China. Since its founding, Shuangliu International Airport has been listed as one of China's top ten busiest airports, and has maintained a record of zero flight or ground accidents.

Terminal Building T2 of Shuangliu International Airport maintains a total area of 500,000 square meters, 146 aircraft stands, and 74 boarding bridges, making it the largest terminal building in Central and Western China. It is estimated that its annual passenger throughput will reach up to 38,000,000 people.

The parking lot in front of Terminal Building T2 of Shuangliu International Airport, Chengdu is the ground traffic center. It maintains a gross floor area of approximately 180,000 sq. meters, 9 different zones as well as 1,519 parking lots for cars, 84 parking lots for tourist buses, 288 parking lots for taxis, and 40 parking lots for public buses.

The parking lot is divided into car and bus parking areas, overnight parking, and barrier-free parking with 9 incoming and 14 outgoing passageways, providing nearly 2,400 parking spaces.

In order to improve management efficiency and reinforce safety, the parking lot needed to deploy a new network video surveillance system. Taking into consideration the great many incoming and outgoing vehicles, people from both inside and outside, and safety and security issues, the front-end cameras were expected to provide HDTV images in a highly efficient and stable manner, to enable round-the-clock surveillance over the area, and work within the lighting and temperature conditions.

Solution

The solution was to offer the best price-performance ratio with the optimal design based on the specific situations of T2 plaza. The project was designed mainly on the basis of "high quality" and "high intelligence". Axis' fully digital network surveillance system was thus adopted to address the general layout of the T2 plaza and the actual situations on the site.

In the entire parking lot, 210 Axis HDTV network cameras were deployed. Out of these, AXIS P1344 Network Cameras and AXIS P3364-V Dome Network Cameras ensure image recording in real time round the clock, offering HDTV 720p resolution, stylish visual appearance and the ability to beautifully integrate with the installation environments. The outdoor-ready AXIS Q6035-E high-speed dome network camera offers HDTV 1080p images, compliance with SMPTE 274M, as well as support for 1920x1080 pixel resolution, full frame rate, HDTV color fidelity and a 16:9 format. This day/night camera simultaneously provides multiple H.264 and M-JPEG video streams. Further, it features 20x optical zoom and 12x digital zoom, coverage of wide area, and great details when zooming in.

Result

The new system uses a large number of Axis HDTV network cameras, with high quality images that help improve the visual management efficiency of the parking lot. Axis network cameras offer PoE/High PoE support. Only one cable is required for power and video transmission, and there is no need for separate control or power cables, thus reducing wiring costs by 70%. The surveillance solution provides the ability to fully address the users' needs, fully providing a high-performance security solution.

Building an intelligent airport in Donetsk, together with Axis.

Axis IP cameras help make A Class airport security system more effective and safe.

Mission

At the turn of the 21st century, Donetsk, Ukraine, faced the question of building a strategic aviation facility in the Eastern Europe able to accept all types of aircrafts and to provide high quality service. The local authorities made the decision to realize large-scale reconstruction of Donetsk Airport which became an object of strategic importance within the frame of preparation to UEFA EURO-2012 in the Donetsk region. Main objectives set before the modern system of monitoring were as follows: operative surveillance over protected area, buildings and premises, use of access control with the system, possibility of video feed from cameras to computer monitors of the authorized employees via local network as well as Internet, and full personal identification under ISO/IEC 19794-5:2005 Standard.

Solution

Installation of the video surveillance system was entrusted to the system integrator, DICS. After thorough investigation of the security video surveillance market, DICS specialists decided to realize this system based on Axis cameras meeting all requirements of the project and efficiently interacting with the Milestone XProtect® software. IQ Trading - the official distributor of Axis Communications and Milestone Systems in Ukraine was a supplier of equipment and software for this project. About 600 Axis network cameras were installed to cover the airport, as well as around the perimeter.

Result

The installation of the security system based on Axis cameras provided Donetsk Airport with a modern and qualitative system satisfying all requirements of the A Class airport. Donetsk Airport can easily set up the security system depending on its current needs, getting access to more and more detailed information, which allows control and answers to questions as they arise.

> **"Thanks to the video surveillance system based on Axis cameras, Donetsk International Airport can duly and to a good quality satisfy needs of its passengers and employees. Now reliability and efficiency indicators exceed similar indicators of the leading airport terminal complexes."**
>
> **V. M. Shinkarenko, Deputy Director General on Aviation Security, Donetsk S. S. Prokofiev International Airport.**

Solution for the airport terminal complex

In April 2012, before hosting UEFA EURO 2012 in the Donetsk region, the A Class aviation complex was opened, able to process up to 3100 passengers per hour and freight storage per 300 tons. It is natural that a high-quality security system was required for such a large-scale complex.

Axis megapixel cameras are being used in the main areas of the airport terminal complex and operators of the system can promptly react to any incidents and, if necessary, additionally use PTZ functions of the Axis cameras to obtain more detailed images.

Two systems of video surveillance were installed in the airport terminal complex: one for the Aviation Security Service and the other for the Border Control Service. The systems are independent, but at the same time they are integrated to control general areas and to solve similar issues.

A video wall of 10 monitors was installed during the project as well, and surveillance operators can promptly react to any incidents and identify violations involving both passengers and employees. 10 working places are distributed throughout the airport terminal complex.

Integration with other systems

First, it was decided to integrate the video surveillance system and access control system from Dorma using software from WinGuard.

Integration of the video surveillance system and access control system provides passive monitoring of the protected areas, as well as properly preventing unauthorized persons activating automatic doors, turn gates and other equipment of the access control system. It is also possible to pinpoint all events on video, and then store images in the data archive and, if necessary, produce them quickly at any time.

Integration of the video surveillance system with the fire and security alarm is also in progress. Operation of the fire fighting system sensors is securely duplicated due to Axis cameras capable of recognition of smoke, fire and other risk factors. It is possible to realize evacuation of people and provide quick response from emergency. In addition, the system allows vehicle license plate recognition to ensure traffic control and integration with the parking system.

Krakow Airport safe thanks to Axis solutions.

Modernization of surveillance system provides high level of passenger service and safety.

Organization:
Krakow-Balice Airport

Location:
Krakow, Poland

Industry segment:
Transportation

Application:
Airport safety and security

Axis partners:
DG ELPRO, Milestone

Mission

The mission of Krakow Airport is to achieve a leading position among European regional airports, taking care of the high level of passenger service and satisfaction. The company's activities include the development, modernization and operation of the International Airport Krakow-Balice and to take all actions related to the operation of passenger and freight air traffic, including international border crossing in the port, in order to promote Krakow and the region. The Board of Directors relies on proven technologies in order to support the airport, including the video surveillance system guarding the safety of passengers and Krakow Airport staff.

Solution

Axis partner, DG ELPRO in cooperation with KABE Systemy Alarmowe; PKiMSA CARBOAUTOMATYKA S.A and FRB Inter-Bud took part in concept development of the modernization and digitization of the video surveillance system of Krakow Airport. The process took place in four stages. The first one, which was also the test stage, was to create a next-generation surveillance system for a newly created multi-story car park.

A seemingly simple task turned out to be a challenge for installers, engineers and equipment. Parking levels were poorly lit and there was continuous movement of vehicles whose lights were blinding the camera. The next three stages of system design were carried out at the same time. The existing analog video surveillance system had limitations and did not have the variety of possibilities as a system based on IP technology. On the other hand it was an extended and costly system, in which image quality was sufficient in some areas. Changing the system to a entire brand new one would involve unnecessary costs and enormous effort. Therefore, an economically justified decision was made: to modernize the system and adapt it to IP. For this purpose Axis video encoders were used.

Result

Axis devices, thanks to their extensive configuration options and innovative features made possible the acquiring of satisfactory images.

> "When choosing a solution tailored to the Krakow Balice Airport requirements, we had no hesitation in choosing a technology partner. We have worked with Axis Communications for several years and we are aware of the advantages of the manufacturer and technical capabilities. For us, the most important is customer satisfaction, with a stable and open platform from Axis we have no doubt that we made the right choice."
>
> Krzysztof Durlak, CEO, DG ELPRO.

High dynamic cameras allow the capture of every incident in the parking lot. Adjacent areas were also observed from the building. PTZ cameras were used with a very precise mechanism and excellent optics. To store video, a Milestone software platform was selected. For safety reasons video is registered remotely, away from the parking lot in an exclusion zone. Images processed by Axis cameras in comparison to other considered solutions occupy quite small amounts of bandwidth, thus making it possible to minimize the required amount of memory allocated to the archive.

Axis video encoders were used to digitize the existing analog system; images were converted to digital and sent to the Milestone registration system. The old system remains intact and acts as a reserve. Digitization has allowed increasing the possibility of exploring the archive and management. It has also provided the opportunity to create a virtually unlimited number of supervision positions for eligible employees.

The challenge for airport workers and installers was also guarding the airport apron. Cameras must watch the huge area, often in difficult conditions, providing detailed images 24 hours a day. A similar problem concerns a fence: long distance and difficult lighting conditions at night.

The chosen solution met the defined expectations of management and partner competency resulted in a successful implementation.

"We are very pleased with this project. We were able to leverage existing investments in the analog system and go to the next level with a digital surveillance system that offers us endless possibilities for the future. In addition, thanks to digital surveillance system, we feel that our staff and passengers can feel really safe. The new tool allows us early detection of incidents and proactive response, "says Ursula Podraza, spokesman for Krakow Airport.

About DG ELPRO
The company operates in the market of automation and security since 1990. Based on the modern world technology provides devices and systems in the field:
> BMS building automation system
> Smart building EiB
> Property protection
> Structured cabling, video conferencing systems, audio-visual and sound systems

DG ELPRO offers its customers full range of services started from consulting, projects through completion and delivery of equipment, installation and start-up to the final transfer of the object. The company implemented the quality management system ISO-9001: 2000 in 2001. The certification audit was carried out by TUV-Germany and confirmed by certificate number 12 100 15300 TMS.

The company has also obtained a license of Ministry of Internal Affairs and Administration, and the employees are licensed as I and II degree technical protection workers. DG ELPRO also has powers for design and construction in the field of plant design, management and supervision of construction works. It has certified many manufacturers and distributors of the offered systems.

Axis network cameras monitor flight safety.

Axis cameras ensure aviation safety at Sheremetyevo International Airport.

Mission

Ensuring the safety of passengers and visitors is Sheremetyevo Airport's number one priority, which is why it devotes significant energy and resources to developing a video surveillance security system. In doing so, it is essential to be able to integrate new equipment into the existing infrastructure.

In addition to enhancing security functions, the airport is also developing an integrated surveillance system for monitoring passengers and operational processes aboard aircraft.

Solution

The existence of a sophisticated network infrastructure makes it essential to develop a video surveillance security system. The most important features required are integration capabilities, image quality, simplicity of servicing the equipment, and further scalability. Based on these requirements, Axis cameras were chosen in conjunction with the system integrators.

Currently, there are approximately 200 Axis cameras installed at the airport terminals, namely consisting of the following models: AXIS 209FD, AXIS 211, AXIS 215 PTZ, AXIS 216FD, AXIS P1343, AXIS M3203, AXIS M3204 and AXIS Q6032.

Result

To meet the security requirements of a modern airport, a reliable system that operates 24/7 was installed and is used both in security systems and operational process control systems. In essence, currently there are two independent systems operating at the airport, a security and an operations processing system, which operate simultaneously using a single camera system.

Sheremetyevo International Airport is Russia's largest and busiest airport based on the number of regular international flights operating there. Sheremetyevo is recognized as the best airport in Europe, in terms of the quality of passenger service, based on 2012 results of the reputable ASQ (Airport Service Quality) program run by Airports Council International (ACI).

Sheremetyevo Airport is the country's largest aviation transport complex in terms of area (six passenger terminals covering a total area of approximately 124 acres). More than 26 million passengers use the airport each year.

Sheremetyevo closely monitors the level of security to ensure that the airport is run efficiently. There are now more than one hundred modern systems installed at the airport to provide security and manage business processes, and to monitor quality assurance, operations and human resources. To this end, the video surveillance system plays a significant role since, used in conjunction with a multilevel automatic luggage inspection system, it enables programming the settings in order to detect potentially dangerous items.

Video surveillance, security and more
Sheremetyevo is developing a single transport network infrastructure with the capacity to accommodate large volumes of traffic and the possibility of further upgrading its video systems. To achieve this aim, the airport has carefully selected the specific IP solutions it requires for its video surveillance infrastructure.

Ever since the airport first began using video surveillance, it has served not only as a security system, but also as a means for controlling operations such as check-in, boarding, luggage loading control, etc., at all stages of aircraft servicing.

In this way, a comprehensive infrastructure has been created: IP cameras generate a single video stream, which is then processed by two systems (security and operational) according to required tasks and algorithms.

A large archive with a rapid search functions, video analysis capabilities, and integration of the video system with other elements of the security infrastructure is important.

The ability to monitor the various technical processes relating to passengers and aircraft services, in real time and using various mobile platforms, is a very valuable feature of the surveillance system.

Axis equipment has proven to be a reliable, flexible and functional solution in meeting this objective.

About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 1,600 dedicated employees in more than 40 countries around the world, supported by a network of over 65,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ OMX Stockholm under the ticker AXIS.
For more information about Axis, please visit our website www.axis.com.

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