On guard for Saint Isaac's Cathedral.

Integrated security system for Saint Isaac's Cathedral based on Axis IP cameras.

Organization:
Saint Isaac's Cathedral

Location:
St. Petersburg, Russia

Industry segment:
Government

Application:
Safety and security

Axis partners:
NvC-it, Soft-Tronik Ltd., Cisco, VIT-Center

Mission

One of Saint Petersburg iconic landmarks - the creation of the great Montferrand - Saint Isaac's Cathedral is located at the heart of the city attracting thousands of visitors daily (over three million in 2018). Any illegal actions and incidents even in the vicinity of the museum are totally unacceptable. Any incidents inside the museum alert the whole city, since the exhibition and interior of the museum are virtually priceless. Therefore the security system is designed to protect the historical building of the cathedral and museum art objects as well as to prevent terror attacks, property abuse, illegal actions, thefts, robbery and delinquency. The integrated video surveillance system prevents various illegal actions in real time: it responds to triggering motion detectors and enables the security staff to monitor the situation. The high quality video records can be used for further investigations and serve as a forensic base in legal institutions.

As a global cultural heritage, the Cathedral with its unique interior decor, sculptures and numerous museum collections apart from thick walls also needs an advanced video surveillance system to protect it. The major objective of the project was to create a comprehensive security system, involving an integrated video surveillance system. The height of the Cathedral, its historical interior as well as its observation deck and extensive basement network made this project even more challenging.

Solution

Axis IP cameras that replaced the outdated analog video cameras produced by various companies were used to cover the area of Saint Isaac's Cathedral. A wide range of equipment made it possible to select suitable models not only in terms of their functionality, but also by size and appearance and became one of the reasons for using Axis network cameras.

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The cameras were installed all over the enormous cathedral - in the halls, under the dome, in the staircases, on the roofs, in the basement, on the guard rails and colonade as well. Apart from that, the outbuildings around the cathedral, front offices and security checkpoints at the entrance, were also provided with a large number of cameras. According to regulatory requirements, part of the cameras were painted to match the color range of the cathedral interiors. The data communication network is based on Cisco Systems hardware with PoE injectors and PoE extenders by Axis Communications.

Result

Axis video cameras provide 24/7 surveillance of the adjacent areas, exits and entrances at every level of the building, public areas and the most challenging spots. The access to online monitoring system and video archive is granted to security service staff, the guide department and museum administration staff. In the years to come, the security system installed at Saint Isaac's Cathedral will become a part of a larger project that combines several cultural institutions of Saint Petersburg into one video management system.

Project features

It is always an interesting challenge to install a video surveillance system at the site under the patronage of Committee for State Control, Utilization and Protection of Historical and Cultural Landmarks, since selecting camera installation spots, routing method and area is not only about convenience, but also about preserving the exterior of the building. Therefore, each step must be approved in advance. For the cameras to reach top performance and protect them from damages the experts of NvC-it used their skills and ingenuity to involve a wide range of technical solutions: special materials that need no wall drilling, brackets or clamps.

Effective use was made of the mounting spots remaining from the previous cameras, e.g. near the sculptural group on the roof. In this case instead of two analog cameras only one IP camera with a wider viewing angle was used.

Depending on the video surveillance goals, vertical or horizontal dome cameras, bullet cameras or PTZ cameras were installed. The latter allow security officers to examine objects in full detail and thus investigate various incidents, for example, when searching for the owner of an unattended bag or phone. Apart from this, the security staff can now easily recognize the face of an intruder in details, e.g. for his further identification.

Camera functionality and future expectations

Outdated analog video surveillance system using cameras from different vendors was substituted with a state-of-the-art digital video surveillance system that is more convenient in terms of integration and administration of the VMS. The image quality on the screens of security service also significantly improved, that is especially important for monitoring the areas with restricted access.

IP cameras installed at Saint Isaac's Cathedral are managed by TRASSIR software. The video management system ensure data storage on the server, archiving video, search functions and access control for employees. Some of the cameras support scheduled recordings and recordings triggered by motion detection or an alarm. At nighttime apart from the external or internal lighting cameras can also use IR lighting in order to improve the image quality. The video cameras also support wider functionality such as, face recognition and perimeter detection and more.

Currently the museum officials are considering the transition to IP-cameras and TRASSIR integration of the last remaining analog system - turnstiles video surveillance system. Looking globally the security systems at several sites under the jurisdiction of administration (several museums and administrative buildings) are planned to be merged into a single integrated video surveillance system.

Why Axis?

Integration of the video surveillance system into historical interiors hits many technical and administrative roadblocks. Hardware operating conditions are far from perfect, since it's not always possible to install a camera in such a way as to provide the appropriate light conditions. Nevertheless, high-quality image, low-bitrate video stream requiring minor network bandwidth and, beyond doubt, highly reliable equipment are of top priority. Low maintenance costs and energy consumption is also something to be kept in mind since they contribute to more savings. Axis cameras feature all the aforementioned characteristics that won over the city of St. Petersburg.

"Having investigated the video surveillance market we came to the conclusion that Axis equipment gives us the best opportunity to effectively meet the requirements of the customer to record quality, zooming and scaling capabilities, defining camera coverage areas and other features of the future system. Due to Axis wide equipment range we easily designed the video surveillance system using different types of cameras not only suitable by its features, but also by appearance – which is critical for a cultural heritage site."

Kirill Sinkov, NvC-it.

"We never regretted the choice we'd made. The entire video surveillance system operates consistently and reliably. Axis cameras deliver high-quality image even in challenging light conditions - at night or against the sun - bringing everything and everyone to light. With user-friendly system and archive as well as searching mechanisms we can quickly find any necessary video segments."

Museum management department employee

About Axis Communications

Axis enables a smarter and safer world by creating network solutions that provide insights for improving security and new ways of doing business. As the industry leader in network video, Axis offers products and services for video surveillance and analytics, access control, intercom and audio systems. Axis has more than 3,800 dedicated employees in over 50 countries and collaborates with partners worldwide to deliver customer solutions. Axis was founded in 1984 and has its headquarters in Lund, Sweden.

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