Project reference

Barcelona Metro

Customer
Transports Metropolitans de Barcelona (TMB)

Technology
Hybrid video network using IP, fiber, and analog technologies

Market
Transportation - Transit

Challenge
Work with the Barcelona Metro authorities to design, implement, and upgrade a video surveillance system

Solution
Siqura Codecs
Siqura recording solutions
Siqura fiber optic transmitters and receivers

Making sure daily operations run smoothly

Although the Barcelona Metro (Transports Metropolitans de Barcelona, TMB) surveillance system has on occasion helped police to catch an organized group of thieves, crime was not the reason TMB started installing cameras twelve years ago. With over one million people traversing the city each day on TMB trains, with stops at more than 100 stations, Barcelona's Metro authorities needed to make sure that things were running smoothly and safely and that commuters could get where they needed to go.

The first phase of the project entailed installing an analog CCTV system throughout twenty metro stations. Each station contained eight cameras and a small compartment for an operator, who viewed the live streams locally on two monitors. The footage of each camera was recorded twenty-four hours per day and saved on a digital video recorder (DVR) for a period of three or four days.

The system proved itself a success. It streamlined daily operations and helped to combat delays allowing prompt response times to serious incidents. TMB therefore decided to instigate a second installment phase: The system would come to comprise thirty cameras. Naturally, this was too much for just one locally-based station manager, and alternative solutions were sought.

The maturation of effective metro management

One of the first things that TMB did, in addition to increasing the number of cameras in each station, was to enhance their central control room with a customized video management system (VMS) and matrixes of screens for viewing video. The control room would contain one area for viewing live video and one for examining recordings. In this way, operators and security personnel would be able keep a close watch on the operations and safety of the Barcelona Metro.

TKH GROUP SIQURA®

Due to the fact that recording the public in metro stations and saving it for a few days might make images vulnerable to misuse, TMB decided to enlist the help Indra Sistemas, S.A., Spain's leading information technology (IT) company. In order to offset the possibility that images could be leaked to the public or tampered with, Indra was commissioned to create a customized VMS that would encrypt the camera images and make it impossible to freeze them. This VMS system thus has come to help protect the public from the potential abuse of the TMB surveillance system while at the same time enabling the metro system to run more smoothly for commuters.

Another major improvement that TMB made to their system was to make their station managers mobile. Through the use of personal digital assistants (PDA), the once stationary operators are now able to receive camera footage and instructions from the central control room about the location and nature of various incidents in metro facilities. Traveling in pairs, these impromptu personnel can promptly address problems and make sure that trains are running smoothly and that people riding the metro are safe.

Evolving into IP
Throughout the course of this surveillance system project, technology has, of course, continued to advance,
and TMB was determined to keep pace with the times. Therefore, as TMB restructured and expanded its surveillance system into a larger and more complex network, it also started looking into what kinds of technology would best suit its needs.

TMB wanted, for example, to continue to record all of its camera footage twenty- four hours per day and store the images for three or four days.Yet with around 3300 cameras throughout the city, it became all too clear that the system had outgrown its analog DVR apparatus.

In an effort to maintain a state-of-the-art system, TMB sought the most superior IP recording solution for the application and, in the end, found the Siqura i-NVR to be the best recorder for the job.

Working together to guarantee optimal performance
Although the Siqura i-NVR would come to record the footage of the metro's multitude of camera streams, Siqura solutions were not unfamiliar to TMB. From the very beginning of the project, fiber optic transmitters and receivers from Siqura, a supplier of advanced IP and fiber video surveillance equipment, were used for streaming data and video. These fiber solutions had been shown to reliably provide quality video in each station, and TMB expected the same from the Siqura i-NVR.

Consequently, TMB and Siqura have continued to work closely with each other over the years to expand and update the Barcelona Metro surveillance network. Eventually, as TMB moved increasingly towards IP solutions, it also incorporated Siqura encoders into its system to transmit IP streams. Business relations such as this as well as that between TMB and Indra are integral to making sure that a surveillance system is working optimally and doing what it is supposed to do, and in this case, that is ensuring the safety and smooth operation of the Barcelona Metro.

A second glance at surveillance
It's true, operators working in the TMB central control room can recognize all the pickpockets ambling the underground. Yet, countering petty theft is not the purpose of this CCTV system. Today, the TMB surveillance network facilitates the operation and safety of one of the largest metro systems in Europe. It is designed and implemented in such a way so as to protect the privacy of the public as well as to keep commuters safe, all the while guaranteeing that trains will run on time.