Project reference

Iron's Highway

Customer
Acciona (Brazil)

Integrator
Telvent

Technology
IP-based video network

Market
Transportation

Challenge
Implement an intelligent transportation system for a critical thoroughfare in Brazil

Solution
Siqura Operator Storage
Siqura i-NVR
Siqura PTZ IP dome cameras
Siqura Videowall Decoder

Starting cities from scratch: Ensuring the mobility of material.

Few would contest that to build a city, you need a lot of steel. So, it's not surprising that Steel City is one of the primary suppliers of this precious metal to the blossoming metropolises of Latin America. Located in the southeast region of Brazil on the Paraíba do Sul River, Steel City is officially known as Volta Redonda. It is home to one of South America's largest steel and iron producers, the Companhia Siderúgica Nacional (CSN).

Naturally, it's essential that this indispensable product gets where it needs to go. To this end, a highway, locally called Iron's Highway, serves as the main thoroughfare from the mines to the rest of the world. This important corridor is maintained and managed by the international infrastructure management firm, Acciona, and its local subsidiary, Rodovia do A o. To ensure that traffic flows smoothly and that mishaps are promptly and effectively countered, Acciona and Rodovia do A o have recently installed a CCTV system.

Making transport more efficient

With an extensive history of successfully implementing intelligent transportation systems (ITS) around the world, the global IT solutions and information services provider, Telvent, was commissioned by Acciona to design and deploy the video network system to oversee the highway.

Due to the widespread and critical nature of this project, the network would need to reliably provide quality signals and video from the IP cameras that would come to span the entire extent of this major road. The network equipment would also need to be robust enough to stand up to the rugged conditions inherent in roadside installations. Therefore, Acciona and Telvent enlisted the expertise of telecommunications giant, Alcatel-Lucent, as well as that of the video network specialist, TKH Security Solutions USA, a supplier of advanced video surveillance solutions.

Conveying quality material to the central control room

The system has come to comprise eighty-four Siqura pan/tilt/zoom (PTZ) IP dome cameras. Each camera is mounted on an articulated pole of fifteen meters, which makes it possible to lower the camera for maintenance or to replace it without having to use trucks. The cameras stream video over an Alcatel client network to a centralized traffic management center. From here, the cameras can be configured and controlled through the video management system, Siqura Operator Storage. All the camera footage is saved on an external server for a brief period to allow for pre- and post-event recording.

The Alcatel-Lucent system consists of a fiber ring network of seven nodes, six of which transmit video signals and data pertaining to variable message signs, traffic analysis systems, and speed control radar equipment. The last node merges these video and data streams for live monitoring, recording, and playback.

The control center uses a single instance of the viewing and configuration application, Siqura Operator Storage, to establish the system's settings. For example, the event recording can be configured for the system's three network video recorders (Siqura i-NVR Elite), housed in the highway's tollbooths. Operators are able to view camera images on twelve forty-two inch screens that are mounted in the control center. These screens are equipped with the Siqura Videowall Decoder, an application allowing for the display of up to twelve live video streams on external, high- resolution HD monitors.

"The system of cameras, with its surveillance and recording functions, provides us with optimum security and service," said Marcelo Afonseca, the Director of Operations at the Acciona subsidiary, Rodovia do A o. "This video system has become one of the most powerful and necessary tools for knowing the real state of the road and enabling operators to react quickly and effectively when faced with any exceptional circumstances."

Successfully solving problems

"There were some points that we had to work on in order to reach system excellence," said Telvent Project Engineer, Alexandre Vieira de Freitas. Mr. Vieira de Freitas refers to a period during the course of the project when measures were taken to fine-tune the system to allow for the optimal network performance of the installed cameras.

TKH Security Solutions USA Sales Engineer, Yossman Infante comments, "After the initial setup, we soon realized that the network switch configuration needed to be adjusted so that the
multicast video streams could be transmitted smoothly across Alcatel- Lucent's client network design. Thanks to the swift and experienced work of the Siqura Expertise Center, we were able to effectively address the issues at hand and meet our customer's expectations."

"The Siqura CCTV solution is very easy to operate and has incredible image quality," concludes Mr. Vieira de Freitas.

Solid as Steel

Ultimately, Acciona's highway remains the thoroughfare over which vast amounts of steel and iron are transported out of Volta Redonda and on to industrial and urban areas throughout Latin America. Today, the ITS deployed by Telvent is helping to ensure that commerce and progress can continue as smoothly and safely as possible on this illustrious road.

By streaming quality video from Siqura cameras over an Alcatel-Lucent fiber network, control room operators can rapidly react to calamities and reroute traffic as necessary to improve the efficiency of transport. As a result, the advancements made in the ITS on this main road into Steel City ensure that the businesses and infrastructures in the whole of Latin America can continue to grow and develop with as little hassle as possible.