

Peruvian Prison Modernizes Video Surveillance System to IP with the NVT Phybridge CLEER Switch Innovation

CASE STUDY

High Resolution IP Security Cameras Installed Using Existing Coaxial Cable and NVT Phybridge CLEER Switch

Executive Summary

National Penitentiary Institute of Peru
Industry: Penal Institutions
Location: Lima, Peru

CHALLENGE

- Overcome distance limitations between cameras and surveillance control center.
- Connect IP endpoints without significant cost or business disruption.
- Improve recognition and identification of persons.
- Minimize video recording downtime during analog to IP transition.
- Resolve infrastructure challenges given the harsh environment.

SOLUTION

- Installation of HD IP security cameras with existing coax cables and NVT Phybridge CLEER switch technology.

RESULTS

- Ability to complete real world testing in the environment, eliminating risk and deployment concerns.
- Graceful migration - the CLEER switch leveraged an existing coaxial cable.
- Significant financial savings.
- Fast tracking of IP migration.
- Simplified network requirements with CLEER switch.
- Completion of first phase of IP migration with 43 analog cameras to HD IP.
- Minimized downtime of video recording during migration.
- No image quality issues during or after deployment.
- Remote managing of CLEER switch with GUI interface.

PRODUCT LIST

- NVT Phybridge CLEER Switch
- Single 24 Port Switch
- EC Link Adapters

The National Penitentiary Institute of Peru (Spanish: Instituto Nacional Penitenciario, INPE) wanted to modernize the video surveillance system in their ANCON I establishment (located in the city of Lima). Thanks to the NVT Phybridge CLEER switch innovation, this important Peruvian prison was able to accelerate their migration to HD IP security cameras with significant financial savings, and elimination of risk and disruption. This was a landmark project for it was the first implementation of high resolution IP cameras in penal institutions in Peru.

Challenge

The prison was using aged, analog cameras that delivered low-quality images and created difficulties in identifying persons and monitoring prison operations. The initial phase of the project was to replace 43 analog cameras with new, HD IP security cameras. As existing analog cameras were connected back to the DVR via coaxial cable, the integrator had the option to repurpose the existing coax or replace all wiring using UTP cable and fiber optical cable.

"To support the customer's requirements, we knew that a high resolution IP platform was the best solution, our challenge was how to connect the new IP endpoints without significant cost and disruption," stated the engineer Oscar Lara – Project Manager of Electronic International Security S.A. (ELINSE), System Integrator to which the contract was awarded. "We also wanted to provide a graceful migration strategy that minimized recording downtime and supported the customer's wishes to ultimately migrate over 200 cameras," he added.

Upon consideration of the customer's needs and existing infrastructure, several objectives were identified including:

- Improvement of recognition and identification of persons;
- Better monitoring of operations within the prison;
- Minimization of video recording downtime during the transition from analog to IP;
- Connection of new IP endpoints with minimal cost and disruption; and to
- Address distance challenges with the 43 cameras being between 200 and 650 meters away from the video surveillance control center.

The cost and disruption associated with having to rip-and-replace infrastructure, the need for additional IDF closets required to connect the cameras, and potential risks associated with such, were barriers too large to overcome using traditional networking methodologies – which is why the system integrator looked to the NVT Phybridge CLEER switch to complete the analog to HP IP migration.

Solution

The system integrator was aware of new Ethernet Over Coax (EoC) networking technologies that provide PoE connectivity over coax with extended reach. After much research and consultation with the team at NVT Phybridge, the integrator

Peruvian Prison Modernizes Video Surveillance System to IP with the NVT Phybridge CLEER Switch Innovation

High Resolution IP Security Cameras Installed Using Existing Coaxial Cable and NVT Phybridge CLEER Switch

"The user is satisfied with the implementation and performance of the CLEER switch and will most likely perform future installations in other prisons of Peru, theory is one thing, but it is another to see it, try it and show that after-sales service costs are minimal, and the NVT Phybridge CLEER switch has delivered."

Oscar Lara, Project Manager of Electronic International Security S.A. (ELINSE)

believed that the CLEER switch was the right choice. The manageability, features, robust power options and price point were all factors when deciding on the EoC solution for the job.

Despite the great reviews and awards won by the CLEER switch, the project manager was concerned with the ability for the CLEER switch to perform in this harsh environment. The existing coaxial cabling supporting the analog cameras was in use for twelve years and the system integrator wondered if the CLEER switch would be able to provide video signal, quality, and power to cameras located up to 650 meters away, over this coaxial cable.

To address the concerns and prove the CLEER switch performance, the integrator purchased a single 24 port switch and a few EC Link adapters. They installed the CLEER switch in the control center, connected it to the NVR and tested it locally with a short coax cable connected to the IP camera that would ultimately be 650 meters away. The system worked perfectly. The real test was now to connect the camera on the existing coax over 650 meters away. To complete the test, they went out to the location and disconnected the existing analog camera and connected the coax to the EC Link adapter, and the adapter to the IP camera via R45 cable. Simultaneously, in the control room, they moved the other end of that same coax cable from DVR to the CLEER switch that was already connected to the NVR. The camera immediately turned on and the HD images was showing in the control center within minutes. The customer and integrator were impressed with the image quality, the performance of the switch and the ease of installation, configuration and management of the switch. In addition, they did not require external power sources for the camera, given the CLEER switch delivered the necessary power for the end point over 650 meters away.

Results

The first phase of the project was completed quickly without significant cost or disruption, connecting all 43 IP cameras via existing coax cable to two CLEER switches. The implementation of the CLEER switch provided several benefits to the customer, including:

- The power sharing features of the CLEER switch. Deploying two or more switches, the customer was able to daisy chain the switches together creating power redundancy, if one of the power supplies failed on a unit, the other power supply could support the end points on the failed unit without downtime;
- Fast tracking of IP migration;
- Significant financial savings with no changes to infrastructure; and
- Remote managing of the CLEER switch with the GUI interface which allowed for easy troubleshooting, enhanced network security with port locking and power management capabilities.

Peruvian Prison Modernizes Video Surveillance System to IP with the NVT Phybridge CLEER Switch Innovation

CASE STUDY

High Resolution IP Security Cameras Installed Using Existing Coaxial Cable and NVT Phybridge CLEER Switch

"This project allowed us to see real evidence, that it was possible to use the same coax cable to transmit IP video in HD ... we were able to fast track the IP migration, save the customer money on infrastructure and allocate those savings to better applications."

Oscar Lara, Project Manager of Electronic International Security S.A. (ELINSE)

All of these capabilities will further reduce the costs to manage the new IP system on an ongoing basis.

"There are many sceptics to leveraging an existing coax cable to support HD IP camera deployments. I was one of them," said Oscar Lara. "This project allowed us to see real evidence, that was possible to use the same coax cable to transmit IP video in HD. In addition, we were able to fast track the IP migration, save the customer money on infrastructure and allocate those savings to better applications. The user is satisfied with the implementation and performance of the CLEER switch and will most likely perform future installations in other prisons of Peru," said Lara, who also added that they now have the expertise on how to leverage existing coax and migrate to IP. "Theory is one thing but it is another thing to see it, try it and show that after-sales service costs are minimal, and the NVT Phybridge CLEER switch has delivered."

About NVT Phybridge

NVT and Phybridge have joined forces to become one. The newly formed NVT Phybridge is the leader in long reach PoE (Power over Ethernet), making IP connections in far places simple. Our CHARIoT series of long reach switches help our customers migrate communication, physical security and building control end to IP. Our award winning switches transform existing or new infrastructure into an IP path with power. In addition to IP solutions we have a long history of supporting analog requirements with our robust analog transmission solutions.

We are a North American based technology company with global reach, dedicated to practical innovation. Our number one priority is bringing solutions to market that are technologically advanced as well as practical for the end-user.