

Case Study: Cheonan-Nonsan Expressway



CHEONAN-NONSAN EXPRESSWAY UNDERGOES A SEAMLESS TRANSITION TO PELCO'S VIDEOXPERT VMS

Customer

The [Cheonan-Nonsan Expressway](#) is a national highway that connects the central and southern regions in the South Korean peninsula. The linear highway runs 82km in total, reducing existing route distance by more than 30km as well as reducing travel time up to 30 minutes. Construction of the highway first started on 1997, and in 2002, it was opened for the public.

Since then, more than 1.5 million vehicles use the C.N. Expressway every year. The highway has become a critical part of South Korea's road infrastructure, efficiently connecting regional cities and industrial areas to Seoul. Currently, Cheonan-Nonsan Expressway Corporation (CNEC) operates the highway's security, headquartered in the city of Gongju.

The entire stretch is now being monitored using the latest full-HD [Pelco](#) technology, consisting of [Esprit Enhanced](#) outdoor cameras, [Spectra Enhanced](#) dome cameras, and [Optera](#) 180 and 270 degree panoramic cameras that provide a birds-eye view of the highway at a glance.

The Traffic Information Centre, located in C.N. Expressway's headquarters, also migrated its VMS to Pelco's [VideoXpert Enterprise 3.3](#) for a comprehensive video management solution.

The Challenge

From 2008 to 2018, the site was running Pelco's analog CM9700 Matrix with Endura Enterprise IP VMS. A complete system overhaul was planned and executed in 2018, which upgraded the entire existing analog-IP hybrid system with Pelco's VideoXpert platform.

One of the main objectives of the security team was to ensure system continuity and compatibility while reusing as much existing equipment as possible. Another objective was to maintain full HD image quality, in that all cameras needed to be displayed and recorded in 1080p resolution to greatly improve visual monitoring and incident management. The team also prioritized the need for a user-friendly interface, a straightforward training process for operators, and a streamlined tool for technicians.



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The Solution

Although C.N. Expressway decision makers surveyed a wide range of video surveillance providers, they ultimately decided that VideoXpert delivered “the most complete solution with minimum interruption of operations,” stated Mr. Dae-Seung, CNEC’s Senior Operations Manager.

The surveillance solution has already been widely adapted into newer CCTV installations. Dae-Seung observed that “the technology has significantly [advanced] to provide pictures that you could not imagine before.”

For this upgrade, each of the cameras were requested to be in 1080p resolution with other future-ready options like Pelco’s Optera cameras. The panoramic view is one of the first ever deployed in the South Korean highway, and it has been providing an expanded level of visibility for the C.N. Expressway security team.



The Value

“VideoXpert VMS, along with Esprit, Spectra, and Optera cameras, provided the best single-package solution that we can depend on with best overall performance when used as one system,” Dae-Seung said. “There are many cameras installed throughout the highway with an occasionally unstable network connectivity. VideoXpert was able to maintain its baseline image quality and system performance even when the environment was not consistent and stable.”

According to the security team at C.N. Expressway, their installation process was “flawless.” They added that they experienced zero out of box failures, and every component of VideoXpert was set up and ready to go within a few days of delivery on site. Existing IP cameras and analog encoders were seamlessly and immediately discovered and commissioned in their new VMS, allowing operators to continue their daily operation using existing cameras with minimal downtime. Their monitor walls were also redesigned with VideoXpert Shared Display Decoders.

“This allowed for intuitive camera switching and review from remote Workstations,” Dae-Seung said. “Having flexible camera tabs, information tags, and an intuitive layout really helps us to focus on managing critical video.” In addition to these features, the integration of an existing [KBD5000 keyboard](#) was successful as operators could quickly transition to the new system with little additional training.

The security team even came across some pleasant surprises. “By going to [Pelco as] a single vendor, we were able to strike a better deal to save our budget. In fact, we were able to fit in several extra expansions that we didn’t anticipate for this project.”

With VideoXpert, C.N. Expressway is now able to flexibly adjust image stream formats from primary and secondary streams to reduce live video bandwidth usage while maintaining full quality video for recording. Instant reviews using shortcut buttons and KBD5000 jog dials enable immediate footage reviews without needing to navigate the interface. Incidents are managed using the Investigation Mode, which enables operators to quickly compile accident footage from multiple cameras and submit them to the appropriate authorities.

In terms of the cameras, Dae-Seung observed that “The Optera 180 degree cameras are able to provide an unobstructed, panoramic, and high-resolution view of highway sections with zero-blind spots.”

“This was previously was impossible without using several cameras at once,” he added.

Dae-Seung explained that the primary objective of highway monitoring is to have clear situational awareness in case of an accident or traffic congestion. “VideoXpert provides quick and easy access to the video, while the excellent image quality of Esprit and Spectra Enhanced has really enhanced our overall awareness by capturing much more scene details than ever before possible.”

The system has been live since beginning of 2019. According to the security team, several vehicle accidents that occurred throughout the highway stretch were captured and handled in a timely manner with no incident. “The cameras have exceeded our overall expectation, and many different organizations across Korea are visiting C.N. Expressway to see how the next-generation VMS and cameras perform together,” Dae-Seung said.

“We have been a loyal customer of Pelco for past 10 years, and Pelco’s offering has continued to keep and deliver its promise of performance and reliability.”

Considering an update to your video surveillance system? Find out how you can migrate to VideoXpert [here](#).

 Contact the sales representative in your area today, or visit pelco.com to download complete specification sheets.

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