

An aerial photograph of a complex highway interchange in a rural landscape. The scene is dominated by vibrant green agricultural fields, some of which are covered with white plastic mulch. A multi-lane highway with several overpasses and ramps winds through the landscape. In the center-right, a large, modern white building with a blue roof, possibly a rest area or service center, is visible. The sky is bright blue with scattered white clouds. The word "INTELLIGENT" is superimposed in large, bold, white capital letters across the middle of the image.

INTELLIGENT



TRANSPORTATION

PELCO SYSTEMS LIGHT THE WAY ON KOREAN PENINSULA

As in any country, Korea's transportation infrastructure has always been the very foundation of the nation's wealth and development. Ever-increasing traffic on its roads is something that any government must keep an eye on, and the Endura Network-Based Video Security System, only from Pelco, is now providing a powerful means of road surveillance to one of the nation's key regional highways.

BY JONATHAN LEE, TECHNICAL SUPPORT ENGINEER KOREA, PELCO ASIA PACIFIC



Stretching more than 80 kilometers, the Cheonan-Nonsan Regional Expressway connects the Korean peninsula's two major national arterial highways with three major junctions, six interchanges, two tunnels, 44 high-suspension bridges, eight toll plazas and four service areas. The Expressway is anticipated to operate by the nationally funded Cheonan-Nonsan Expressway Corporation (CNE) from 2002 to 2032, with the aim of providing the safest and most comfortable driving experience.



Esprit Lights The Way

The decision was made to replace all existing pan/tilt camera systems along the highway with specially modified Esprit 24X integrated positioning systems with Day/Night capability to provide crystal-clear video. Fitted with additional long-range IR illuminators, they provide clear, detailed images even in the darkest of lighting conditions. The integrated design of the Esprit camera system almost totally eliminates the frequent mechanical maintenance previously required, and operators are simply delighted to see Esprit's brilliant pan/tilt performance.

Systems Integrator, A1 TNS, did not stop there. By taking advantage of the innovative IPS-RDPE Remote Data Port on the pole mounts, installers can use the Pelco Remote

Monitor Kit to fully test and diagnose each camera installation, resulting in fault-free installation and the earliest detection of any issues. Whenever any camera issues are found, no longer does anyone have to climb 20-metre aluminum poles to see what is wrong – they simply need to plug in the Remote Monitoring Kit with handheld display to better identify the issue at hand.

Endura Paves The Way

The Cheonan-Nonsan Expressway now has over 120 cameras watching every section of the road, 24 hours a day, 7 days a week. Of course, the Esprit systems were just the beginning – the real deal started with Endura. With a complete network-based video security system in place, video from each camera is transmitted through fiber to the central monitoring station, located in

the headquarter office in the city of Gongju in the Central Korean Peninsula.

Central Traffic Monitoring Station

Video from all cameras throughout the expressway system is displayed over a large video wall at this central monitoring station, which consists of six 67-inch DLP projectors and six 50-inch Plasma displays. Using the Endura VCD for video wall management, unparalleled image quality is available while allowing multiple security operators instant playback and PTZ control.

And this control is further enhanced through the capabilities of the Endura WS5000 Workstation, which provides comprehensive system control and video management to the chief monitoring officer.



The customizable and intuitive interface of the Endura Workstation enables security officers to create endless combination displays of its video signals. The result is the ability of the surveillance operators to be aware of and to respond as quickly as possible to any roadside situation.

Charyeong Tunnel Auxiliary Control Centre

In addition to the central monitoring station, there is also the Charyeong Tunnel Auxiliary Control Centre. This auxiliary station, located about 30km away from headquarters, provides on-site electrical and security management for the Expressway's two tunnels. Cameras installed within these tunnels were connected to multi-channel encoders, which transmitted the video over fiber-optic Ethernet to the main Endura network.

This allows the central monitoring station to have even more complete surveillance through the tunnels, every hour of the day.

A monitor wall, consisting of four 40-inch plasma displays, delivers a bird's-eye view of all tunnel cameras while providing instantaneous access to recorded video and pan/tilt control through the innovative KBD5000 Intelligent Keyboard. Because video images are digitally transmitted over the IP network, the central station no longer suffers from noisy, degraded video no matter how far away the cameras are located.

The Answer Today – And Tomorrow

With the system live, Pelco's equipment now watches over the safety and security of thousands of drivers every day, every night.

As always, A1 TNS was able to achieve complete customer satisfaction – and Pelco is very proud to be part of the team that brought the ultimate goal alive.

As a result, Pelco's Endura systems allows complete digital management of video while interconnecting all remote sites in one central monitoring station, all with crystal-clear digital images, intuitive operator control, and exceptionally low latency. And why stop here? Endura's endless capability for expansion leaves plenty more room to grow the system as CNE sees fit. Already, CNE is planning a second-stage expansion, which will include new Intelligent Encoders for video analytics. The best thing is, they just need to plug and play – Endura does all the rest.



The Reason for Change

Wanting to bring in the highest standard of video security, CNE chose systems integrator A1 TNS as its partner to create the most comprehensive and cost-efficient surveillance system. CNE already had an assortment of cameras and analog switching systems in place; however, this system very soon met its limitations.

The Pelco system was selected to overcome existing challenges, which included:

- **Image Quality & Ease of Operation Maintenance**

Existing cameras throughout the CNE were combinations of manual, varifocal lenses and large pan/tilt units. Each experienced serious image degradation as time went on. Combined with image vibration, due to traffic and the slow speed of operation, a new solution was needed.

- **Recording Video and Integrated Management**

Existing systems did not have any capabilities to record the video images, and in turn had no way of managing video. A digital-based recording and management solution was in dire need.

- **Site Integration**

With the existing systems, the Central Monitoring Station was unable to view video from remote sites such as tunnel control centres. Moreover, the video transmission that was accomplished was done so through the use of cable TV lines, which caused serious image degradation over long distances especially with the aging video infrastructure.

- **Multiple Monitoring Stations & Integrated Site Management**

The ability to send the right video wherever needed was a key feature requested by field operators, and was absolutely necessary to provide immediate situational awareness to every member of the team, thus bringing road surveillance to a higher level.

Meeting these stringent requirements wasn't going to be easy for anyone; but with the right stuff from Pelco, A1 TNS was able to fully satisfy the customer's exact needs for performance.