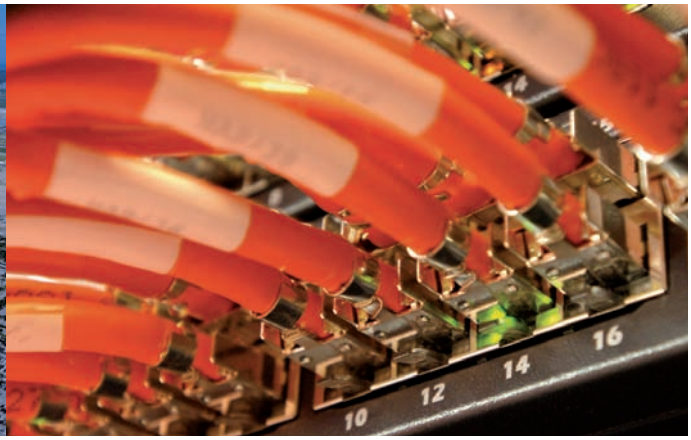
Award winning airport relies on LANsense to become Asia's most technologically facilitated



Advanced fibre networks, backbones and LANsense intelligent network management support multiple uses at Korea's Incheon International Airport

Opened in March 2001, Incheon International Airport is amongst the best airports in the world. The airport was so popular that within a year, it was apparent it would be quickly saturated. Therefore, a Phase Two expansion began in 2002 which included a second terminal. Nexans Cabling Solutions was selected by the airport's management to provide state-of-the-art infrastructure to support a wide range of services within the new terminal.

Award-winning Incheon International Airport (IIA), located 30 minutes outside South Korea's capital and largest city, Seoul, is among the newest, most technologically advanced and prestigious in the world. It's been recently recognized as the "Best in Service in Class" by the International Air Transport Association (IATA), and ranked "Best Airport Worldwide" by the Airport Council International (ACI). Last year, travel industry publication Global Traveler gave it the "Best Airport in The World" award following numerous studies of the globe's leading airports. IIA holds several other awards and accolades that are equally impressive.

Comprised of Korea's most advanced technology, the terminal is considered an "intelligent building" in that much of its operation, from lighting, heating, cooling, as well as security monitoring, communications, customs and baggage handling is computer controlled for greater speed and efficiency.

Phase-one and two- passenger terminals employ a futuristic-looking aero- and hydrodynamic shape that evokes a large sailing vessel for an artistic and rhythmic feeling.

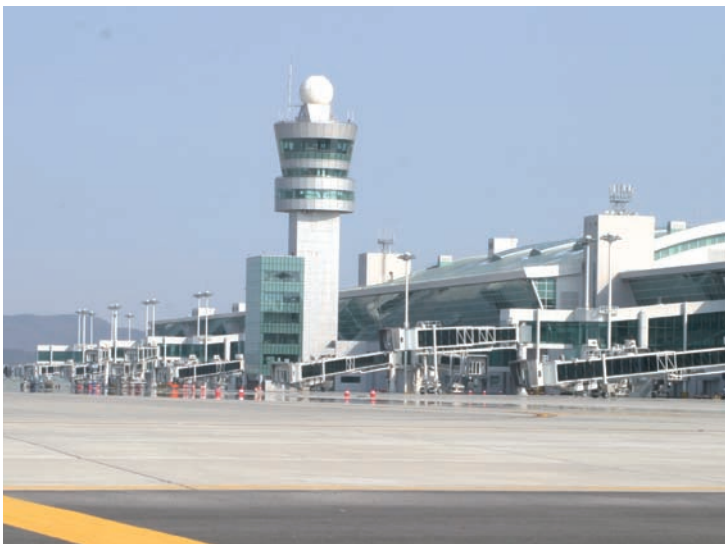
Terminal two is linked to an automated people mover system as well as fast, intra airport transit trains. Advanced technology also allows IIA to handle huge passenger volumes, particularly those associated with the new Airbus A380 double-decked jumbo jet that in some configurations can seat 900 passengers.

IIAC Incheon International Airport

Nexans

Executive Summary

MAIN CUSTOMER • Incheon International Airport (IIA)
PRIMARY LOCATION • Terminal Two
REQUIREMENT/MAIN PROJECT • Extensive cabling/LAN infrastructure supporting voice, data, video, other multi media applications at new terminal
REQUIREMENT/RELATED PROJECTS • Intelligent network monitoring through LANsense to help authorities efficiently manage changes; alerts in event of security breach
EQUIPMENT • A variety of fibre/copper LANmark cables, backbones, connectors, LANsense intelligent network management system throughout terminal



And if all this weren't enough, IIA will soon boast its own nine storey, fully equipped hospital making it truly unique in the world. When completed in 2011, the Yeongjong Medical Center will serve nearby residents and over 30,000 domestic and international tourists who visit Korea every year to receive advanced medical treatments.

Regional portal to Olympics

Work on Terminal Two began in February 2002 and was completed in time for the Olympic Games in summer of 2008. All communications infrastructure including local area network (LAN) backbones focused heavily on fibre optic cabling to support massive voice, video and data interactions throughout the building.

Nexans fibre networks, backbones and LANsense intelligent network software support Asia's most technologically advanced airport.

For example, extensive security functions include fixed line and wireless Internet protocol (IP) telephony and video cameras. The network also supports all multi-media display systems detailing flight arrival, departure and tracking information, baggage, customs directives and other functions.

Prior to groundbreaking, the airport's managing organisation issued a request for proposal (RFP) to regional telecommunications and cabling firms to supply the network infrastructure in support of all Terminal Two communications. In particular, the tender demanded intelligent network monitoring capabilities as well as fibre/copper cabling of the highest order, including fire retardant capability.

Winning consortium secures contract

Of the three companies responding to the RFP, a consortium of the regional telecommunications provider, KT (installation specialist Daesun E&C Co.and Nexans Cabling Solutions) was selected by the review committee.

Nexans in particular was cited for its wide experience as an installer of both highly sophisticated and basic communications solutions in airports, as well as the reliability of the Nexans brand and its overall experience with integrated communications systems.

Other key criteria were the finished network's ability to be easily upgraded as technology and needs evolve, and in particular, the high-quality, halogen-free jacketed copper cabling delivered by BerkTek, a Nexans company, that meets stringent safety criteria for non-toxicity and fire resistance.

"Nexans is the world's leading company of cable manufacturing industry in the world, competing after 1st and 2nd rank in terms of revenue size, has earned high reliability through numerous references," commented Kim Ki-ho, Senior Vice President, ICT, Daesun E&C Co., Ltd., a selected to the winning consortium. "Behind its success in winning the contract is the excellence of Nexans products, prompt decision-makings and prompt follow-ups, it's flexible and responsive attitude to meet each customer's requests from A to Z, and absolute cooperation among consortium member companies that is based on mutual trust."

A critical component in winning the tender was the performance attributes and technology behind Nexans Cabling Solutions' LANsense intelligent network management software.

Challenges

- High performant and easy upgradeable cabling system capable of supporting all multi-media display systems
- Intelligent monitoring system for entire Terminal Two

Solutions

- LANsense Intelligent network management software
- LANmark-OF fibre optic cables multimode and singlemode
- LANmark Category 6 copper cabling system

Benefits

- Reliable, fast communications infrastructure throughout terminal
- Improved efficiency and security through continuous network monitoring
- Keeps terminal running smoothly – departures, arrivals, baggage, customs, security, flight information
- Helps IIA maintain its world class reputation for service, convenience and advanced technology

The LANsense system gives IIA managers the ability to oversee the complete Terminal Two network, automatically mapping, locating, reporting and alerting authorities to any network event, such as a device connection/disconnection, or similar change anywhere within the infrastructure. Through real-time connectivity, LANsense discovers what devices are connected where, and raises alerts on unauthorised activity.

It also manages and maintains a database of moves, additions and changes (MACs), even preparing work orders for such requests. The security implications of this component are enormous, because intelligent monitoring through LANsense reduces the possibility of breaches and tampering going unnoticed until it's too late. Such mapping, monitoring and controlling of the entire Terminal Two communications network merges perfectly with the airport's intelligent building goals.

"Nexans' intelligent cable management system introduced for economic and efficient management of cabling across the building, is expected to reduce maintenance costs and improve communication service quality by automating cable management."

Kim Ki-ho, Senior Vice President, ICT, Daesun E&C Co., Ltd.

Final reasons for selecting the consortium were prior regional experience in successfully executing similar projects, and a good working knowledge of the local telecommunications marketplace.

"With the introduction of Nexans LANsense, IIA's network will be managed in a more sophisticated, more intelligent, and more efficient way. Nexans' intelligent cable management system introduced for economic and efficient management of cabling across the building, is expected to reduce maintenance costs and improve communication service quality by automating cable management," commented Kim Ki-ho. "Now IIA is ready to better serve, true to its prestigious reputation as the world-best airport."

Numbers convey an enormous effort

Finally, the numbers associated with the completed Terminal Two project are impressive:

- Installation of LANmark fibre optic cabling with LANsense intelligent network management software – 22,100 nodes.
- Standard fibre optic – 8,700 nodes installed.
- LANmark Category 6 copper cabling with LANsense intelligent network management software – 22,000 nodes.
- Standard Category 6 cabling – 1,250 nodes.

In all, more than 351 kilometres of cabling support the entire infrastructure with exceptional room for growth. And significant growth is expected. For example, IIA envisions:

- A nearly two-fold increase in flight services annually, from the current 240,000 to 410,000.
- Increased freight handling, from an annual tonnage of 2,700,000 to 4,500,000.
- Increased passenger traffic, from today's 30,000,000 to 44,000,000

This sophisticated and highly intelligent communications network is today ready to serve the steadily increasing demands of Terminal Two users from throughout the world for many years to come.

With energy as the basis of its development, Nexans, the worldwide leader in the cable industry, offers an extensive range of cables and cabling systems. The Group is a global player in the infrastructure, industry, building and Local Area Network markets. Nexans addresses a series of market segments from energy, transport and telecom networks to shipbuilding, oil and gas, nuclear power, automotive, electronics, aeronautics, handling and automation. With an industrial presence in 39 countries and commercial activities worldwide, Nexans employs 23,500 people and had sales in 2008 of 6.8 billion euros.

In the field of LAN Cabling Systems, Nexans Cabling Solutions offer a complete range of products and value added services providing improved reliability and reduced cost of ownership for Network Managers, together with faster installation times for installers.

In addition to LANmark™ brand cabling systems, Nexans also specialises in LANsense™ Intelligent Infrastructure Management (IIM) products including Environmental Monitoring and Access Control (EMAC) devices.

Nexans offers an unrivalled choice of LAN infrastructure solutions to a global customer based through an extensive network of regional offices and Key Account Management team.
For more information visit www.nexans.com/LANsystems

Nexans

SA Nexans Cabling Solutions NV
Alsembergsesteenweg 2, b3 - B-1501 Buizingen
Tel: +32 (0)2 363 38 00 - Fax: +32 (0)2 365 09 99
Nexans Cabling Solutions UK and Intelligent Enterprise Solutions Competence Centre
2 Faraday Office Park - Faraday Road - Basingstoke - Hampshire RG24 8QQ
Tel: +44 (0)1256 486640 - Fax: +44 (0)1256 486650

www.nexans.com/LANsystems - info.ncs@nexans.com

Copyright 2009 SA Nexans Cabling Solutions. All rights reserved. LANmark, LANsense and GG45 are registered trademarks of Nexans. Release date: April 2009.