

*Seoul Subway***ORGANIZATION**

Seoul Metropolitan Rapid Transit Corporation (SMRT), Seoul, Korea

TECHNOLOGY

Wireless Video Surveillance

INDUSTRY

Transportation

PURPOSE

Real-time, mobile, wireless video surveillance

SOLUTION

Firetide wireless mesh network

INTEGRATOR

Korea Telecom Global Telecom

MORE INFORMATION

www.firetide.com
www.smrt.co.kr
www.kt.com
www.globaltelecom.co.kr

Seoul Korea's Subway System

Wireless mesh delivers unique ability to provide high-performance real-time video streaming in challenging subway environment to and from trains moving at 50 mph

World's First Real-Time, Mobile Wireless Video Surveillance System

After 198 people perished in the Daegu, Korea subway fire of 2003, the Seoul Metropolitan Rapid Transit Corporation (SMRT) began investigating real-time wireless video surveillance systems to help protect their subway riders and transit workers against potential fires, accidents, thefts and other harmful incidents. Now, after years of research and evaluations of several vendors' wireless equipment in a high speed and harsh subway environment, the SMRT has selected Korea Telecom with Global Telecom as the subcontractor to deploy Firetide Inc.'s wireless infrastructure mesh solution in Seoul's subway system. When completed in June 2010, it will be the first real-time, high-bandwidth mobile wireless video surveillance subway system in Korea and the world, costing an estimated total of \$60 million.

"Firetide was selected because no other vendor's wireless mesh equipment could provide the high speed performance required to deliver streaming video from the station to moving rail cars and operate in one of the harshest of environments for RF networks," said Mr. Jung Yeong-Hyun, project manager of Global Telecom. "We were also tremendously impressed with Firetide's sophisticated regional support organization that understood the difficulties posed by the subway system."

The Seoul Metropolitan Subway, one of the most heavily used rapid transit systems in the world, is operated by four different organizations. The SMRT operates Seoul subway under-ground lines 5, 6, 7, and 8 with a ridership of 2,037,000 daily and involves a total of 201 subway trains at 148 stations.

After the Daegu fire, when an arsonist set fire to a car train stopped at the Jungangho station and which then spread to a second train when it entered the station from the opposite direction, the SMRT wanted a system where the operators of the moving trains would have a video of the station being entered. That way the driver could decide not to enter the station in case of accidents or other problems such as a person on the track. The ability to stream video from a station's cameras to a monitor in a train moving at speeds of 50 mph was critical. Wireless mesh technology was the only option to transmit video to and from subway cars, as it provided seamless handoff and roaming along the fixed wireless infrastructure. In competitive testing, Firetide was the only vendor to successfully complete the high speed handover in the tests conducted in the subway between May and August of 2009. The subway environment is particularly harsh for RF communications because of the reflective metal surfaces, noise and vibrations, and high voltage electric power.

In addition to providing video surveillance from the station to train operators, the network will also provide video surveillance from inside of passenger trains to a monitoring center and video streaming of public announcements and commercial advertisements onto passenger train monitors. In compliance with Korea's regulation for subway and train radio frequency to avoid interference from other wireless equipment, Firetide's mesh nodes are combined with an 18 GHz frequency converter provided by SeoulCommtech, a Firetide premier partner in Korea. A total of 1,000 Firetide mesh nodes will be deployed for all four

Seoul Subway System

SMRT's subway lines along with 350 cameras in the stations and 300 in the trains. The wireless infrastructure delivers 20 Mbps of capacity, enabling real-time streaming video to and from the trains moving at 50 mph.

"We have recognized for some time that there is a great opportunity for wireless infrastructure mesh networks that are capable of providing real-time communications for mobile applications

in transportation to improve public safety and deliver innovating services to passengers," said Bo Larsson, chief executive officer of Firetide. "As a result, we uniquely developed the technology and the support organization that can deliver the performance required for such challenging applications and their environments. In the future, we expect an even bigger focus on mobile voice, video and data applications."



Linear topology shown on Firetide HotView Pro NMS



www.firetide.com
Phone: +1 408-399-7771
Fax: +1 408-399-7756
Email: sales@firetide.com

2105 South Bascom Ave., Suite 220,
Campbell, CA 95008
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