



Olympic Heroics Come Home



Hundreds of thousands of tourists flocked to Turin, Italy in 2006 for an event that occurs every four years. The people came for the spectacle of XX Winter Olympics—to witness the triumphant joys of athletes narrowly beating their opponents and the heart-breaking defeats of competitors whose dreams never will materialize. After witnessing a game-winning slap shot, a perfectly rendered ice dance, or the torrential rush of a bobsled in motion, many of these visitors wanted to share their experiences—with a father who used to play hockey, a friend who loves ice dancing, or a loved one who marvels at how fast a 390 kilogram sled really can move.

In a world of mobile communications, reaching out worldwide to share the Olympic experience is easy from most venues. But, without proper planning and foresight, that would not be true for some areas of the Olympic host city, especially in a notoriously difficult environment for radio signals—the metro transit system. In any city, a metro's combination of underground stations, fast moving trains, confined spaces, and abundance of steel and other radio deflecting materials can lead to the common frustration of lack of coverage for mobile communications subscribers. In Turin and elsewhere, operators know that providing wireless coverage into underground trains moving through hundreds of kilometers of stations and tunnels is not an easy job.

Luckily for those operators, Andrew provides solutions to ensure that forward-thinking operators like those in Turin can make wireless signals available to customers even in the most difficult environments.

Turin's Gruppo Torinese Trasporti metro is the first Italian underground rail system to offer complete wireless coverage. Four wireless operators—Telecom Italia Mobile (TIM), Wind, Vodafone, and 3 (H3G)—contracted Andrew Corporation to install the multi-operator system that enables each of them to provide clear signals to train passengers. The 2006 Winter Olympics was an ideal opportunity to launch this new coverage system due to the massive amount of tourists and locals expected to use the city's railways. By enabling passengers to enjoy com-

municating with friends while waiting for a train, or using the 3G bandwidth to download video clips of the day's Olympic highlights, operators would increase customer satisfaction and revenue.

The companies hired Andrew because of its state-of-the-art technology and extensive experience installing systems in underground rails worldwide. They also needed an objective third-party to coordinate and ensure equal treatment of each company's various requirements. Andrew was asked to deliver a turnkey solution, handling everything from site surveys to system design, equipment installation, testing, and commissioning. (Andrew also will provide maintenance on the system for two years.) The operators' system requirements were strict—less than one percent of all calls referred to a person traveling inside a passenger car at 80 kilometers per hour could be dropped—and each operators' different technology standards had to be supported.

Andrew's system enables operators to manage calls placed by customers on metro cars, connecting customers to loved ones. Vivid descriptions about sporting events follow, and both customer and operator are happy. Andrew has been installing indoor coverage systems like Turin's in underground metro systems worldwide for over 15 years. Other major projects include the ICE Rail in Germany, Hong Kong's MTR, the Bay Area Rapid Transit (BART) in San Francisco, and Singapore's North East Line (NEL) Mass Rapid Transit.



An Answer for Every Problem

Andrew's ION™-M fiber distributed antenna system is the backbone of the Turin underground rail coverage system. The ION-M master unit takes signals from the dedicated GSM base stations or UMTS Node Bs located in the equipment room and spreads them down fiber cables to remote units installed throughout the tunnels and stations. The remote units feed antennas that communicate with passengers' mobile phones, enabling voice communication or data download even when moving at rapid speeds. "Outside RF signals have no chance of penetrating into a tunnel or underground station to provide coverage," says Bob Hudzik, group president, Wireless Innovations Group, Andrew. "The only way to do so is through a dedicated system. Each rail application presents unique challenges, but Andrew offers many different solutions to meet any specific needs."

