



Beijing Light Rail China

China digital radio communication system



CUSTOMER NEEDS

- A digital radio communications system to facilitate daily communications across the entire track length.
- An open standard based architecture
- A technology that would allow them to share valuable resources.
- A long-term strategic partner.

A TETRA compliant system would enable them to enjoy all the advantages made possible with a digital system, including enhanced voice quality and seamless coverage for better performance in operational efficiency and commuter safety.

“We have plans to launch more public transportation systems including light rails and metrorails before the 2008 Beijing Olympic Games,” said Li Hong Chun, vice general manager of Beijing Urban Transit Railway Corporation. “We look forward to Motorola’s partnership in creating an excellent transportation environment for the citizens of Beijing.”

BACKGROUND

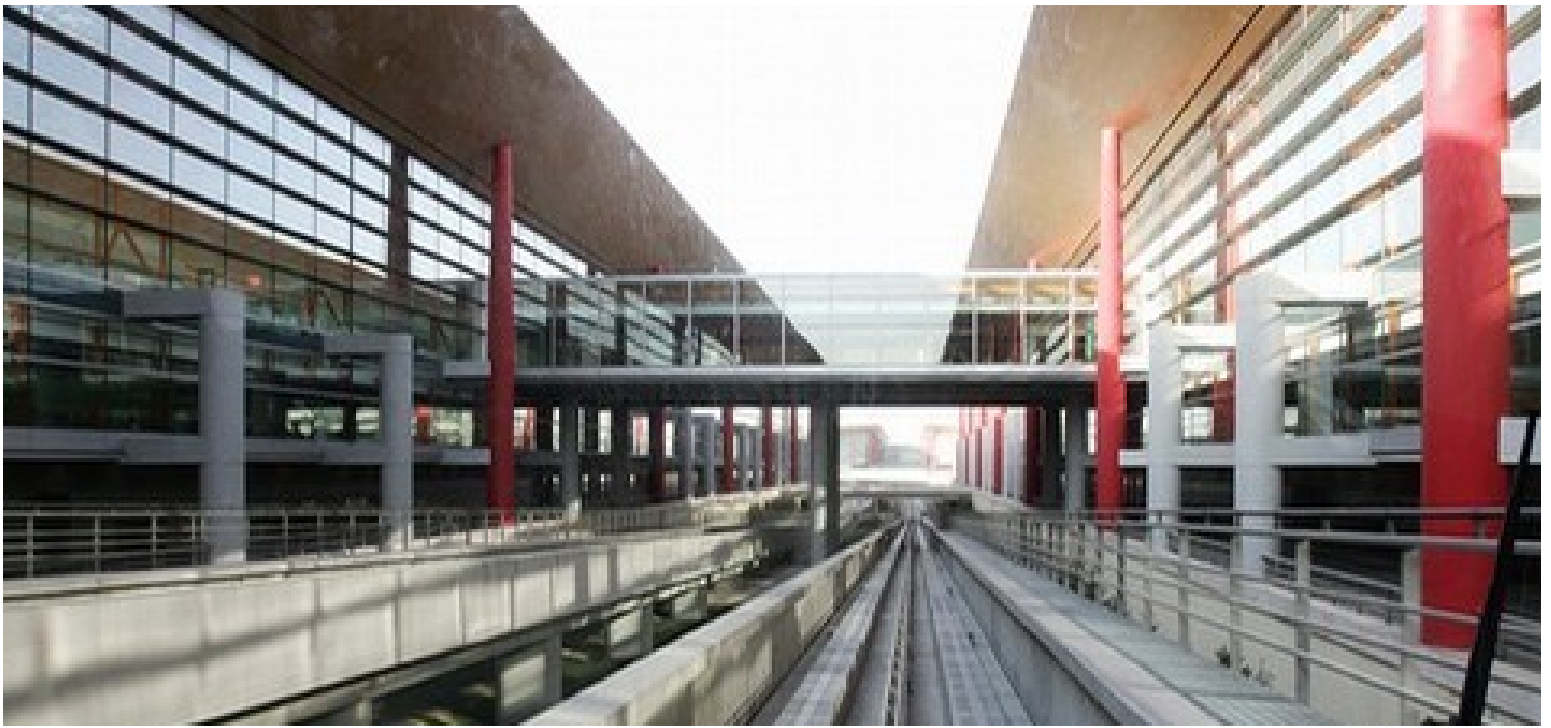
The light-rail is regarded as the ideal solution for a city that has grown too large for buses, yet cannot be supported by heavy rail with fully dedicated subways and elevated guide-ways.

This is particularly the case for the Beijing Municipal in the construction of public transportation systems in preparation for the 2008 Olympic Games to be held in Beijing.

The Beijing Municipal plans to have four light rail lines before 2008, each with communications systems that are mutually interoperable for resource sharing. On 28th January 2003, the Beijing Light Rail Line 13, the first among the four lines, commenced operations with a Motorola TETRA-compliant radio communications solution.

Designed to carry 150,000 passengers a day, the Beijing Light Rail Line 13 connects the two major comprehensive transportation hubs in downtown Beijing. The systems covers 16 stations over a track length of 4,085 kilometres, including 26.10 kilometres at ground level, 11.28 kilometres elevated, and 2.47 kilometres underground.

In the selection of communications systems, Beijing Urban Transit Railway Corporation selected a digital trunking system for better voice quality, seamless coverage, enhanced dispatch services, optimised frequency usage, and higher levels of anti-interference. This project marks China’s second 800MHz TETRA system.



BENEFITS

- Optimum use of frequency resources and improved voice quality
- Seamless coverage and roaming capabilities for entire track length and at all stations
- Improved call dispatching for superior operational performance
- Data services for improved staff efficiency and enhanced customer satisfaction
- Delivery of critical messages without delay for a quick response in case of emergency
- Real-time communication for high level of passenger and staff safety

MOTOROLA SOLUTIONS

Motorola provided Beijing Light Rail Line 13 with a fully TETRA-compliant digital radio system operating in the 800MHz band. Used to monitor and supervise day-to-day operations, the system provides a full range of dispatch services via voice and data covering the entire track length and at all stations. It consists of 4 base stations and 5 consoles, including train online dispatch and metro police dispatch as well as mobile data applications and user terminals.

The solution offers all the advantages expected from a digital trunking system, including improved voice quality, seamless coverage, optimised frequency usage and anti-interference capability, plus enhanced resilience for always on communications with intelligence distributed across the network.

It offers three services on a single network with a single radio:

- Group calls for instant access to all team members and higher operational efficiency and staff safety
- Cellular type calls for supervisor privacy
- Mobile data services for improved staff efficiency with faster access to information

The voice dispatch capabilities include call broadcasting, ruthless pre-emption and private calls, dynamic talk group assignment, priority monitored group and audio recording features.



MOTOROLA

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These features allow for rapid response during emergency by ensuring that key operational messages are sent without delay.

The data dispatch capabilities allow operations control centre staff to send messages that are displayed on in-train information screens, keeping passengers updated at all times and increasing their satisfaction and safety. Staff safety is also enhanced with emergency buttons to summon assistance quickly and the ability to monitor staff communications during emergency situations.

The TETRA system offers a high level of scalability and interoperability, allowing Beijing Urban Transit Railway Corporation to grow their radio systems by simply adding modules and applications, and to integrate with other systems for seamless communications across networks. This maximises the value of their existing investment. that will enable the Taiwan High Speed Rail to benefit from enhanced communication reliability and clarity, resulting in better control and management of its daily operations.