



# MOTOwi4 – Heart of China Railway

In the heart of China, wi4 fixed solutions are accelerating rail station video monitoring and control for new high-speed train system



## Company overview: large regional railway bureau in central China

This regional railway bureau is a large state-owned enterprise that owns and operates a number of main railway lines in coal-rich central China. The rail system provides major outbound lines for shipping coal and other payloads from the interior provinces of Henan, Shanxi and Shan'xi. Because the bureau is of such great importance in transporting passengers and exchanging goods between inland and coastal regions, the system is also known as the Heart of China Railway.

## The challenge: enable compliance with China's Sixth Speed Acceleration Project with automated rail station monitoring

China's Sixth Speed Acceleration Project has been underway in the country's rapidly growing railway industry since April of 2007. Under the program, railway speed enhancements include the nationwide introduction of 140 high-speed trains capable of speeds of over 200 kilometers per hour. Railway information systems are also being upgraded to complement these higher-speed capabilities. Especially important is enhanced rail station monitoring to help ensure safer, more efficient dispatching. Monitoring was previously handled manually, a method that proved to be both inefficient and ineffective. The bureau decided to build a high-speed data and video feedback system to capture and deliver real-time information and visual images from stations located in an area that encompasses more than 50 kilometers. The bureau examined a number of solutions. They found that renting equipment was too expensive, and many locations were difficult to reach with wired solutions. Furthermore, microwave solutions faced obstacles such as interference from the bureau's high-voltage electrical network, and stability issues caused by the strong winds generated by the high-speed trains.

## The solution: a high-speed wireless broadband network that provides real-time data and video of multiple railway stations

The bureau ultimately selected a video solution based on the wi4 Fixed Point-to-Point solutions and Point-to-Multipoint Canopy platform. The bureau valued the fact that the Motorola equipment was easy to set up; central and user units are connected to the indoor facility via Ethernet, which in turn supplies the electrical power. The devices are also compact, highly integrated, stable and designed for outdoor deployment, built to withstand the elements, including the high winds generated by high-speed trains. Equally important, the system seamlessly integrated into the bureau's existing information system.



## Customer Profile

### Company

Major Railway Bureau, China

### Industry

Railway shipping and passenger transportation

### MOTOwi4 Solution

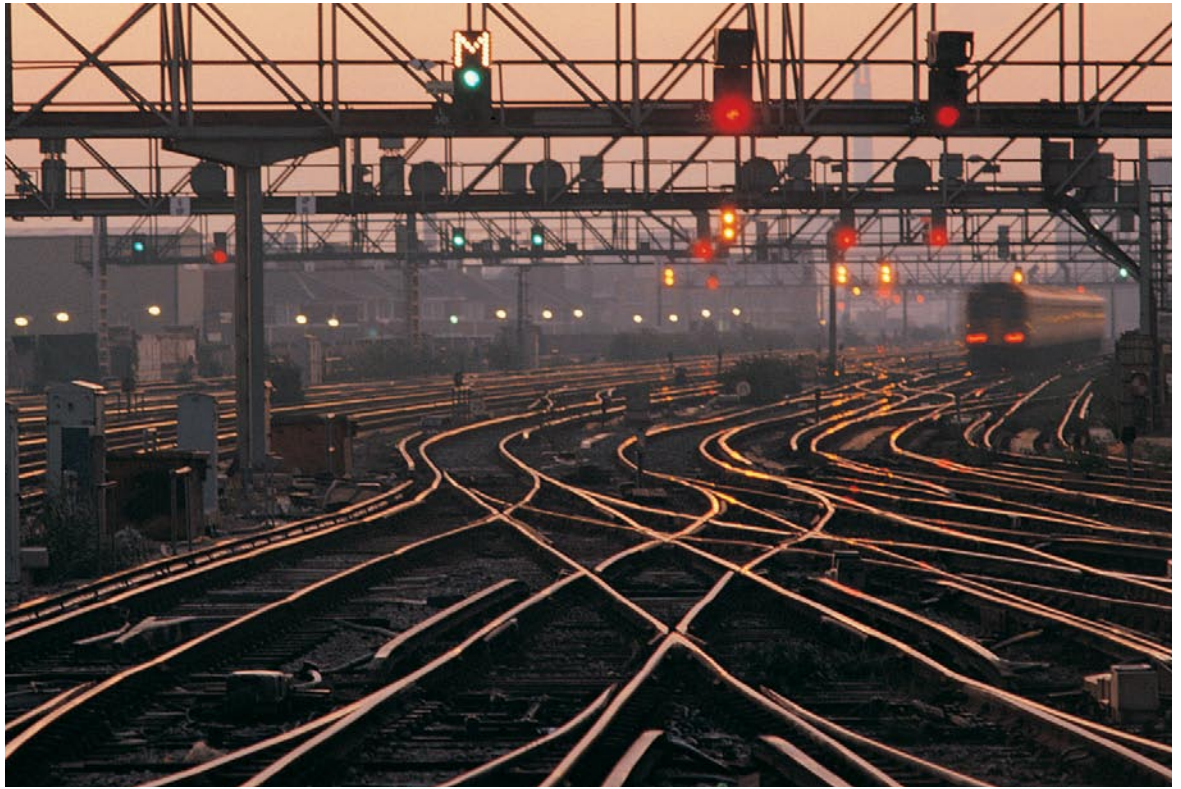
- wi4 Fixed
- Point-to-Multipoint Canopy Solution
- Point-to-Point Equipment
- wi4 Mesh Solution

### Solution Features

- High-speed wireless connectivity
- Interference- and element-resistance
- Compact size and simple installation

### Benefits

- Real-time visual monitoring
- Increased throughput
- Enhanced encryption and security



“The Motorola Point-to-Point and Canopy system has well met the rail industry’s special needs for video monitoring.”

**The benefits: easy installation, faster throughput, greater transmission stability and increased efficiency**

The bureau needed a wireless system that excelled in four specific areas. It had to deliver sufficient bandwidth to transmit clear video images over long distances, offer easy installation, be affordable and provide in-country services and support. The Motorola solution is proving exceptionally strong in each area.

The Motorola Point-to-Point and Canopy systems are meeting and exceeding bandwidth requirements, providing high-stability transmissions over significant distances. The PTP 100 Series modules have a maximum transmission distance of 56 kilometers, a benchmark competing wireless solutions found difficult to measure up to.

Motorola Point-to-Point and Canopy devices are compact in size and offer easy installation, testing and debugging, with all network administration

and problem-diagnostic functionality embedded. Important to the bureau, they are also designed without the need for indoor units, substantially reducing expenses by eliminating the need for a costly machine room in each station.

The Motorola system provides exceptionally stable bandwidth regardless of the number of users and the average load. The system can dynamically control bandwidth through its Prizm element management system, increasing throughput in heavy loading scenarios. The system also supports dynamic updating of the encryption key to enhance security. Exceptional support and service are assured by Motorola’s service networks that have been established all across China.



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