

## I D C C A S E S T U D Y

---

# Achieving Mission-Critical Communications for the Beijing Municipal Public Security Bureau

Sponsored by: [Motorola](#)

---

Freda Tong  
May 2010

### Overview

In an effort to ensure a "safe and technologically enabled" Beijing 2008 Summer Olympics, the Beijing Municipal Public Security Bureau adopted the Motorola 350MHz TETRA Digital Trunked Radio solution for its mission-critical telecommunications needs. The system was installed prior to the run-up to the Olympics event so as to ensure the smooth operations and deployment of security forces at major Olympic venues as well as designated routes that were being patrolled by the police. With a reliable and swift response capacity, the system continued to meet exceptional and secured telecommunications standards for other major national events such as the National Day Military Parade. To date, the system has scaled up suitably to meet the Beijing Police Bureau's mission-critical telecommunications demands. For instance, enhancing its dynamic social security efforts and invigorating its ongoing public safety initiatives.

With the successful implementation of the 350MHz TETRA Digital Trunked Radio Communications solution, the Beijing Municipal Public Security Bureau is actively promoting the solution to a wider area of its public safety and security functions.

### Analyzing the Solution

Motorola's TETRA Digital Trunking platform is certified and widely approved by China's Ministry of Information Technology, now known as the Ministry of Industry and Information Technology. The prevalence of the TETRA system and terminals in Beijing's public security and safety landscape is testament of the system's resilience and competence. To date, more than 10 subway and light rail transportation networks in Beijing, including the airport express light rail have adopted Motorola's TETRA systems as their main source of operational communications.

During the Beijing 2008 Summer Olympics, Motorola's TETRA system was extensively deployed in both the vicinity of the Olympic venues and various strategic locations within the city. The system provided mission-critical communications which aided the public safety

operations, especially during major public events such as the opening and closing ceremonies of the Olympics.

Notably, the 350MHz TETRA Digital Trunked Radio Communications system covered a total of 33 Olympic competition venues. These included the main Olympic stadium and the routes that were used by Olympic-related events. Serving as the main network trunk for the wireless communication deployment and coordination during the opening ceremony of the Olympics and Paralympics, the TETRA system ensured the efficient provision of stringent security services and protection of VIPs. This contributed outstandingly towards realizing a safe and reliable wireless command and control ecosystem.

## **Challenges**

The Beijing Police Bureau's main communication systems were based on analog trunking technologies until 2005, when it joined the Beijing municipal government's shared 800MHz TETRA wireless communications network and upgraded to the digital communications system within the city. It did, however, continue using analog communications systems in the other regions. With the rapidly evolving social security demands for improved public safety and security standards, and the fast approaching major international events such as the Olympics and the 60<sup>th</sup> National Day Military Parade, the Beijing Police Force needed to upgrade to a more advanced and exclusive trunked digital communications system so as to address the limitations of the existing system. The key challenges and objectives were:

- **Swift police response crucial to managing the dynamic social security situation**

Beijing's fast-growing economy driven by continuous developments in the market and economic openness, coupled with a large mobile population, are placing huge constraints and demands on social security initiatives as well as public safety and security enforcement. In order to cope with these growing social pressures, the Beijing Police Bureau had to improve the speed of its deployment and coordination response so as to swiftly dispatch sufficient resources to deal with emergency events effectively.

- **Meeting Beijing Police's comprehensive security work obligations**

In order to meet the growing citizenry demands for increased crime prevention and control, and the need to detail operational guidelines to boost the strike efforts of its forces, the Beijing Police Bureau set up a comprehensive public safety and security network comprising police patrols, community and corporate internal units. However, a higher level of proficiency and stability of this network would require the right technologies. For example, a stable trunked digital communication system and a robust video surveillance system would greatly improve the daily operations and efficiency of the Police Bureau.

- **Maintaining exceptional levels of security coordination and deployment during the 2008 Summer Olympics and other major state events**

Security coverage for the Olympics spanned a huge geographical location, requiring a highly complex and secured environment enabled by mission-critical technologies. At the core of the security coordination and command setup, the wireless communications system must be able to cover all areas under surveillance. The system would need to seamlessly manage both the deployment of security forces on the ground as well as the airborne security forces assigned to helicopters. Besides the Beijing 2008 Summer Olympics, there were other major events in the capital city of Beijing, such as the National Day Military Parade and the annual National People's Congress and Chinese People's Political Consultative Conference which required crucial homeland security coverage. In order to provide the mandatory security obligations for these important events, the smooth operation of the public security communication systems was fundamental towards the successful daily operations of the Beijing Police Bureau.

## **Solutions**

Motorola, with its vast experience and expertise, provided a complete suite of solutions to the Beijing Police Bureau for the deployment of its 350MHz TETRA Digital Trunked Radio Communications system. The installation of this complex communications system started in March 2008 and was successfully completed within a short period of three months. Notably, the system played a key role in boosting public security and safety communications – not only during the Olympics but in subsequent major state events – and in enhancing the daily operations of the Beijing Police Bureau.

### **1. Customer Needs**

As the Motorola 350MHz TETRA Digital Trunked Radio Communications system was only used exclusively by the Beijing Police Bureau, there were several agency-specific requirements that needed to be addressed:

- **Sustaining the regular day-to-day policing prerequisites**

Prior to the implementation of Motorola's 350MHz TETRA Digital Trunked Radio Communications solution, the Beijing Police Bureau's previous analog system was often at maximum capacity and could not meet Beijing's growing social security requirement for an efficient communications system that could provide swift response. Thus, a key requirement of the new radio communications system was the ability to scale satisfactorily to the ever increasing needs for public safety and security.

- **Ensuring seamless communication for the Olympics' security operations**

The Olympics events involved a massive deployment of security personnel, which would lead to an unexpected surge in public safety and security communications volume. In order

to ensure trouble-free and seamless wireless dispatch and coordination work of the security forces, the Beijing Police Bureau installed a 350MHz Digital Trunked Radio Communication system that Motorola provided for its exclusive use.

- **Meeting more stringent security requirements during the Olympics and other major state events**

During the Olympics and other major state occasions, many strategic locations in the city were designated as priority security areas by the Beijing Police Bureau. Thus, it was vital that the wireless communications services had the capacity to cover these areas despite the complexity of such security tasks. There was also a critical need for a robust and highly reliable wireless communication system, as it was clear that there was no room for communication glitches and jamming issues at these critical locations.

- **Complex electromagnetic environment demanded higher coverage and capacity competence**

The electromagnetic environment in Beijing is known to be more complex as compared to many other places. This exerted a stronger impact and disturbance on the communications networks available and raised more stringent competence requirements on the coverage capacity of the 350MHz TETRA Digital Trunked Communication system.

## ***2. Motorola's Advantages***

- **Excellent system performance**

According to Beijing Police, Motorola's TETRA Digital Trunked Radio Communications system is the most advanced system that it has seen. Its Chinese language interface is customized for users in China. Its high reliability and swift response capability dispelled any concerns the Beijing Police had about its network and equipment dependability. Equipped with IP configuration capability, Motorola's TETRA system can be easily and seamlessly docked with other information systems adopted by the Beijing Police. To illustrate this, it can be connected with the geographical information system to help the Beijing Police Bureau deploy its manpower to where its services are needed.

- **Providing a portfolio of products and outstanding mobile terminal equipment**

As the industry leader in the digital trunked radio communications industry, Motorola demonstrated its strong capabilities and provided a complete line of products and services for the 350MHz TETRA Digital Trunked Radio Communication solution. This included base stations, switches, terminals and other related accessories. Motorola's systems are technologically precise, ensuring its terminal equipment meet the rigorous requirements in mission-critical public security situations. Notably, these systems have demonstrated outstanding performance during its "live" missions.

- **Good understanding of customer needs**

Having served the local public safety and security sector for decades, Motorola demonstrated a thorough understanding of the operational and business needs of China's Police Force. To date, it has spearheaded numerous customized and leading-edge solutions such as the mobile base station and the multi-switching center. These initiatives have successfully complied with the Beijing Police Bureau's stringent security requirements for both enhancing its daily policing operations, and ensuring the smooth management of major events such as the Olympics.

- **Highly specialized and trained technical support service**

Motorola's long-term cooperation with the Beijing Police Bureau also gained numerous accolades for the excellent technical professionalism and dedication of its well-trained staff. During project implementations, Motorola provided ample technical staff support so as to ensure a smooth and speedy execution of the tasks required. In addition, the company also prepares its equipment prior to receiving formal orders, which essentially shortens the project's delivery time. After final delivery of the equipment, Motorola continues to work closely with its customers to ensure that efficient communications service are delivered, especially during the operations of major events such as the Olympics.

## **Achievements and Benefits**

Since the deployment of the 350MHz TETRA Digital Radio Communications system, the Beijing Police Bureau has successfully met its objectives of providing mission-critical public safety enforcement for major national events like the Beijing 2008 Summer Olympics, the 60<sup>th</sup> National Day Military Parade, and the annual National People's Congress and Chinese People's Political Consultative Conference. In addition, the system has demonstrated multi-pronged advantages in enhancing the Bureau's daily public safety and security operations.

- **Exceptional performance during the Olympics and other major state events**

Motorola's 350MHz TETRA Digital Trunked Radio Communications system did not give way to any technical glitches and communications jamming issues during the duration of the Olympics. This helped guarantee the successful operations of the Summer Olympics and Paralympics. Moreover, it also pulled off a seamless operational performance during other major national events such as 60<sup>th</sup> National Day Military Parade and the annual National People's Congress and Chinese People's Political Consultative Conference. Such an extraordinary track record is testament of the system's high quality and reliability.

- **Improving the Beijing Police's daily communications capabilities**

As a system that would continue to be in service after the Olympics, Motorola's TETRA system demonstrated its strengths in the following aspects:

- Compared with the previous analog communications system, the 350MHz TETRA Digital Trunked Radio Communications system has a higher frequency bandwidth, a tougher disturbance-proof ability, better voice quality, and faster response speed.
  - Operating in parallel with the Beijing Police's existing 800MHz government wireless communication system, the TETRA system has improved the overall reliability and flow of the whole public safety and security communication systems as each play to the other's strengths.
  - The 350MHz TETRA Digital Trunked Radio Communications system has better functionality and performance adaptability for its terminal equipment. This has further improved the special operational requirements posed by policing work.
- **Serving as an interoperable platform where the Beijing Police Bureau can develop other applications**

The Motorola 350MHz Digital Trunked Radio Communications system was custom built by the Beijing Police Bureau as its main mobile police communication system. Therefore, the Beijing Police Bureau can create unique applications based on the system so as to address its distinctive functional needs. This will lead to improved operational management and ease the implementation of precise management practices.

## **Future Planning**

As the first Police Bureau to have successfully deployed the Motorola 350MHz TETRA Digital Trunked Communications system, the Beijing Police Bureau will look into further applications that will enable it to fully exploit and continually improve on the existing system. This is expected to bring about a heightened level of operational readiness to the Beijing Municipal Public Security Bureau's public safety and security objectives.

## **Methodology**

The project and company information contained in this document was provided by the Beijing Municipal Public Security Bureau. Additional supplementary information was also provided by Motorola Inc.

---

A B O U T T H I S P U B L I C A T I O N

This publication was produced by Government Insights Go-to-Market Services. The opinion, analysis, and research results presented herein are drawn from more detailed research and analysis independently conducted and published by Government Insights, unless specific vendor sponsorship is noted. Government Insights Go-to-Market Services makes Government Insights content available in a wide range of formats for distribution by various companies. A license to distribute Government Insights content does not imply endorsement of or opinion about the licensee.

C O P Y R I G H T A N D R E S T R I C T I O N S

Any Government Insights information or reference to Government Insights that is to be used in advertising, press releases, or promotional materials requires prior written approval from Government Insights. For permission requests contact the GMS information line at 65-6829-7757 or [gmsap@idc.com](mailto:gmsap@idc.com).

Asia/Pacific Headquarters: 80 Anson Road, #38-00 Fuji Xerox Towers P.65.6226.0330 F.65.6220.6116 [www.idc-gi.com](http://www.idc-gi.com)