



## Westinghouse Rail Systems

### Metro Line 5 in Beijing, China

#### THE CHALLENGE

The Beijing subway system has always held a special place in the minds of the Chinese. Built in the 1960s, it was the nation's first subway network and still stands as a testament to China's modern future. The system, which services a population of more than seven million people, currently boasts four major lines – with another 11 lines opening in preparation for the 2008 Olympic Games.

Among these new lines is the Metro Line 5, a 27.6-kilometer rail route that is the first Beijing subway line to run through the city on a north/south axis. The state-of-the-art line offers the latest high-tech capabilities to a range of Beijing residents, including the personnel in charge of operating the line.

For these vital workers, the system offers an extremely powerful command-and-control capability – one that integrates several automation functions into a single offering with a common human-machine interface. Such highly advanced technology makes it possible to unify the wide assortments of control systems governing disparate functions like traction, power, station automation and emergency services.

#### THE SOLUTION

To build such a well-integrated command system, Beijing turned to Westinghouse Rail Systems and its graphics partners at Kinesix, a move that proved to be especially effective since the two companies had already collaborated on several mass-transit projects in East Asia, including Hong Kong's subway system and commuter-train network.

Working together, Westinghouse Rail Systems & Kinesix developed a unique and powerful command-and-control system for Beijing known as the Integrated Supervisory Control System (ISCS). The ISCS allows personnel in the subway's operational center to view multiple systems simultaneously and easily – which means they are able to understand exactly what is happening across the entire subway line at all times.

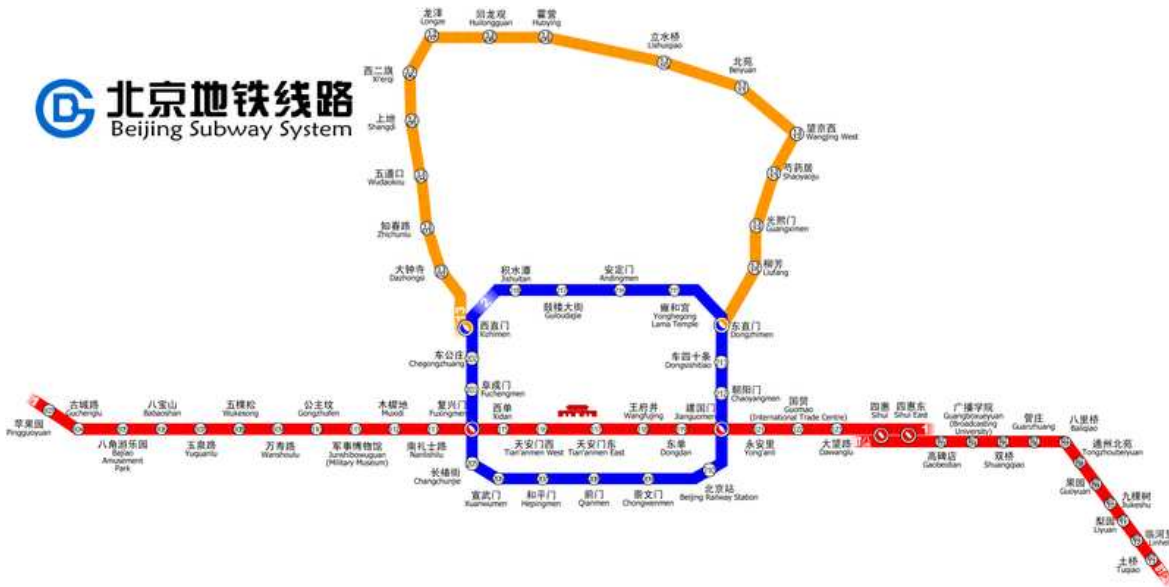


*“Integrating numerous control functions into a single operational system requires a human-machine interface capable of displaying huge volumes of streaming data across dozens of workstations. Fortunately, Kinesix’s Sammi software has made it possible for Beijing to do just that, offering capabilities that meet very demanding requirements.”*

Ian Whitehead  
Project Manager  
Westinghouse Rail Systems

- **Industry:**  
Intelligent Transportation
- **Application:**  
Subway Control operations
- **Benefits:**
  - ◆ Allows users to view multiple systems simultaneously across numerous workstations.
  - ◆ Supports 1,600 graphics – including those based on Chinese characters.
  - ◆ Enables better daily-operating efficiencies and faster and more controlled responses.

A key element of this capability is this system's graphical-user interface, which is based on Kinesix's well-established Sammi product. Thanks to Sammi, the system allows workers in the subway-control center to access more than 1,200 Chinese-language displays, including full color charts, graphs, meters, buttons, scales, menus and maps. This extremely large set of displays is part and parcel to the ISCS's capabilities, mainly because it allows personnel to view key data for multiple systems and train stations in numerous configurations.



What's more, Sammi uses a highly sophisticated runtime engine to ensure that Beijing workers are able to use these graphics across dozens of synchronized workstations in near real time. This runtime engine is considered to be extremely powerful – largely because of its ability to process large amounts of back-end data from the various subway control systems at once, feeding this data into any of the 1,200 graphics supported by the ISCS.

Because of this capability, all control workers can access the information they need quickly and effectively using compelling graphical displays. The end result is better daily-operating efficiencies and faster, more controlled responses to incidents on the railway.

### About Kinesix

Kinesix Software develops, markets and supports software development tools used to rapidly deploy client/server and Web-based visualization and control systems with real-time, interactive graphics. Kinesix has supplied graphical interface solutions to aerospace, process control, medical and intelligent transportation applications around the world.

Sammi® is a registered trademark of Kinesix Software.