

Shenzhen Metro, China

Hytera Serves the Top 10 Worldwide Busiest Metro

User
Shenzhen Metro, China

Market segment
Metro

Project time
2014

Products
Hytera TETRA Solution
ACCESSNET-T IP
Hytera DMR Trunking Pro
72 DIB-500 Base Stations
72 DS6210 Base Stations
2 IPN switch nodes
1 DMR switch center
2450 Portable Radios
80 Fixed Stations
266 Train-bornes

DS-6210 Trunking Base Station



Background >>

Shenzhen is one of the largest cities in china and Shenzhen Metro is the top 10 worldwide busiest metro with more than 1 billion passengers every year. The high traffic volume requires a stable and powerful communication system to ensure a smooth operation.

Hytera was awarded the contract , Shenzhen metro phase III (Line 7,9,11) with total 108 kilometers and 69 metro stations, to deliver a TETRA digital radio communication system(800Mhz) with ACCESSNET-T IP technology for Train routing operation and DMR trunking system(400Mhz) for station service management.

Challenges >>

Providing a cross-system radio communication interface between phase III TETRA radio system and existing lines' TETRA radio system built by the other manufacturer was the first problem Hytera met .

Besides this, the integration of TETRA system with a new operation control center (NOCC) and the migration of the existing line network and control center during Metro operation is also a big challenge.



Solutions

Hytera ACCESSNET-T IP mobile radio system for the Shenzhen metro mainly consists of:

- 72 base stations are connected to the switching node via the IP backbone.
- 2 IPN switch nodes are redundant to each other. The failure of one IPN site will not affect the radio operation.
- The newly-built OCC includes 27 multi-user customized dispatcher systems to meet their high level requirements.
- 1500 portables, 80 fixed stations and 266 train-borne.

Hytera will also provide DMR Trunking products for station service management like security, cleaning and station staff, with 1 set DMR switch center, 72 BSs, 1950 portables.

Both TETRA and DMR signal will be combined transmitting by leaky coaxial cables (LCX) along whole elevated viaduct and underground tunnel trackside to ensure good signal coupling and constant line of sight between transmitter and receiver.

Highlights

1. Comprehensive range of redundancy

The particularity of the system for Shenzhen Metro is the high-level reliability which is achieved by Geographical redundancy of the switching unit, redundancy of control channel and fallback operation of the base stations. It allows continuously voice and data communication even in the event of failure of entire sites.

2. One stop service

Whatever the needs or the challenges of the MRT customers they have, Hytera can offer sincere and tailored solutions for their radio communications with complete MRT product line, including the standard TETRA infrastructure, dispatcher & train-borne, plus abundant coverage design and on-site experience in the process of construction.

3. Interface to other TETRA system

A strong point of our solution is that necessary voice/message service between the existing network and Hytera TETRA network can be realized, using the client's existing mobile radio terminal connected to our multifunctional server equipped with A-CAPI software interface.



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