Hytera ACCESSNET®-T IP for Safe Roads in Germany

The Highway Services of Saxony Rely on Hytera Mobilfunk

User
The highway services of the Free State of Saxony, Gremany

Market segment
Highway

Project time
2009

Products
ACCESSNET®-T IP

Solution features

- Turnkey TETRA-based mobile communication solution for managing voice and data traffic
- Integrated fleet management system
- IP wire control stations Repeater for tunnel supply

Background

The highway services of the Free State of Saxony in Germany are responsible for 531 kilometers of highway. It features seven highway maintenance depots that are responsible for the operations service. The increasing traffic and the resulting increase in maintenance and service tasks require a more effective communication between all the task forces than before. For this reason, the highway services entrusted Hytera Mobilfunk GmbH, formerly known as Rohde & Schwarz Professional Mobile Radio GmbH in 2009 to act as main contractor and replace the existing analog system with IP-based digital wireless technology according to the international TETRA standard.

Customer Demands

Increasing traffic density for the highway maintenance depots means a higher amount of services: The number of emergency calls and accidents grows, maintenance and construction work increases, snow removal and spreader services must be performed even faster and, at the same time, cover larger areas. That requires a reliable, fast and effective coordination of all task forces. A prerequisite is a reliable voice and data communication system that connects the central office, the respective base on site and the mobile task force units on the roads.

Consequently, the highway services of Saxony considered our TETRA wireless system ACCESSNET-T IP as the only ideal solution. The IP-based networking utilizes already existing locations as well as IP connection paths, thereby significantly reducing the costs for setting up the entire system. In particular, ACCESSNET-T IP easily adapts itself to all requirements: It can be expanded flexibly, its non-hierarchical network structure is topologically independent, it offers the highest possible fault tolerance through intelligent redundancy functions and robust system design.

Hytera Appealing Solution

For the highway services of Saxony, we implemented an individually tailored ACCESSNET-T network according to the TETRA standard. At the centre are seven switching nodes – one for each highway maintenance depot. Each of these units can operate independently in case of system failures and, thanks to the highly redundant concept, take over the tasks of failed switching nodes. After fault removal, the switching nodes synchronize themselves so that all the data continue to be available. The switching nodes organize the entire traffic of all 28 base stations and support a total of 56 TETRA carriers.

In addition, we integrated special applications into the digital wireless system upon request from the highway services of Saxony: IP wire control stations, repeaters for the tunnel supply as well as a field-oriented, decentralized fleet management system. It ensures every highway maintenance depot that it has quick access and full control, specifically over its portion of the vehicle fleet.

Highlights of Hytera Solution

- Highly redundant implementation of all mobile services switching centers and base stations
- Communication in network areas even if a complete mobile services switching centre fails
- Connection of the gateway to private automatic branch exchanges and the public switched telephone network (PABX/PSTN Gateway) to Cisco Call Manager via SIP (Session Initiation Protocol)
- Central network monitoring as well as fast fault diagnostics and removal from the workplace

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