Case Study

ACCESSNET®-T IP for safe roads.

The highway services of Saxony rely on Hytera

Highway services Saxony: Facts and data

Responsible for:
- 531 km of highways, 661 bridges, 6 tunnels, 397 road-sign bridges, 222 noise barriers

Highways in Saxony:
- A4, A9, A13, A14, A17, A38, A72 with an area of 750,000 sqm

Organisation:
- Highway services head quarter, 7 highway maintenance depots and 1 telecommunication depot

Business vertical
Industry / Public Safety

Project Schedule
2010

Products
- IP-based TETRA radio system ACCESSNET-T IP
- TETRA base station DIB-500 R4.1
- TETRA switching and controller node IP Node (IPN)
- Network Management System NMS-500
- Fleet management system with AVL/GIS
- Line dispazcher

Developed for the highway services of Saxony:
- Turnkey TETRA-based mobile communication solution for managing voice and data traffic
- Integrated fleet management system
- IP wire control stations
- Repeater for tunnel supply

ACCESSNET®-T IP for safe roads.

The highway services of the Free State of Saxony is 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 us in 2009 to act as main contractor and replace the existing analogue operational wireless system with IP-based digital wireless technology according to the international TETRA standard.

An appealing solution

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.

As the main contractor of this project, everything was in our control at all times from planning up to commissioning. That allowed us to tailor the project to the demand of our customer without any compromise – and reduce his organizational effort to a minimum.

The details of our mobile radio 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 organise 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.

TETRA for Saxony: Highlights of our solution

- Highly redundant implementation of all mobile services switching centres 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



Exactly what you need: Solutions from Hytera Mobilfunk GmbH

Each of our mobile radio systems is a tailored solution with optimal performance. No matter how tough the conditions are. Or from which manufacturer the mobile stations are.
Customers in 40 countries on four continents are already using our solutions: in industry, oil and gas business, public safety and local public transport, at airports and for military applications. Besides first-class technology from Hytera, they treasure particularly one aspect: our comprehensive, customer-based project management with which we solve problems before they occur.

For more information please visit www.hytera.de/en
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