KÖR travels well with us.

Hytera
Respond & Achieve

North-Rhine Westphalian local public transport cooperation relies on ACCESSNET®-T.

In the Eastern Ruhr Area Cooperative (Kooperation Östliches Ruhrgebiet , KÖR), three transport operators and a group of companies are working closely together: the Bochum-Gelsenkirchener Straßenbahnen AG (BOGESTRA, trams of Bochum-Gelsenkirchen), the Straßenbahn Herne-Castrop-Rauxel GmbH (HCR, trams of Herne-Castrop-Rauxel), the Vestische Straßenbahnen GmbH (Vestian, trams of Recklinghausen region) and the Dortmunder Stadtwerke (DSW21, Dortmund municipal works).

In 2006, KÖR decided to raise its voice and data communication to the digital TETRA standard. Their order for us: to optimize the output and performance of their existing ITCS dispatch centre application (Intermodal Transport Control System) with the help of a powerful ACCESSNET®-T mobile radio solution.

Mission accomplished

The ITCS of KÖR coordinates all the busses, trams and underground trains using a computer-controlled traffic management system. It controls the voice and data communication between dispatch centres and vehicles. For this purpose, the ITCS also integrates status and location data of the vehicles from AVLS and GIS applications.

KÖR handles one of the largest and most frequently used local public transport networks in Germany. A smooth operation and intelligent integration of the ITCS impose high demands on the mobile radio network: It must be able to integrate a multitude of users as well as quickly process enormous quantities of information and formats. At the same time, it must be robust, interference-resistant, safe against manipulations and expandable.

For this reason, there was hardly a way for KÖR to get around our ACCESSNET®-T mobile radio solution. It is nearly endlessly scalable and covers all the network units from the control centre down to the individual radio transceiver. It fits perfectly into the existing system technology, ensures maximum security in the voice and data communication, optimizes the data management and also integrates non-system components.

But any technology is only as good as the concept behind it. Particularly at this point, we were able to demonstrate all of our strength: our know-how in comprehensive project management and our close proximity to the customer which allows us to recognise individual demand and implement it in tailored solutions.

Developed for KÖR – a selection:

I TETRA-based mobile communication solution for managing voice and data traffic
I Integration of the control centres and traffic management systems
I IBIS on-board computer
I Dynamic passenger information
I Traffic signal control
I Telemetry online functions (e.g. integration of sensor data)
I Dynamic advertising in trams and busses
I Slow-scan video transmission to control centres in emergencies
I New cash systems for non-cash payment.

The details of our mobile radio solution

After a detailed inventory and demand analysis, we implemented an individual ACCESSNET®-T network according to the TETRA standard for KÖR. The core of the system is formed by two central switching nodes.
They work redundantly, i.e. if one fails, the other automatically takes over its functions to prevent breakdowns.

Together, both switching nodes check a total of 28 base stations in indoor and outdoor operation. As requested by KÖR, each station features two or three TETRA carriers, giving the entire network over 60.

We coupled the ITCS to the control centres, which are independent of each other, of the three KÖR transport operators. Each includes ten AVLS and GIS-compatible dispatcher workstations.

Flexible, secure, multi-compatible

The network management of Rohde & Schwarz is just as well thought-out as the structure of this powerful system. With a view to the highest operational security, we organized it decentrally: The software application can be operated from four different service and maintenance centres and connected with the ACCESSNET®-T network via WAN.

The trunked radio network of KÖR features over 1000 radio terminals in form of on-board systems and handheld devices. The storage of information – important for analysis and documentation purposes – is reliably accomplished by the TETRA voice recorder. Similar to the A-CAPI® interface, it is redundantly connected to the TETRA system and ensures a smooth recording of the data even if a voice recorder should fail.

TETRA for KÖR: Highlights of our solution

❙ Region-based group communication for efficient utilisation of local resources
❙ SDS transmission to active terminals in group communication
❙ Optimization of the entire network for high data load (SDS) by using secondary control channels (SCCH)
❙ Pre-emptive calls in group communication
❙ Late Entry
❙ Concurrent emergency call transmission to various recipients; this allows emergency information to reach the correct recipient at all times
❙ Packet data transmission

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 37 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 the first-class technology delivered by us, they treasure particularly one aspect: our comprehensive, customer-based project management with which we solve problems before they occur.

Local public transport of KÖR: Facts and data

❙ Population in the area of operation:	> 2.2 mill.
❙ Employees in KÖR operations:	3,650
❙ Lines:	149
❙ Busses:	4.154
❙ Railway vehicles:	226
❙ Total length of network:	2,191 km
❙ Passengers:	277.2 mill./year