RheinEnergie AG, Köln

The first IP-capable TETRA system in Germany

MOTOROLA

> "The decisive factors in the granting of the order were the professional quotation and the most economic overall concept."
>
> Jost Hermanns, manager of the IT production center and project manager at RheinEnergie AG

Background

RheinEnergie AG is the fifth largest utility company in Germany. It has a responsibility to around 2.5 million people as well as industry, trade and commerce in terms of the supply of electricity, gas, water, central and district heating. With the changes in the requirements of the European energy market, RheinEnergie AG has developed from being a local energy and water supplier, GEW Köln, to become a regional services provider, and is asserting itself well in the European environment. Today RheinEnergie AG provides employment for almost 3,000 people and in conjunction with regional partners is making a substantial contribution to the economic strength of the Rhine region.

It is vital for an energy provider to respond immediately in the event of faults. This means that reliable and secure voice communication with unrestricted and guaranteed access to the communications structure is indispensable for effective fault management. The option of integrating data applications is a guarantee of being equipped for the future. In order to optimize its repair and service processes, RheinEnergie made a decision in mid-2004 to deploy a TETRA digital wireless network. TETRA trunking was the only technology which met all of the requirements of the tender.

The digital wireless network with 18 base stations has been ready for operation since May 2005 and covers the whole supply region of RheinEnergie AG. It will be used initially in the services area. Fault management and data transmission of telemetric applications will be implemented in a second phase.

CUSTOMER NEEDS

In order to assert itself on the European energy market and to guarantee the trouble-free supply to a whole region, the following factors were decisive for RheinEnergie AG:

• High availability of the system

• Duplex telephony

• Individual scalability as required by the release of additional traffic channels

• Future implementation of data applications

• Provision of voice and data applications for external users such as the Municipal Public Order Office of the City of Cologne

RheinEnergie

With the introduction of the TETRA digital wireless network RheinEnergie AG intends to set up a security platform which, particularly in the case of desasters, will guarantee unrestricted access to the communications platform.

The benefits

- Independence of public network operators (e.g. GSM)

- Full access to infrastructure and the provision of redundancies ensures communications reliability, particularly in the case of serious faults such as power outages

- Investment security through standardization and long-life of the components

- Interface compatibility with the in-house IT

- Good price-performance ratio in comparison with competitors

- Highly economical due to low overheads

- Safety of staff in the case of operational emergencies due to integrated location system

The Motorola solution

The Motorola TETRA Dimetra IP network for voice and data consists of 18 base stations, each with two base radios. It provides around 500 service employees with wireless communication: the dispatcher control system supports and optimizes the deployment of the field service staff. At present around 30 mobile radios, 350 portable radios and 30 ATEX radios are in use. All of the Motorola devices are equipped with GPS receivers. The duplex telephony feature allows the user to dial into the telephone network of RheinEnergie AG without generating any call charges.

The communication system of RheinEnergie AG was handed over after successful field tests beginning of May 2005. It is the first IP-capable TETRA system in Germany and currently the largest digital wireless system for utility companies in the German-speaking countries.

Future orientation

The network has over 21 frequencies and is equipped with a public trunking license. This means that RheinEnergie AG can expand its network to external subscribers, including its cooperative partners: around 200 employees of the Cologne Municipal Public Order Office are already joining the RheinEnergie network.

After the successful implementation of the voice transmission, RheinEnergie AG is now working on the introduction of digital data transmission.

At the end of 2005 RheinEnergie AG will introduce a new software-controlled fault management system. Control modules will then allow the control center to direct staff with optimum efficiency to exactly where they are needed, and transmit the necessary data such as circuit diagrams or measurement values in seconds. It is also planned to use modern communications laptops and handheld PDAs, which are linked to the TETRA wireless system.

Another area of application for the TETRA system will be the level measurements on the river Rhine with remote sensors (currently operated via GSM). Event-related reports will then appear in real time on the control center displays so that the controller can immediately initiate the necessary measures and trigger the corresponding telecontrol mechanisms via the TETRA wireless system. Dimetra IP builds on existing systems in the areas of telemetry and telecontrol and ensures the reliable transmission of data information.