



# RHEINENERGIE AG

TETRA DIGITAL TWO-WAY RADIO NETWORK PROVIDES A RELIABLE COMMUNICATION PLATFORM FOR SEVERAL MAJOR USERS



## THE COMPANY: RHEINENERGIE AG

RheinEnergie AG is the fifth largest energy utility company in Germany. It is responsible for supplying some 1.7 million people as well as industrial, commercial and business customers with electricity, gas and water as well as on-site and district heating systems. The changes to regulations in the European energy market have enabled RheinEnergie AG to transform itself from a local energy and water utility, GEW Köln, into a regional services provider competing successfully in the European environment. Today, RheinEnergie AG provides work for nearly 3,000 people and, in association with its regional partners, is making a significant contribution to the economic strength of the Rhine region.

### COMPANY PROFILE

#### Company

- RheinEnergie AG
- Cologne, Germany

#### Sector

- Energy sector

#### Motorola Products

- TETRA digital two-way radio system consisting of 23 base stations each with two base radios. A further 100 mobile radio devices, 550 handsets and 30 explosion-protected handsets are also in operation.

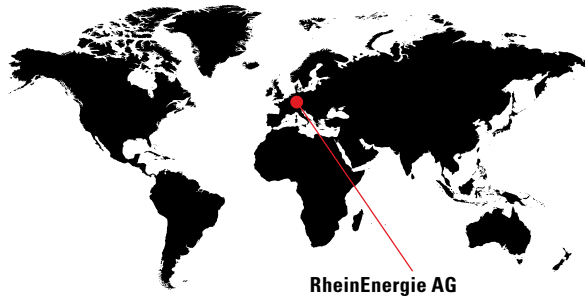
#### Partners

- PSI AG

#### Benefits

- Independence from public communication service providers and networks (e.g. GSM)
- Investment security through standardization and durability of the components
- Interfaces compatible with in-house IT systems





### THE CHALLENGE

#### Provide unrestricted channels of communication in fault management for optimum service and maintenance processes

It is vital for energy utility companies to be able to respond quickly – especially when there is a fault or disruption to the electricity supply. For effective fault management they need to be able to communicate using both voice and data transmissions with unrestricted access to the communication structure.

In order to be able to compete in the European energy market and ensure uninterrupted supplies to the Cologne region, RheinEnergie AG was looking for a new communication system, which would allow it to optimise its maintenance and service processes.

The requirements of the new system were high: it was to be available at all times, provide encrypted transmission of voice and data, support duplex telephony, permit an individual expansion of capacity through the release of additional traffic channels when required and be accessible to external subscribers such as the Municipal Public Order Office of the City of Cologne.

After a pan-European invitation to tender, RheinEnergie AG selected a TETRA (Terrestrial Trunked Radio) digital two-way radio system from Motorola. TETRA trunking was the only technology that met all the company's requirements.

### THE SOLUTION

#### TETRA digital two-way radio for undisruptive voice and data transmission

The Motorola TETRA Dimetra IP network consists of 23 base stations. It provides approximately 500 service personnel employed by RheinEnergie AG with wireless voice and data communication and supports dispatchers in controlling and deploying service field staff. In addition, 100 mobile radio devices, 550 handsets and 30 explosion-protected handsets from Motorola are also in use. All the devices are fitted 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 network implemented at RheinEnergie was the first IP-capable TETRA system in Germany. The rollout was completed in less than one year and the network handed over to RheinEnergie AG by Motorola in perfect working order. Since then, the system has provided coverage for the entire area served by the energy supplier. Initially, RheinEnergie AG used the new communication network solely in its service division. A second phase introduced applications for telecontrol, telemetry and workforce management.

**“In order to offer private and public customers the maximum security of supply, we require a reliable communication solution that allows us both to respond quickly to developing situations and coordinate our employees efficiently.”**

Jost Hermanns,  
manager of the IT Production Centre  
and project manager at RheinEnergie AG

## **THE BENEFITS**

**Flexible communication solution offers improved security and allows implementation of value added services**

The TETRA digital two-way radio network from Motorola allows RheinEnergie AG to transmit voice and data more reliably than previously – and independently of public infrastructures such as GSM networks. Full access to infrastructure and the provision of redundancies help to maintain communication channels particularly during large events and in the case of serious faults such as a power failure or disruptions to gas supplies. In addition, the system’s interfaces allow it to be integrated easily into the in-house IT infrastructure of RheinEnergie AG. Standardization and durable components manufactured to high quality standards ensure the investment security of the TETRA digital two-way radio system. Moreover, RheinEnergie AG profits from the system’s low fixed costs making it a highly cost-effective solution.

Since the end of the short introductory phase, during which RheinEnergie AG initially used the TETRA digital two-way radio network solely for voice

communication, the system is now also being used to coordinate employees. Control modules allow the control centre to direct workers precisely and with the optimum efficiency to the places where they are needed. Employees receive each new order via the on-board computer in their vehicles. These need only be accepted and the integrated route planner calculates the most direct route for the service personnel to reach their destination. At the same time, the GPS location system integrated into the radio devices offers workers additional safety during operational emergencies as the control centre knows their precise location at all times. Even important data such as circuit diagrams or measurement values can be transmitted to employees in seconds using the TETRA digital two-way radio system. Laptops and handheld PDAs linked to the TETRA wireless system for receiving the data are also available to employees alongside the on-board computers. The TETRA digital two-way radio network has 21 available frequencies and a public trunking license. This means that RheinEnergie AG can expand the network to external subscribers and its cooperative partners. As a result, the digital two-way radio network has also been used by the Municipal Public Order Office of the City of Cologne as a communication platform for its approximately 200 employees since 2005. The benefits of the system are particularly felt during major events such as carnival parades as the staff can be in constant contact with their control centre, make an emergency call at any time and, if necessary, be located by the control centre using GPS. The TETRA system operated by RheinEnergie AG is also used by the municipal water treatment works of Cologne.

**“The TETRA digital radio network gives RheinEnergie AG a security platform, which helps to provide unrestricted communication even in the case of serious faults.”**

In Autumn 2010, the TETRA network will be expanded to include the Ford car plants in Cologne where digital two-way radios will primarily be used by the units entrusted with safety and security such as the in-house fire service, security services or medical services, as they depend on an ability to communicate in real-time. They will be provided with a total of approximately 75 handsets.



Interview with Jost Hermanns, Senior Division Manager Information Technology at RheinEnergie AG, on the opportunities created by the installation of intelligent networks and the efficiency enhancements achieved using TETRA digital radio

**Mr Hermanns, in 2005, RheinEnergie AG was the first company in Germany to introduce an IP-capable TETRA digital radio system as the communication system for its employees. Five years later, what is your evaluation of the system's success?**

The decision to invest in TETRA has been completely justified. Since its introduction, the TETRA digital radio system has become indispensable to us at RheinEnergie. It has met and even exceeded all our expectations. Over recent years, we have had to deal with several major disruptions to power supplies. In each case, with the help of TETRA digital radio, we were able to respond quickly. Without the new system, these faults would certainly have resulted in major difficulties with far-reaching consequences.

**Wouldn't another modern technology have served equally well as a communication platform in these cases?**

No. TETRA digital radio is currently the only technology available on the market that meets all our requirements.

**What are your requirements? What is so special about TETRA digital radio?**

First and foremost, we require a highly reliable technology for voice and data transmission. Take the example of a serious disruption to the electricity supply. In this type of scenario, the public telephone and mobile phone networks are quickly overwhelmed by the increased traffic generated by concerned citizens. Data transmission also ceases to function or only works very slowly. In these emergency situations,

it is essential that we are able to communicate securely and reliably in real-time in order to repair the fault quickly. This is precisely what TETRA digital radio enables us to do. Moreover, the technology is amazingly flexible. It can be expanded with new voice and data applications and even offered as a service to external users.

**In your case, the Municipal Public Order Office of the City of Cologne also uses the TETRA network...**

Yes, the Municipal Public Order Office has been using our TETRA network since 2005. It is particularly appreciated during major events as it means that the control centre can communicate with its employees "on the ground" at all times and coordinate them in the most efficient way possible. But the system is also ideal for everyday use, especially as you can use the TETRA radio handsets to dial into the normal telephone network. As well as the Municipal Public Order Office, the municipal water treatment works of Cologne are also using our TETRA network. We are also discussing the possible joint use of our digital radio system with other companies close to the city authorities.

**With so many people using the system, is it still possible to ensure its reliability?**

Absolutely. Firstly, it is always possible to expand the capacity of the existing TETRA system to meet current requirements. Here, we receive excellent support from the Motorola project management and service team, so we are always in a position to respond immediately. Secondly, TETRA technology's intelligent time slot process ensures that the available voice channels are distributed automatically and therefore used efficiently. In other words, the TETRA network can serve even a large number of users as a reliable communication system.



Jost Hermanns,  
Manager of the IT Production  
Centre and project manager at  
RheinEnergie AG

For more information on how Motorola's MTP850 Radios can improve your field sales and field service operations, please visit us on the web at [www.motorola.com/tetra](http://www.motorola.com/tetra) or access our global contact directory at [www.motorola.com/Business/XU-EN/Pages/Contact\\_Us](http://www.motorola.com/Business/XU-EN/Pages/Contact_Us)