ACCESSNET®-T – the digital mobile radio system from Rohde & Schwarz

On board from the start

R&S BICK Mobilfunk, the competence center for mobile radio communication in the Rohde & Schwarz group, collaborated on the ETSI standardization of TETRA – the best insurance that *ACCESSNET®*-T professional mobile radio systems from Rohde & Schwarz conform fully to standard. Since 1995 the company has been a member of the Memorandum of Understanding (MoU), the European association of organizations sharing an interest in the promotion and implementation of TETRA, which comprises more than 80 renowned companies today (information: www.tetramou.com).

ACCESSNET®-T: unlimited scalability

The network structure of the digital mobile radio system *ACCESSNET®*-T is non-hierarchichal and subject to no topological restrictions. The system's suitability for multiprotocol applications allows it to be used as a digital platform for professional mobile radio networks that must meet high availability requirements. The high spectrum efficiency of the standard and the system ensure optimum utilization of the scarce frequency resources.

ACCESSNET®-T is extremely scalable – from a small network at a single company location all the way up to nationwide networks. Mobile radio systems from Rohde & Schwarz can be expanded to suit one's needs, no matter whether more voice capacity is needed or the network has to grow in size. Network nodes can be coupled with each other by means of digital fixed-network connections as well as by microwave link.
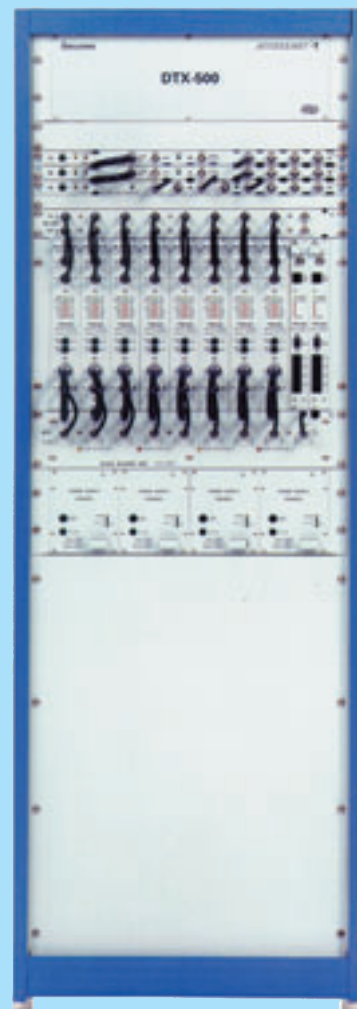

ACCESSNET®-T is extremely scalable – from a small network at a single company location all the way up to nationwide networks.

ACCESSNET®-T

… in all sizes from a single source:

From the mini-base station for outdoors (below) to large systems for nationwide networks (right): Rohde & Schwarz offers a comprehensive range of products from a single source.

Any non-Rohde & Schwarz terminal that fulfills the TETRA interoperability profile (TIP) can be operated in an *ACCESSNET*®-T mobile radio system.

TETRA Application
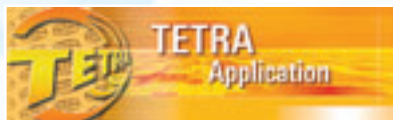
Rohde & Schwarz is one of the leading manufacturers of MPT-1327 and TETRA mobile radio systems for professional users. The company has a 70% market share of MPT-based systems, setting a standard for both performance and quality. Worldwide more than 250 000 subscribers work with mobile radio systems from Rohde & Schwarz at ministries of the interior, local transit services, airports, train stations and public network operators. This substantiates the efficiency of our single-source, all-in-one solutions:

◆ Network and project planning
◆ Exchange equipment
◆ Base stations
◆ Network management systems
◆ Applications
◆ End-to-end encryption
◆ Dispatcher systems
◆ Turnkey installation
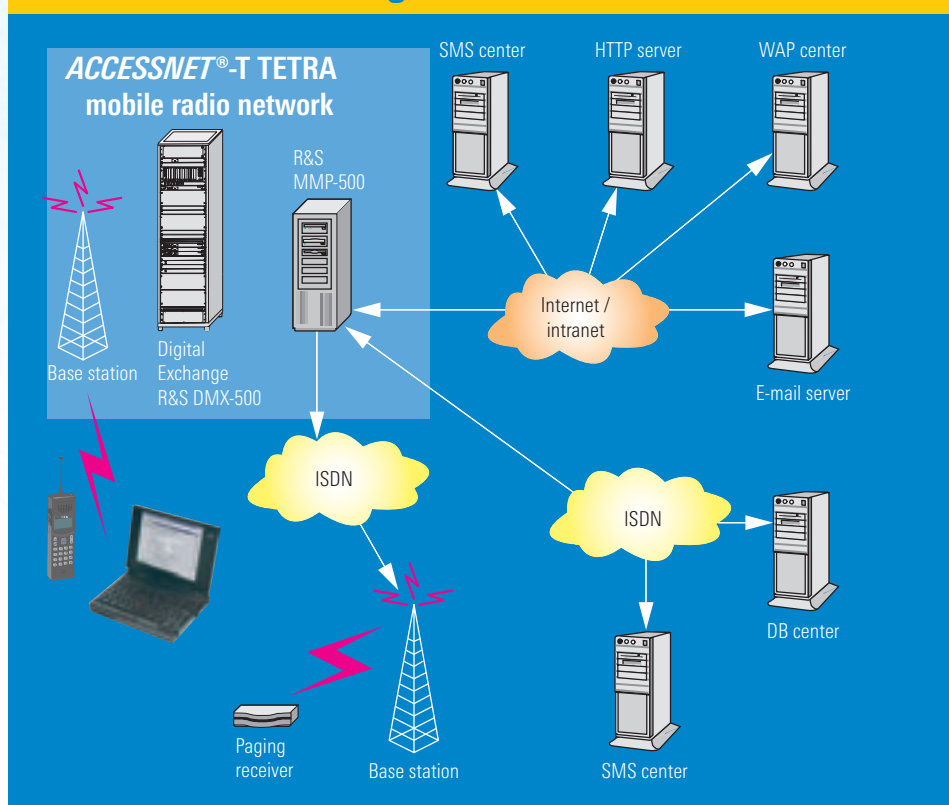
▶ Tried-and-tested and new go well together

Customers appreciate Rohde & Schwarz as a reliable partner, especially when it comes to securing their investments. This is evident in the "soft migration", the Rohde & Schwarz strategy for the transition from MPT-1327 mobile radio systems (including those of other manufacturers) to the modern digital TETRA standard. *ACCESSNET*®-T's multiprotocol capacity makes this possible, as it allows mixed MPT and TETRA user groups to co-exist side by side with the use of both technologies and provides a common subset of services.

Fit for all applications

Professional mobile radio systems have to be universally adaptable. After all, they must prove their performance with public network operators and local transit companies, at airports and train stations, for ministries of the interior and in a wide range of other applications. The basic requirement for integrating any kind of application into a TETRA network are standardized interfaces. *ACCESSNET*®-T's superb design provides the ideal conditions for its integration into any user-specific structures.

The bridge into the Internet

ACCESSNET®-T TETRA mobile radio network

Base station · Digital Exchange R&S DMX-500 · R&S MMP-500 · SMS center · HTTP server · WAP center · Internet / intranet · E-mail server · ISDN · Paging receiver · Base station · SMS center · ISDN · DB center

The Multi-Messaging Portal R&S MMP-500 connects *ACCESSNET*®-T TETRA mobile radio systems to the Internet and thus to corporate networks as well. This provides mobile subscribers using professional radio with access to information, data applications and messaging services (News from Rohde & Schwarz (2003) No. 177, pp 4–5).

More information, brochures and data sheets at www.rsbick.de (search term: ACCESSNET)

ACCESSNET®-T

… securely encrypted:

Comprehensive encryption with Rohde & Schwarz

Encryption on the air interface is standard with TETRA. However, this does not cover the entire transmission path from subscriber to subscriber.
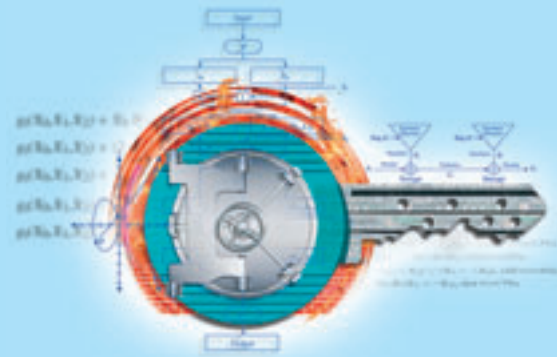
For encryption along the entire transmission link, Rohde & Schwarz provides comprehensive solutions for *ACCESSNET*®-T. Rohde & Schwarz SIT GmbH, the Rohde & Schwarz subsidiary that specializes in security in information technology, is Germany's largest supplier of professional encryption methods. It is developing a base system for end-to-end encryption for TETRA radio systems (see box at right).

Examples of the numerous mobile radio networks set up by Rohde & Schwarz on pages 10 to 13.

End-to-end encryption for TETRA from Rohde & Schwarz

The base system for TETRA end-to-end encryption features, for example, full-duplex voice encryption, SDS (short data service) encryption and loadable crypto algorithms.

The base system concept ensures users maximum flexibility:
◆ The concept's modular design makes it possible to integrate user-specific requirements by cost-efficient adaptation of developments using the base system.
◆ The concept uses intelligent chip-cards (smart cards) of the latest generation as a security module and is therefore largely hardware-independent, for the only thing that terminal equipment manufacturers need to do is adapt the equipment software. Hardware modifications are not necessary for terminals equipped with a SIM card interface, which allows new equipment to be introduced at a favourable price.

Advantages of the smart card solution from Rohde & Schwarz

Flexible and economical
◆ Complete single-source TETRA network and encryption package from Rohde & Schwarz
◆ End-to-end encryption independent of the terminal manufacturer
◆ Loading of user-specific crypto algorithms

◆ User-specific requirements can be integrated by means of cost-effective adaptation of developments
◆ Smart cards are easily replaceable and allow battery-saving operation

High degree of confidentiality
◆ The smart card solution for end-to-end encryption is supported by Germany's Federal Office for Information Security (BSI)
◆ Compatible with the requirements of the Schengen agreement

Reliable perspective for the future
◆ The smart card technology is largely standardized (ISO, ETSI)
◆ The further development of smart card technology provides a safe basis for investment
◆ Smart cards are a recognized technology in other radio networks