

Complete radio solution for Bangkok's underground train system

For years, the inhabitants of Bangkok have been suffering from daily traffic chaos. To tackle this problem, the Thai government drafted ambitious plans to build an underground train system. Siemens was commissioned to provide the trains and infrastructure, including signalling technology, power supply, depot equipment and communications system. Siemens in turn contracted R&S BICK Mobilfunk GmbH to furnish a complete radiocommunications solution, consisting of the *ACCESSNET*^{®-T} TETRA mobile radio system, a control center and the radiocommunications equipment on the trains.

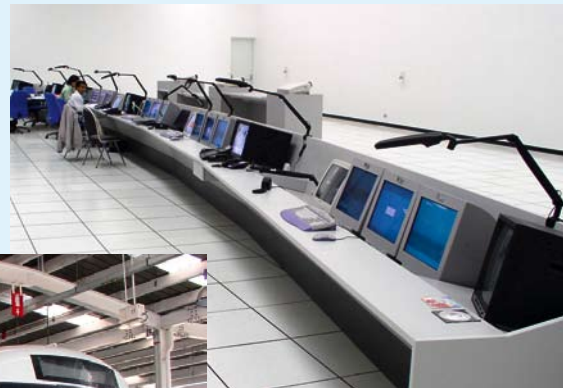
Reliable means of communication are indispensable for operating an underground train system. The people in charge of planning Bangkok's underground project therefore selected the *ACCESSNET*^{®-T} TETRA mobile radio system from Rohde & Schwarz, which can cite numerous reference projects in which the system has fulfilled maximum security requirements. In Bangkok, the system was once again able to prove its flexibility.

The local TETRA mobile radio system consists of an exchange and several radio base stations. A network management system and clients were provided for managing the network. They are used to quickly adapt the system's configuration to altered conditions. All communications with train conductors and underground staff are handled via a control center. For security reasons, seamless traceability of all radiocommunications had to be ensured, which is why voice recording was integrated. Implementation was no problem owing to the ACAPI interface in *ACCESSNET*^{®-T} and the multiposition R&S[®]TRD-500 dispatcher system plus a connected voice recorder.

Radio coverage of the tunnels was set up using a specially developed inhouse coverage system which also includes leakage cable monitoring. Radiocommunications with the trains are via train radio subracks, which were specifically developed for this project and which take into account operator-specific requirements. The system is equipped with SCADA interfaces for connecting it to a main alarm system. To ensure smooth operation and maintenance, Rohde & Schwarz trained operators and service staff in a special seminar.

The underground train system was officially opened on 12 August 2004, the birthday of Thailand's queen. An underground train with *ACCESSNET*^{®-T} – a truly royal present.

Harald Haage



The control center (top), where all communications are controlled via *ACCESSNET*^{®-T}.



Photos: R&S BICK Mobilfunk