

# Civil radiocommunications for Australian air traffic control

**At the end of 2003, NEC Australia Pty Ltd. contracted Rohde & Schwarz to supply over 600 R&S® XU 250A VHF transceivers (FIG 1). Airservices Australia will use these transceivers to modernize the existing air traffic control (ATC) system across Australia as part of the VHF system upgrade project (VHFSUP). What tipped the scale in favor of Rohde & Schwarz was mainly the high performance, reliability and low operating cost of the transceivers.**

## Safety for 11 percent of worldwide airspace

Airservices Australia is responsible for the airspace stretching in latitude from two degrees to 90 degrees south and in longitude from 75 to 163 degrees east. This is equal to 11 percent of the world's total airspace and includes annual monitoring of up to three million domestic and international flights. In the upper airspace, services are also offered for the flight information regions (FIR) of the Solomon Islands and Nauru.

With its two major ATC centers in Brisbane and Melbourne, Australia has two FIRs of its own. These parent centers oversee terminal control units (TCU) in Cairns, Sydney, Adelaide and Perth, which are responsible for ATC within the terminal areas of the largest airports.

TCU	Parent center
Cairns	Brisbane
Sydney	Melbourne
Adelaide	Melbourne
Perth	Melbourne

Communication between the ATC centers and aircraft is carried out via 153 ground stations by using approx. 470 VHF transceivers. The new transceivers will be provided in single-, two- or even three-unit configurations depending on requirements. FIG 2 shows the location of the nationwide stations.

The transceivers have already been delivered and will be installed within the next two years. However, they first had to meet Australian and New Zealand standards. These standards differ from the European standards that were applied in the development of the instruments and are generally implemented when the instruments are used around the world. These standards are also more stringent in certain areas. After a series of further tests verified that the R&S® XU 250A transceivers conformed to these standards, the transceivers can now carry the C-Tick mark, which is similar to the European CE mark.

## Voice switching and communications system

Moreover, a voice switching and communications system (VSCS) from the Frequentis company in Vienna will be supplied for the ATC centers as part of the project. Rohde & Schwarz has already completed several ATC projects together with Frequentis. To ensure that all equipment can be put into operation without any problem, Rohde & Schwarz provided Frequentis with several transceivers for extensive remote-control and monitoring tests.

Dr Rolf Springer



**FIG 1** Instruments of the R&S Series 200 from Rohde & Schwarz are used in 60 countries worldwide. They are implemented in day-to-day operations both by civil and military ATC organizations.

More information on the entire radiocommunications program as well as data sheet for the R&S Series 200 transceivers under [www.rohde-schwarz.com](http://www.rohde-schwarz.com)



R&S Series 200 data sheet

**FIG 2** A lot to do: Vast areas (11 percent of the world's total airspace) and numerous locations characterize the civil radiocommunications network of Australian ATC. It will take approx. two years to equip all locations with the Rohde & Schwarz transceivers.

- Smaller locations with fewer than four transceivers
- Large stations with more than four transceivers

