

# CASE STUDY



**Metro do Porto, SA**

## Turnkey Radio System Delivery

TES contracted by Bombardier as telecommunications consultants on Metro do Porto in Portugal

TES has been appointed as telecommunication design consultants by Bombardier to design, install and fully commission the telecommunication system on Portugal's Metro Do Porto, including Project Management of the entire installation and commissioning of and 11 site 'trunked' radio system on Portugal's prestigious Metro do Porto light rail system.

Located in northern Portugal, the light rail transit system connects 7 municipalities in the Oporto region. Comprising four lines over a length of 67km and serving 80 stations with 102 light rail vehicles, the system can transport 63000 passengers every hour.

Radio coverage has to be 100% for all tracks, both underground and aboveground sections, with maintained minimum signal levels to ensure clear crisp telecommunications, wherever trains or operators are located.

TES was commissioned to design and implement sophisticated tunnel telecommunications systems which need to be integrated with the rest of the network. These systems provide radio coverage on all underground platforms, and the numerous levels of each station, for hand portable use. Additionally, TES provided bespoke terminal control solutions for use by Metro do Porto, allowing control room staff to have clearly defined train telecommunication on a 'per line' basis.

The communication design work involved verification that the technology deployed for voice communications is suitable for operational needs. This work requires an assessment of available technologies and comparisons between them. It was clear that MPT trunked radio meets the needs of Metro do Porto, as it provides a scalable network solution with proven reliability and performance. This type of communications design has been implemented by TES on similar state-of-the-art systems such as the Nottingham Express Transit and Metrolink in Manchester, both in the UK.

The system is required to provide voice communications on a command and control basis between train drivers and the Control Centre (PCC) at Guifoes Depot. This design also supports emergency priority calls between drivers and PCC, which is a significant advantage when incident handling. Emergency calls are set up regardless of the demands on the system, and the network set-up will automatically manage periods of busy call loading for normal operational calls.