



Digital Radio Dispatch Solution Helps Workers in Swiss Tunnel Project



TRBOnet Dispatcher system improves Worker Safety at Ceneri

The need for reliable radio coverage for inter-group communications and to assist with worker safety at its Ceneri Base Tunnel site has seen Swiss company AlpTransit Gotthard deploy a MOTOTRBO™ system with [Neocom's TRBOnet Enterprise: Advanced Dispatch](#) application for the monitoring and tracking of personnel.



The third largest project of its kind in Switzerland, the 30.8km tunnel is being built through the Alps, connecting the towns of Camorino, near Bellinzona, and Vezia in the vicinity of Lugano. It will provide rail links for goods and passenger trains and help to reduce the travel time between Zurich and Milan by up to 1.5 hours

The eight year project involves many specialist teams working to strict schedules; thus the need for a robust communications system. Also, due to the potentially hazardous working environment, it is critical to have a means of monitoring personnel to provide an immediate response in the event of an emergency.

The system comprises some 200 portable digital radios and 11 repeaters connected via optic fibre, which are housed in the service hatches for maintenance and emergency access between the two tunnels. Each repeater is equipped with four antennas for 360 degree coverage and signal strength has been over-catered for to ensure continuous communication in the event of a repeater failure.

Industry name Construction

Solution Features

- 11 DR3000 Repeaters
- 200 MOTOTRBO™ portable radios
- 16 Channels
- 2 TRBOnet Enterprise (VoIP, Voice recording, GPS, Text messaging Emergency Call)
- Optic fibres
- RFID chips

Benefits

- Cost saving on frequency rent approx. €5000 per year
- Supports large amount voice and data traffic
- 5 hours system backup
- Eliminated background noise

“A MOTOTRBO digital two-way radio solution was the obvious choice as it not only offered the requisite advanced functionality, it is also a field-proven technology and a cost-effective way of providing reliable and clear communications in difficult environments. MOTOTRBO’s ability to eliminate background noise (particularly in tunnel construction) is far advanced vis-à-vis analogue systems.”

Alexander Capaul, Naegele-Capaul Communications

“TRBOnet Dispatch was chosen for its superior functionality. This includes: seamless integration with MOTOTRBO, the ability to monitor large amounts of traffic, its client-server architecture which allows it to work over fibre or via the Internet and its logging functionality – a critical feature which makes responses during emergency situations quick and effective.”

*Alexander Capaul,
director at Naegele-
Capaul Communications*

Network Contingency

The TRBOnet system includes two Dispatcher modules; one installed at the security centre about 50m from the tunnel entrance and the other at the headquarters in Lugano. From here all communications (individual and group calls) across 16 radio channels are monitored and logged around-the-clock with the emergency channel taking top priority – each radio having an easy-to-access emergency button.

Due to the lack of GPS reception in the tunnel, each person is equipped with an RFID card which logs their movements as they pass a tagging station connected to a repeater.

Tracking information is then conveyed back to the security centres which allows personnel to monitor and know where each person is within 300m of the last station passed.

The entire system has UPS backup which will allow the network to continue operating for up to five hours while emergency response teams (including medical assistance and fire brigades) are on 24-hour alert to address any situation which may arise.



Motorola Ltd, Enterprise Mobility Solutions, Jays Close, Viabes Industrial Estate, Basingstoke, Hampshire, RG22 4PD, UK
www.motorola.com

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