MOTOTRBO™ SYSTEM FOR CLEAR COMMUNICATIONS DURING CONSTRUCTION OF NEW HIGH-SPEED RAIL LINK

EIFFAGE ENERGIE DEPLOYS A MOTOROLA SOLUTIONS RADIO NETWORK FOR RELIABLE COMMUNICATIONS TO ENHANCE SAFETY

Gaël Arnaud for Eiffage Rail Express

EIFFAGE ENERGIE

Eiffage Energie is part of the Eiffage Group, one of the leading European companies in the public service concessions, construction, energy and public works sectors. Eiffage Energie has successfully completed many high profile projects, such as the Millau viaduct, the high-speed rail link between Perpignan and Figueras and the A65 Motorway.

Eiffage Energie was recently awarded the project to design, construct and maintain the new high-speed rail link between Le Mans and Rennes in north-west France. It needed an excellent communications network for rail traffic and rail construction work security. Eiffage Energie approached Radio Service +, a certified Motorola Solutions reseller who had experience in projects with other parts of its group: Eiffage Energie Communications, Eiffage Energie Systèmes Ferroviaires and Eiffage Rail.

Radio Service + installed a MOTOTRBO™ radio network, with software from Allias, a Motorola Solutions licensed developer, for the system monitoring and recording of all communications. The network went live at the beginning of December 2014 and enables all workers to communicate clearly and reliably along the whole length of the rail link during construction.

CUSTOMER PROFILE

Organisation:
Eiffage Energie

Industry:
Construction and Engineering

Location:
France

Partners:
- Radio Service +
- Allias

Motorola Solutions Products:
- 400 DP4600 Portable Two-Way Radios
- 5 DM4601 Mobile Two-Way Radios
- 11 DR 3000 MOTOTRBO Repeaters linked by IP Site Connect
- 2 Stand-alone DR 3000 MOTOTRBO Repeaters
- IMPRES™ Batteries and Charger
- PMLN5844A Nylon Carry Cases with 3-inch Fixed Belt Loop for Display Radio
- GLN6591 Nylon Shoulder Straps
- PMLN7008 Spring Action 2.5-inch Belt Clips
- Service from the Start with Comprehensive Coverage

"Radio Service + has delivered us a reliable turnkey radio communications system. It was quick to install and Radio Service + does all the monitoring, diagnostics and maintenance for us. The radios are easy to use and have a great battery life. We know we can rely on the MOTOTRBO system for clear communications and exchange of dispatches between the operational hubs and the workers in the field, wherever they are along the construction line."

Thibaud Stammler, BPL – Telecomms, Eiffage Énergie, Systèmes Ferroviaires

CHALLENGE

It was always going to be a challenge to ensure clear communications along such a long construction line, with personnel working very long shifts, sometimes in small teams in very remote locations with little or no mobile phone coverage. However, from experience on other projects, Eiffage knew it could rely on a MOTOTRBO radio network.

Radio Service + firstly conducted studies as to where best to position the repeaters and organised the corresponding site rental contracts. Then it prepared and configured all the hardware, before installing the repeaters and ADSL connections and, finally, testing all hardware to ensure the network was working correctly along the length of the proposed high-speed rail link. Turnaround was fast; three weeks for surveying, two to three weeks for preparation and programming and a further three weeks for deployment and testing. Radio Service + also trained a group of managers from Eiffage Energie on how to use the network and radios; this group then went on to train their teams internally.

SOLUTION

Radio Service + installed one master DR 3000 MOTOTRBO Repeater and ten slave DR 3000 MOTOTRBO Repeaters at the highest points along the route, such as the water towers at Soulitré and La Bazouge. These repeaters are linked by IP Site Connect, which uses an ADSL IP network to create a wide area radio network and continuous radio coverage along the length of the line being built. There are two further stand-alone DR 3000 repeaters at the two construction hubs, to provide extra coverage at these bases.

The network is remotely managed in real time 24/7 by Radio Service + using MOTOTRBO System Monitor software (MSM) from Allias. MSM displays all information relating to the system communications in real-time and generates activity reports and automatic alarms in case a repeater fails – during a power cut, for example. Radio Service + has also deployed the AIR software from Allias, for recording all communications on the network, to allow Eiffage Energie to have a fail-safe, secure, timed and dated archive in case of any issues.

There are 18 channels in total: 12 short-range channels, 2 long-range channels across the whole rail link (with the possibility of geographically dividing up the line) and 4 further long-range channels (2 per construction hub). This ensures that workers can always find a channel to communicate on. And with IP Site Connect, workers can also roam from one coverage area to another without having to physically change channel. The DP4600 Portable Two-Way Radios are used by workers to send dispatches related to trains and works or to call in to site managers to advise of any safety issues and emergencies, for example. The radios are worn on a shoulder strap or securely attached to the belt, to allow staff to work hands free. Operators carry a spare battery, as they often work very long shifts or may not be able to get back to one of the construction hubs every day. Site managers use the five DM4601 Mobile Two-Way Radios at the construction hubs to communicate with the mobile teams. They can make group calls, private calls for communicating confidential information and priority emergency calls, interrupting other communications if necessary.

BENEFIT

A MOTOTRBO radio system is ideally suited to this type of deployment where other networks simply would not be able to deliver reliable, clear communications along such a length of line, covering geographically varied and remote locations. The system is available 24/7 and, thanks to the MSM application monitoring all the system activity in real-time, any faults are diagnosed and fixed immediately. If there is a power cut, for example, a repeater can switch to an emergency battery. For other faults, the master repeater will reconfigure the network until a member of the Radio Service + maintenance team fixes the issue.

The construction teams find the radios robust and really easy to use; they know they will be able to get a signal and that the battery will not run out. The network means operators can make decisions more quickly and work more productively and safely, and, ultimately, will help Eiffage Energie finish the TGV link on time, whilst ensuring maximum security for construction teams.

Allias Applications:

- MSM (MOTOTRBO™ System Monitor)
- AIR (Communications Recorder)

Benefits:

- Clear, reliable communications along whole line during construction of 214km new rail link for management and rail traffic security
- Easy-to-use radios
- Robust radios, suited to construction sites
- Excellent battery life, ideal for operators on long shifts in remote locations
- Remote network monitoring and diagnostics

For more information please visit: www.motorolasolutions.com/mototrbo

MOTOROLA SOLUTIONS