



MAINTAINING CRITICAL OPERATIONS COMMS AT ROY HILL

MOTOROLA SOLUTIONS' WAVE 5000 TECHNOLOGY IMPROVES BUSINESS CONTINUITY



Roy Hill Holdings Pty Ltd (Roy Hill) has an operating model which incorporates business systems, business processes and technology that are integrated to achieve maximum efficiency. An important part of this is the remote operations centre, where maintaining continual communication with the controllers in the control room is a critical requirement. A solution that combines Motorola Solutions' WAVE 5000 application and LEX L10 handheld devices has improved radio communication continuity by enabling controllers to maintain communication in any situation – even evacuation of the remote operations centre.

Other significant benefits have been realised with interoperability between devices, encrypted security and futureproofing. Unlimited range is now possible, with users able to listen to Roy Hill radio talkgroups securely and remotely from within the control room with an internet connection, from a rugged device, Android phone, iPhone, tablet or a desktop.

"I have been in technology for many, many years but when I first saw this I was very impressed," says Kevin Atkinson, Manager IT Program at Roy Hill.

CUSTOMER

Roy Hill Holdings Pty Ltd

Industry

Minerals & Energy

Technology Partner

Progility Technologies

Need

- Continuity of critical communications

Benefits

- Ease of PTT
- Scalability
- Unlimited range
- Futureproofing
- Durability
- Improved disaster recovery
- Continuity of critical comms
- Any device, any network
- Security

CRITICAL COMMS CONTINUITY

The Roy Hill integrated mining project, which consists of the mine, port, rail, process plant and remote control centre, is located approximately 340 kilometres south-east of Port Hedland, in the Pilbara region of Western Australia. The project consists of iron ore mining and processing operations.

Integral to cohesive operations between all locations is Roy Hill's Perth-based corporate headquarters and remote operations centre, providing a coordinated and integrated approach to the planning, operation and overall management of Roy Hill's operations.

The central component of the remote operations centre is the control room, which houses the demand chain team, who are responsible for the planning, scheduling, execution and control of production activities across all areas of operations.

There are a number of controller functions in the control room, with a controller each for dispatch, crushing, processing, train load out, rail and port.

"The objective of the project was to enable the controllers to leave their workstations, for example, for meal breaks, to attend meetings and collaborate with others, yet remain connected to the remote sites."

"In addition, the project also provided the ability to evacuate the remote operations centre if required, yet maintain critical communications with operational teams. We need the ability for controllers to maintain communications with the port, rail, mine and process at all times."

WAVE 5000 FOR FLEXIBILITY

Senior RF Engineer at Roy Hill, Dan Ryan, identified an opportunity to deploy a new solution from Motorola Solutions – WAVE 5000 – and worked in partnership with Progility Technologies to develop the business solution.

WAVE 5000 is a Motorola Solutions' application that extends a two-way radio network by enabling reliable and secure push-to-talk (PTT) communication between radios, smart devices,

tablets and even desktops. It enables seamless communication and collaboration over any network between users and teams via easy-to-use interfaces. The application is also rich in features, such as private and group calls, texts, presence and location, logging/audits/reporting, telephone and IT integration, user configuration management and active directory integration.

Roy Hill rolled out WAVE 5000 utilising two client applications.

The first client application, WAVE Desktop Communicator, converts controllers' desktops in the control room into a PTT communications hub. This application allows office-based or mobile workers to use their desktop or laptop PC to monitor, transmit, and receive audio from multiple communication systems such as two-way radio networks and telephones.

Meanwhile, WAVE Mobile Communicator turns a smart phone, tablet or custom handheld device into a multi-channel PTT handset. Once installed, any user can access PTT communications from any location, talking with groups of other users or individuals as required.

Roy Hill has deployed WAVE Mobile Communicator to a number of Motorola LEX L10 LTE handheld devices, which are used by controllers in the control room. Senior managers have also had WAVE 5000 installed on their personal mobile phones.

MAKING DISASTER RECOVERY EASY

Using WAVE 5000, radio calls can be re-routed anywhere within the Roy Hill network or securely over the internet, making disaster recovery more flexible and agile. If the remote operations centre is evacuated, communication can continue despite the lack of radio coverage at the remote operations centre and the need for all staff to leave the building.

"A limitation in the implementation of TETRA was that controllers were bound to their desks, as the moment they left their desktops they had no capability to maintain contact with the sites."

"In addition, the project also provided the ability to evacuate the remote operations centre if required, yet maintain critical communications with operational teams. We need the ability for controllers to keep communications with port, rail, mine and process at all times."

Kevin Atkinson, Manager IT Program, Roy Hill Holdings Ltd.

“Encrypted security ensures the commercial and operational integrity of the data. It’s a competitive environment. Operational conversations happen over the radio so we want to know that these are secure.”

Kevin Atkinson, Manager IT Program, Roy Hill Holdings Ltd

Roy Hill had considered deploying a TETRA node at the remote operations centre to give some level of mobility. A TETRA node, which would have provided sufficient coverage for Roy Hill’s needs, was not installed due to the availability of a RF licence, however, the WAVE solution was so flexible that the concept of coverage no longer applied.

“Now, if the controller is halfway through a conversation and hears the warning of emergency or an evacuation alarm, they can pick up the LEX handheld device, ready for when they need to move away from the desk. They can still be in contact with the sites while leaving the building.”

“Before, controllers had to stay within 10-12 metres of their desk. This gives them more freedom, and not just in the case of fire and evacuation. They have freedom of movement around the building.”

“The efficiency is in the collaborative effect: the ability for people to move away from their desks.”

In the situation of a longer evacuation period, WAVE 5000 means an alternate command and control centre can be set up quickly and easily.

Atkinson adds that the new system enables “great capability for business continuity. In an emergency we could complete an emergency setup in a short amount of time. If we have to leave the remote operations centre for longer than four hours, we have the ability to set up at an offsite location because

all we need is a link to an internet connection, the corporate network or the carrier network. We could set up in an offsite building, deploy the LEX L10 handsets, put in wireless access points and internet and be up and running quite quickly with communications back to the mine”.

ACCOMMODATING THE WORKER’S DEVICE OF CHOICE

Different job roles demand different devices. Executives need the convenience of a smart device, while the rigours of mining demand two-way radios onsite. Controllers are best serviced by console-style functionality provided on the desktop.

Using WAVE 5000, each of these workers can collaborate despite their different device of choice.

Controllers for the port at Roy Hill, as well as some office workers, need to access Roy Hill’s radio network for monitoring purposes, however, do not require the advanced functionality of a digital mobile radio. For these workers, WAVE Desktop Communicator brings the required level of functionality to their desktops.

Moreover, while previously limited to one talkgroup, these workers can now listen, communicate and replay audio on multiple talkgroups at the same time, with the audio slightly louder on the primary conversation. The application simply runs in the background enabling users to manage other tasks while still monitoring audio from multiple channels.



CASE STUDY: COMMUNICATIONS SYSTEM

Roy Hill Holdings Pty Ltd



Utilising WAVE, Roy Hill executives can also enjoy the benefits of WAVE 5000:

“Senior managers have WAVE on their personal mobile phones, so that even if they are off the network they can still hear the radio channel on their phones via the corporate Wi-Fi. They can also access it when at home via personal network or a 4G network.”

LEX L10: DURABILITY AND EASE OF PTT

The LEX L10 handheld devices played an important role in Roy Hill’s decision to adopt this solution. Drawing on Motorola Solutions’ experience of mission-critical devices in public safety, the LEX L10 was purpose-built to address the unique requirements of the mining sector throughout Australia and New Zealand. Housed in a sleek smart phone form factor, the capabilities and features of Motorola Solutions APX radios are coupled with a ruggedness and durability not available in consumer-grade devices.

The ease of use of the PTT function in particular drew Roy Hill’s interest. Users are not required to perform the more cumbersome procedure of alternative devices where the user must open an application, find and then click on a talkgroup for access. To access PTT on the LEX L10, the user can simply push the PTT button on the side, which can also be performed successfully while wearing thick gloves.

“The LEX L10 operates like a radio which everyone knows how to use. Instead of a soft key style like a smart phone, the PTT button on the side was seen as a key feature. And the devices are very robust: they can handle being dropped,” says Atkinson.

SECURE, SCALABLE AND FUTUREPROOF

Exceptional security of communications is a must in the minerals and energy sector. Encryption, a critical requirement for Roy Hill, is a key feature of both the WAVE 5000 application and the LEX L10.

“Encrypted security ensures the commercial and operational integrity of the data. It’s a competitive environment. Operational conversations happen over the radio so we want to know that these are secure,” says Atkinson.

WAVE 5000 can accommodate up to 5,000 users, and Atkinson reports that the scalability of the WAVE solution, outside of its current usage in the control room, is an advantage.

The futureproofing potential of the solution, including the LEX L10 handsets, was another appealing factor. Next generation technologies can be deployed by Roy Hill without the need to upgrade devices.

“THEY UNDERSTAND US”

Finally, Atkinson reports that Roy Hill has a good relationship with its technology partner, Progility Technologies:

“Progility brought local expertise and they know how we operate here, including onsite. They understand our ethos, culture and deployment methodology. And they have a good understanding of Motorola Solutions”.

Peter Fritz, Motorola Solutions’ WAVE Enterprise Architect, adds: “I want to compliment Progility for what was frankly the easiest partner install I have ever done. Progility did an excellent job both in the pre-work and during the recent installation at Port Hedland. This made the whole experience for the customer painless.”

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