tait
communications

EA NETWORKS, NEW ZEALAND

EA networks

THE CLIENT

EA Networks owns and operates the electricity distribution network for the mid-Canterbury region in New Zealand's South Island, delivering power to approximately 17,500 consumers through almost 1,864 miles (3,000km) of distribution lines. For many years EA utilised an analog PMR network and recently deployed an advanced fibre-optic network to manage their distribution sub-stations, connecting distribution line reclosers where possible.

SITUATION

EA Networks' key corporate objectives are to distribute power more reliably, improve the safety of their workforce and operate their business as effectively as possible. EA chose to migrate to a Tait digital communications solution that gives them the intelligence of trunking, as well as the benefits of digital voice clarity, location services for additional safety and enhanced data capabilities for greater productivity.

EA also invested in two fibre optic communication rings to deliver SCADA communications to their larger distribution sub-stations. EA now faces the challenge of mission-critical-grade SCADA communications to pole top reclosers and pad-mounted ring main equipment downstream from their sub-stations. Extending the fibre optic reach across their entire service area can not be justified economically, while public cellular data services cannot deliver region-wide coverage and data reliability.

"We need to make sure we're using the latest technology and best practices to deliver the best outcomes for our customers.

Tait is a long-term partner that can help us achieve that, thanks to their expertise and international experience."

LOCATION
CANTERBURY
NEW ZEALAND

EXPERTISE
ELECTRICAL
UTILITIES

SOLUTION OVERVIEW

▸ TaitNet DMR trunked network

▸ Location services

▸ VHF DMR terminals — TP9300 and TM9300

▸ Five year maintenance contract

▸ Tait Enable Network Management System

▸ TaitWatch Managed Service

BUSINESS BENEFITS

▸ DMR open-standards technology provides choice and unlocks long-term value

▸ Increasing worker safety with location services and network performance

---

Tait is a global leader in designing, delivering and managing innovative communication solutions that help utilities and public safety organizations to keep the lights on and communities safe.

www.taitradio.com

EA NETWORKS, NEW ZEALAND

RESPONSE

Tait and EA Networks worked together to design an incremental system rollout strategy that included:

▶ Replacement of their aging analogue network with a five-site DMR Tier 3 trunked network.

▶ Location services, with Automatic Vehicle Location (AVL), to boost visibility of their mobile workforce. Full visibility of their fleet and workers means EA can respond quickly to incidents in the field and maintain service for their customers.

▶ Integration with a dispatch application, replacing control-room based radio equipment.

▶ Site capacity planning to support future data applications such as Distribution SCADA (D-SCADA).

A transitional solution delivered incremental field force voice communications and efficiency gains, which means power outages are now restored more quickly and grid performance is better maintained. Improved communications also means field workers are safer and more connected.

Integration and deployment of SCADA data services across the DMR network realises the final step to a mission critical, voice and data DMR network deployment.

Tait GridLink passes standards-based SCADA protocols such as DNP3 across the DMR network, for visibility and control of remote RTU devices over the network. EA's ongoing distribution automation program will incrementally improve grid reliability to remote or inaccessible locations that will pave the way for a self-healing grid architecture. This incremental approach involves:

▶ Bringing line fault and status metrics into the control room to speed up remote fault identification and lower the cost of truck rolls.

▶ Managing remote SCADA devices such as reclosers to rapidly isolate and restore service, improve SAIDI/CAIDI metrics and lower compliance risk.

▶ Introducing self-healing control room mechanisms to automate power grid management.

For Distribution Automation self-healing objectives to be effective, the control and communications sub-systems must be highly reliable and resilient.

EA plans to deploy up to 500 GridLink terminals leveraging the Tait DMR solution to fill out the large areas that fibre services will not reach. Tait also provides continuous network maintenance, monitoring and support for the solution.

"The GridLink deployment currently being trialled has the potential to deliver exceptional SCADA message reliability metrics, giving us the confidence to grow our automated outstation installation programs."

Brendon Quinn, Network Manager, EA Networks

Tait is a global leader in designing, delivering and managing innovative communication solutions that help utilities and public safety organizations to keep the lights on and communities safe.

The word Tait and the Tait logo are trademarks of Tait Limited. Tait is an ISO 14001 certified supplier.