



*Dependence on Train Control messaging is mission critical for a Rail business. The business impact of transmission delays on rolling stock movement directly affects the economic bottom line.*



TasRail is the rail operator in Tasmania with over 600km of track and has embarked on a significant upgrade of infrastructure and systems costing approximately \$400 million. An important part of the upgrade is the installation of a Train Control System (TCS) and the radio communications network required to communicate with trains over the rail network.

### The Business Challenge

TasRail had operated a reliable analogue radio system for many years to communicate with rolling stock, however it could not carry the necessary TCS data messages over modems. A completely new digital radio solution was evaluated for coverage and functionality, a draft budget established and the tender process commenced.

Part of the challenge was that new digital radio systems had not been used to support train control systems in Australia and so many aspects of coverage and digital message exchange in this context were new to both vendors and TasRail. If train control messages don't get through, or there are delays in transmission, rolling stock cannot proceed to the next section of track, or may be delayed as messages are exchanged at the almost 300 Control Block locations throughout the rail network.

### The Gravelroad Solution

Gravelroad built on its strong radio engineering and user operational understanding to manage the business approach taken to the tender process, which was to seek offers for coverage, availability and message throughput. Vendors were asked to consider a variety of ways to deliver these outcomes using any standards based radio technology from a limited number of sites and to optimise network resilience within a limited budget.

Vendors were also asked to make their offers on the basis of service assurance and to negotiate

cost against functionality, risk and ongoing support for a network operating in remote parts of Tasmania.

While it was important to encourage vendors to engage at a business level, TasRail also learnt much about modern digital radio capabilities and where compromise could be accommodated by operational arrangements and the location of Control Blocks.

The procurement process has resulted in the selection of a preferred vendor and construction of the network is underway following a detailed engineering design process. Gravelroad has assisted the vendor and TasRail during the detailed design process to jointly understand the likely radio performance, operational impacts and how to optimise the rollout, testing and commissioning of this vital radio system.

### The Outcome

TasRail will acquire a digital radio data transfer system for the TCS which will enhance train operations throughout the network. Understanding the performance benefits and constraints of radio systems in critical operational activities has been an important output for the TasRail management team.

The project has delivered the following benefits at this stage:

- A clear understanding of the radio coverage and data transfer performance to be expected across the rail network
- A contract with the vendor that requires operational performance outcomes

Gravelroad is an independent professional change management consulting firm with a difference. What sets us apart is our customer centric culture, which drives our collaborative approach. The combination of our teams' deep and practical industry experience, our ability to work in close partnership with our Clients, and our independence from any one solution, enables us to provide Clients with advice that is aligned to their strategic direction.

#### CONTACT

**Craig Lordan**

**P:** +61 7 3832 1222

**F:** +61 7 3832 1222

**M:** +61 408 729 728

[craig.lordan@gravelroad.com.au](mailto:craig.lordan@gravelroad.com.au)

#### INDUSTRIES

Telecommunications

Transport & Distribution

#### SERVICES

Network Engineering

Business Strategy