

# Pacific National – Aware System

Design, develop and implement a comprehensive fault tolerant voice and data communication system for use on locomotives across Australia



**pacificnational**



## Project

Aware Emergency  
Communication System

## Client

Pacific National Australia

## Location

Australia Wide

## Contract Period

18 months

## Award Date

January 2001

## Project Overview

Pacific National are the principle rail freight authority in Australia, with a large fleet of locomotives operating across all states and territories. An integrated and reliable communication system was required to enable locomotive drivers and train controllers to communicate as well as for real-time telemetry data to be transferred into the national monitoring centre. The system is responsible for automatically utilising either GSM or Satellite bearers depending on coverage and network availability.

## The Solution

Open Access were commissioned to provide a distributed fault tolerant communication platform that is responsible for all voice and data communication to every locomotive in the Pacific National fleet. The system is designed for high availability with redundancy allowing no single point of failure. The system automatically monitors communication network bearer availability to allow voice and data communications to seamlessly occur via Satellite or GSM links depending on a range of factors.

The Aware system is also responsible for supporting all emergency communication to and from locomotives with automatic call prioritisation and distributed notification of emergency events to all operational staff.

## The Result

The system was the first to utilise the ISDN BRS redundancy capabilities for eliminating single points of communication failure in the ISDN network. The platform has proven to be highly stable and reliable with availability figures exceeding five nines (99.999%).

The redundant distributed nature of the system has also improved maintainability as individual nodes can be shutdown for upgrade or periodic maintenance without impacting system operation. The system is the core communication platform relied upon by the majority of locomotives that operate in Australia.