



Complete end-to-end solution

4Tel can design, assemble, install and commission complete solutions for light rail networks.

4Tel provide on-going service and maintenance support after commissioning.

4Tel owns its key software and can therefore customise its products to suit different network and project requirements.

4Tel's interoperable systems enable connection to other public transport networks beyond light rail.

4Tel products provide safety and efficiency for light rail networks.

The network is designed ready for expansion. As the light rail service grows, 4Tel can accommodate it.

4Tel has experience developing products to meet formal safety integrity guidelines such as Safety Integrity Level (SIL) in accordance with IEC 61508 standard; "Functional Safety of Electronic Safety-related Systems".



Designed for future growth



Complete product customisation available



4Tel is an Authorised Engineering Organisation



Optimised for interoperability between systems



Experience in developing safety rated products

4LRMS™

4Tel has designed and installed a bespoke light rail management system.

This solution is called the 4Tel Light Rail Management System (4LRMS™) and is capable of managing all key aspects of a modern metropolitan light rail network.

4LRMS has been specifically applied to the Newcastle Light Rail Network which comprises:

An initial stage of one single line 2.7 kilometres in length, running from Newcastle Interchange at Wickham to Newcastle East, just 200 metres from Newcastle Beach with no overhead wires

Tram stops at Newcastle Interchange, Honeysuckle, Civic, Crown Street, Market Street and Pacific Park

High frequency turn-up-and-go services every 7.5 minutes during peak times

A network design allowing for expansion into the wider community in later stages.



2.7km of track with planned expansion



Popular mode of public transport



Fleet of 6 accessible light rail vehicles

FEATURES



Control Room: Design, Construct, Commission



4Tel is experienced in brownfield transport construction projects and 4Tel systems support interoperability using open-systems interfaces for maximum adaptability to client back-office needs.



4LRMS™ Automatic Vehicle Locations System



Feature set is flexible and can include overspeed protection, on-board integration of radio, WIFI, CCTV, Help Points and passenger information, display to the driver of performance versus timetable and remote control of points/switches.



Traffic Light Sequencing



Priority sequence requests at road intersection traffic lights to minimise LRV dwell time at the intersection and display the traffic signal aspect to the operations controller via 4LRMS™ control system.



Passenger Information



For multi-mode passenger information, the 4PIDS™ software solution processes GPS and track circuit data to create real-time information feed for all displays and help points. 4PIDS™ features Passenger Information Displays (PIDs), automated Voice-over-IP verbal announcements to a Public Address system, and Customer Help and Information Points (CHIPs) located around a stop/station.

4PIDS™ tracks the locations and progress of LRVs against the timetable using any combination of AVLS, GPS, track circuits and balises to provide flexibility in system design and deployment. 4PIDS™ is also used for timetable management to edit and control the release of daily and special event timetables.



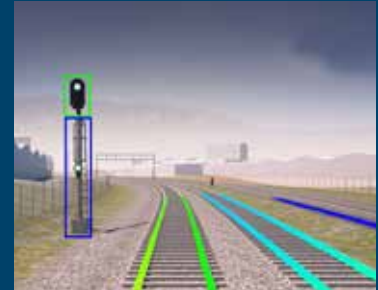
SCADA Systems



For the remote control of traction power substations, overhead wire sections, feeders and other key assets.



Artificial Intelligence and Machine Learning



As an option, 4Tel can offer its HORUS™ Artificial Intelligence and Machine Learning system for enhancing operational safety and automating basic hazard monitoring tasks, e.g. detecting pedestrians, bicycles, etc.



'A' Signalling



Supporting both Rail Vehicle Detection and Line of Sight methods of Safe Working for light rail to provide remote control and monitoring of signaling infrastructure such as points, indicators and signals.

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