

4ASW ADVANCED SAFE WORKING



Optimised for Safety and Efficiency

The 4Tel Advanced Safe-Working System (4ASW) is a communications-based train control system that uses both voice and/or electronic authority messaging to manage movement and track access authorities for drivers or train-based computers, track vehicles and maintenance staff. It is suitable for safe and efficient operations across a range of remote and regional rail network applications. The system is configurable to interface with existing back-office systems or can be supplied as a self-contained, integrated network management system. 4ASW is proven in operational rail service.

SAFETY

Improving safety outcomes

4ASW manages a network-centric view of a rail network to simultaneously control all access by trains, track vehicles and workers. It uses centralised software, user smart Apps and GPS tracking as engineering controls to deliver superior safety.

4ASW safety rules are customisable to control client-specific key risks for safe operation on low to medium density, single track lines with crossing loops.

CUSTOMISABLE

Expandable and customisable

4ASW has an open-systems architecture that is expandable to allow the evolution of new features, such as new safe-working rules or specific back-office systems' integration for reporting.

Because 4ASW supports open-systems interfaces, it can be interfaced to a variety of on-board computers or user data devices. Special-purpose user Apps can also be developed for user smart devices to meet specific operational, maintenance or management needs.

APPLICATION

Designed for multi-modal deployment

4ASW has been developed to provide a modern, cost effective, train control solution to regional and remote lines of all types. It manages safety and risk control improvements using best-practice engineering controls, which have evolved from rail-proven techniques already used by 4Tel in Australia.

4ASW can be configured to meet specific network control needs. It can also manage heavy haul fleets or mixed freight and passenger traffic, with crewing and wagon management modules.

4ASW



Fleet Management Module



Planning & Billing Module



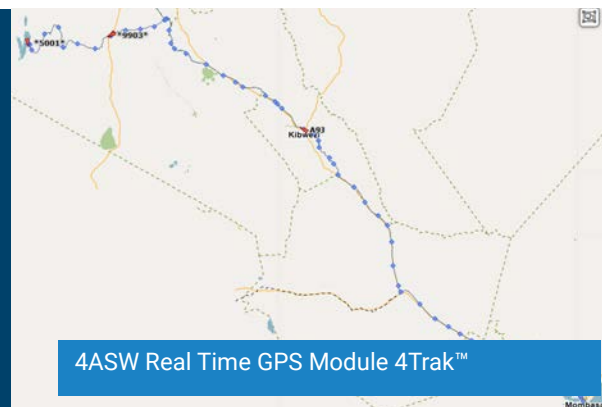
Crew Resource Module



Train Manifest Module



Real Time GPS Module



About 4ASW

4ASW is a Microsoft Windows-based train control system within the Train Management and Control System (TMACS) family of systems. Versions of TMACS are currently used by the Australian Rail Track Corporation and the NSW Country Regional Network, while 4ASW is used on a Pit-to-Port operation in Africa.

In total, The Australian TMACS implementations control over 3,000 kilometres of track and are certified to IEC 61508 SIL-2 for their accredited safety use with the Rail Regulator.

4ASW is designed to meet the requirements of IEC-61508, but if formal safety certification is required, then it is assessed by a functional safety assessment of network specific risks on a case-by-case basis.

In data mode, 4ASW can be used as a replacement to conventional circuit-based signalling on low to medium density lines to better align rail network operating capacity with demand. 4ASW can remotely control point switches and other infrastructure to increase network capacity.

Integration Modules

4ASW can be integrated with existing systems or can be supplied as a suite of modules specific to the network's requirements.

Planning and Billing

4ASW interfaces with existing planning or billing systems or can be integrated with the 4Tel Access Management System (4AMS).

Real Time GPS Tracking

4ASW can accept real time GPS data from locomotives or track machines to provide visibility for operational staff. 4ASW can interface with existing GPS systems or can be provided with the 4Tel 4Trak system.

Fleet Management

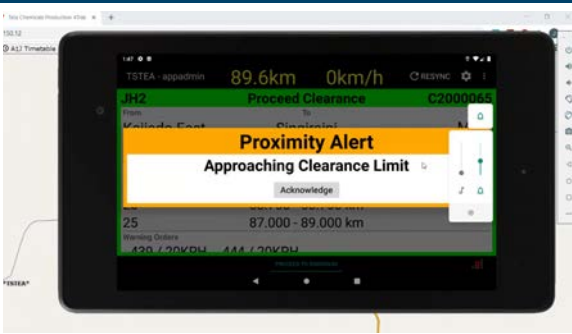
Manage locomotives, wagons, mobile plant maintenance and fleet. Interface with existing fleet management systems or develop a fleet management solution specific to network requirements.

Crew Resource & Management

Manage crew rostering, leave and deployment of crew across the rail network. This information can be included within 4ASW or can be interfaced with existing crew management systems as required.

Train Manifest

Track and manage train manifests against planning and engineering requirements. Access train manifest information specific to network requirements or interface with existing systems.



Real-time GPS tracking



Complete product customisation available



24/7 Technical Support Team



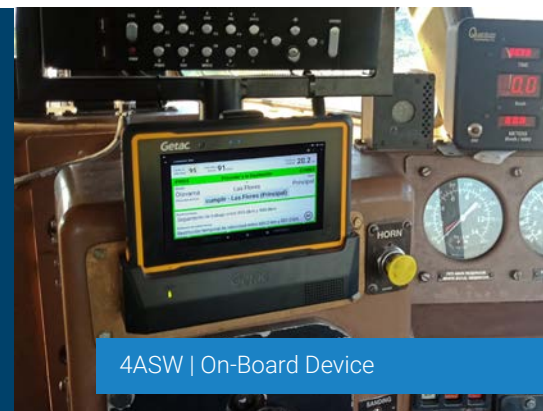
Rolling stock asset management



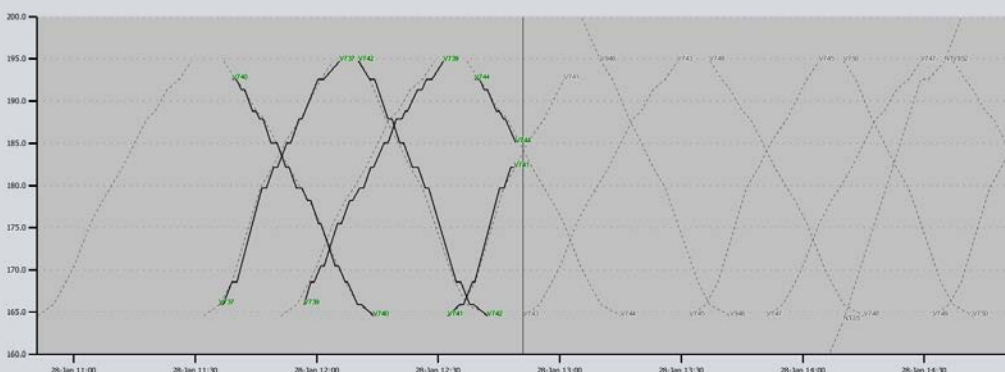
Flexible train communication systems



Improved safety and situational awareness



4ASW | On-Board Device



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