commtel

rail industry overview.

how digital technologies can supercharge and future-proof your telecommunication networks and management systems to meet increasing business requirements and customer expectations.

why CommTel is the right partner to help you successfully achieve your digital IP-based network transformation


RAIL
ROAD
CROSSING
3
TRACKS

rail telecommunications are changing.

Growing use of digital technologies, the continued push to move freight more efficiently, safely and on time, growing customer expectations and the continued effort to reduce carbon emissions, are placing enormous pressure on rail operators. Around the globe, rail entities are embracing digital IP-based network transformation to meet these needs.

Rail operators are adopting technologies such as next generation rail signalling and control networks that handle large volumes of data from multiple sources to manage their rail assets more effectively, while integrating clean energy concepts.

These scenarios require a secure network framework, hardened architecture, robust processes and trained personnel.

Moving control, radio and asset management systems to new IP-based networks requires new solutions and management systems with increased control, real-time responsiveness, higher data flow capability and comprehensive data management. Networks need to be better, more agile, more flexible, faster, more capable and deliver significantly greater quantities of information while continuing to maintain at least the same if not greater reliability than the legacy network.

Designing and delivering a new digital network to meet your needs now, and into the future, requires an expert, experienced technology partner. Any failure in this new infrastructure can of course have a big impact on your business. Effectively and efficiently managing the transition from your legacy network to this new IP-based system is no simple task either.

How CommTel can help
CommTel is the right partner to ensure your network transformation meets these next-generation requirements.

Each network transition has its own unique qualities, and we work with you to design and deliver a new digital communications solution that is fit-for-purpose, reliable, effective, appropriate and future-proof. As a leading systems integrator for technical competence, support and services, we have the experience and technical know-how to design and deliver the right systems for your needs.

We will then successfully achieve an orderly and consistent transition from your legacy systems to your new digital network using tried and tested wireline and wireless technologies, while our fully integrated data management platform will ensure a simple, seamless transition of all legacy data without compromising your business or network performance through the process.

Data-driven networks are the future for rail operators, and we have the solutions to successfully integrate these modern systems into your infrastructure. These networks are secured by integrating comprehensive cybersecurity practices into all aspects of the transition, from design through to implementation.

CommTel has a substantial presence in Australia, New Zealand and Europe, and over 70 per cent of our employees are professional engineers with the capability, market intelligence and resources to deliver this transformation program for you.

We have over 20 years of experience in delivering mission critical communication systems around the globe and will ensure your network transformation program delivers the desired results.

"CommTel's experience in project management and with their co-operative synergistic and flexible working style plus their knowledge of VicTrack and co-operative synergistic working style ensured this vital and sensitive project was completed successfully.

We are delighted to have CommTel as a long term partner in growing and supporting our critical telecommunications network."

– Leon Qu, Network Engineering Manager - Telecommunications Group - VicTrack

why commtel?

#1

ranked value added reseller for technical competence, support and services [1]

150+

people and increasing, spread around the world in 8 different locations [2]

25+

years of experience in serving mission critical solutions.

Many rail entities rely on CommTel as their trusted, long-term partner to ensure their systems meet rigorous requirements in mission and business critical areas.

As a leading provider of advanced and engineered solutions, CommTel will optimise your existing communication network and equip it to meet your future needs. We ensure your investment is protected for the life of your network.

With a wide range of wireline and wireless technology suites, management platforms, knowledge, experience and skill sets, we are in a unique position to provide rail operators with solutions precisely engineered to address your objectives – delivering business advantages in a thorough, professional and cost-effective way.

Cutting-edge capability, with comprehensive technology and extensive industry experience

CommTel is already the partner of choice with large rail operators. Whether it's delivering digital network transformation services to rail networks for the Pilbara mines, or voice radio, or sophisticated networks and management solutions to large rail operators in Queensland, we are successfully delivering digital transformation for the industry.

We bring extensive experience plus our unmatched technical know-how and capability to your network transformation project. We ensure all offered technologies and solutions have an approved-use case, and that our solutions are thoroughly tested for the rigours of a rail environment prior to implementation of our wireline and wireless technology platforms, and deliver against expected performance and reliability metrics.

The right business solution

At CommTel, we always use the technology that's right for your solution, rather than making the solution fit the technology.

Our close vendor relationships and in-depth knowledge enable us to build effective multi-vendor solutions that deliver the best overall result for you, while our commitment to R&D means we maintain the technical and industry knowledge to deliver the best results.

We have the scale, reach, commitment and capability to transform your rail telecommunications network.

industry customers we serve

8 **Infrastructure & Asset**
VicTrack, Transport for NSW, Queensland Rail, Public Transport Authority (PTA) WA, ARTC, Kiwi Rail, ARC Infrastructure, MTR Corporation (HK)

5 **Railway Operators**
Metro Trains (VIC), Sydney Trains, Queensland Rail, Public Transport Authority (PTA) WA, Kiwi Rail

6 **Freight Operators**
ARTC, Aurizon, Rio Tinto, Fortescue Metals Group (FMG), Roy Hill, BHP

[1] CommTel customer feedback and polling for active or completed projects. [2] Total number of staff varies. This includes employees and contractors.


E
70
8
60
25

how our solutions solve your problems.

key challenges in rail telecommunications transformations include:

- Seamlessly managing the transition of backbone networks carrying signalling systems from legacy SDH / PDH technology to new IP-based digital technology
- Simplifying and improving your network management capability by introducing a manager of managers solution, providing a single panel of truth regardless of the management system types below it
- Providing tried and tested communication solutions for extreme weather situations
- Providing engineering support during peak times, or where specific expertise is required

"We achieve a smooth transition to the latest secured IP networks for your whole telecommunications network and its functions"

We provide a thorough transition management plan – not just for the technology, but also for your people, processes and tools.

We integrate comprehensive cyber security elements within the solution, from planning and design, implementation to maintenance and reporting, and provide a future-proof data and voice network that will connect multiple devices and operate in a multi-protocol environment.

We ensure your network solution conforms with all regulatory requirements, is engineered and highly reliable, with high bandwidth data capacity.

"We offer much higher visibility of the condition and performance of your network assets"

Our solutions have an open architecture operational support system to integrate multiple network devices, asset management platforms and applications. They generate network condition and performance insights and reports to enable you to make better decisions using data analytics as a factor.

Our solutions also include predictive maintenance analysis and suggestions based on the latest AI technology, and offer you a single panel of truth at all times.

"We help reduce your operating costs through network automation of repetitive tasks and actions"

Many network tasks can be automated in the new digital environment using techniques such as single touch provisioning.

Our solutions will also provide network self-healing and report generation capability. They are capable of automatically completing some aspects of scheduled maintenance such as updates or security patches, relieving personnel from repetitive tasks and enabling them to focus on core operations"

"We can help reduce your carbon footprint, power consumption and field costs"

We are working on future solutions, today. We can help you build a virtualised server and storage environment for your data networks. This will be a shared physical resource. We can support your network or backhaul consolidation to reduce components and energy consumption, and work with technology partners to provide compact solutions. For example, by using a single card to replace the whole cabinet function.

You will be able to undertake learning and maintenance through Augmented or Virtual Reality platforms to reduce your site visit costs, and when you want to add to your network, your solution will offer easy network build and provisioning through technology such as MPLS , Software Defined Network (SDN) or Software Defined Wide Area Network (SD-WAN).

"We'll make it easier and more economic for you to operate in remote and harsh areas"

If you have or require telecommunication assets in remote or harsh environments we offer a rapid, deployable in-house solution for complete communications infrastructure.

Our manufactured communication shelters are a proven Bushfire Attack Level rating solution, are easily transportable, require minimum site works for installation and provide remote monitoring capability for active site components, reducing unnecessary field visits.

"We are a trusted, helping hand – whenever and wherever you need one"

We understand the working environment and operations of a rail operator and can complement any skill and resource gaps created through the introduction of new technology, legacy network maintenance or simply a lack of resources. Our architects and designers are skilled in many network build and migration scenarios, and we have our own Integration Facility to conduct integration testing such as Proof of Concept and Factory Acceptance Testing.

We have proven project and implementation capability, and we meet agreed timelines and all necessary governance procedures. We also offer you a single point of contact throughout the project that will deal with multiple parties and contracts, and offer outsourcing services such as remote network monitoring and network maintenance.

All of this means you can spend more of your time focused on your core business activities.

partner with the experts.

Long-term partner with Australia's largest rail freight operator

Australia's largest rail freight operator transports more than 250 million tonnes of commodities every year, connecting miners, primary producers and industry with international and domestic markets. It provides its customers with integrated freight and logistics solutions across a rail and road network that traverses Australia.

CommTel has been a long-term technology partner, helping to manage its extensive telecommunications network. When this rail freight operator needed a 'Manager of Managers' solution to better manage its many networks systems, it chose CommTel's CNMS-NG network management portal to provide a single information window across its entire network, and across multiple devices and multiple technologies.

CNMS-NG has been the go-to network management solution since 2015, providing its single panel of truth across the rail operator's communications network.

Supporting Victoria's transport telecommunications network upgrade

VicTrack owns Victoria's transport land, assets and infrastructure – and works to protect and grow the value of the portfolio. It is transforming the state's telecommunications network to ensure it keeps pace with the transport needs of Victoria's growing population.

VicTrack's telecommunications network is the backbone for Victoria's public transport, providing the platform for driver communications, customer information, myki ticketing, network monitoring, signalling and other service-critical systems.

The new proposed Transport and Government Secure Network will transform VicTrack's telecommunications infrastructure, delivering a safer, more secure, more efficient and more reliable network.

It will support the roll out of High Capacity Signalling technology, an increase in data capacity and speed will help ensure its network remains secure and resilient against the ever-increasing risk of cyber-attack.

CommTel's technology experts are helping to facilitate the smooth transition to the new network system.

We are helping enhance network resiliency, enabling the use of emerging technologies to increase system capabilities and capacity, and are also providing specialist engineering design and project execution expertise.

The project will future-proof VicTrack's network, reducing its maintenance costs while increasing its capability.

Helping deliver a complete integrated rail signalling and communications system in the Pilbara

A single line of 344km of track is used to transport 55 million tonnes a year of iron ore from the one of the largest mine operators in Chichester Range in the Pilbara region of Western Australia, for shipping from Port Hedland.

The track is used 24/7. The mine operator wanted to increase efficiency with a new train loading system controlled from a Remote Operations Centre (ROC) in Perth and a system to provide automated route setting and train control using interlocking signalling and voice-based orders that could also be operated from the ROC.

CommTel partnered with their preferred contractor to successfully deliver both. We provided a high-availability IP/MPLS solution that enables the network to reroute connections around a failure for non-stop routing and services, the ability to prioritise higher priority traffic over lower priority, new IP and Ethernet applications and we simplified their network management tools.

We also provided end-to-end project implementation services, such as detailed network design, Factory Acceptance Testing, installation, commissioning, integration testing, training and maintenance.

The network has been successfully operating from Day 1 and has increased business efficiency, delivered significant safety improvements for all track-related activities, optimised costs (it requires minimal CAPEX to scale the infrastructure), and has reduced costs by reducing the number of network elements required.


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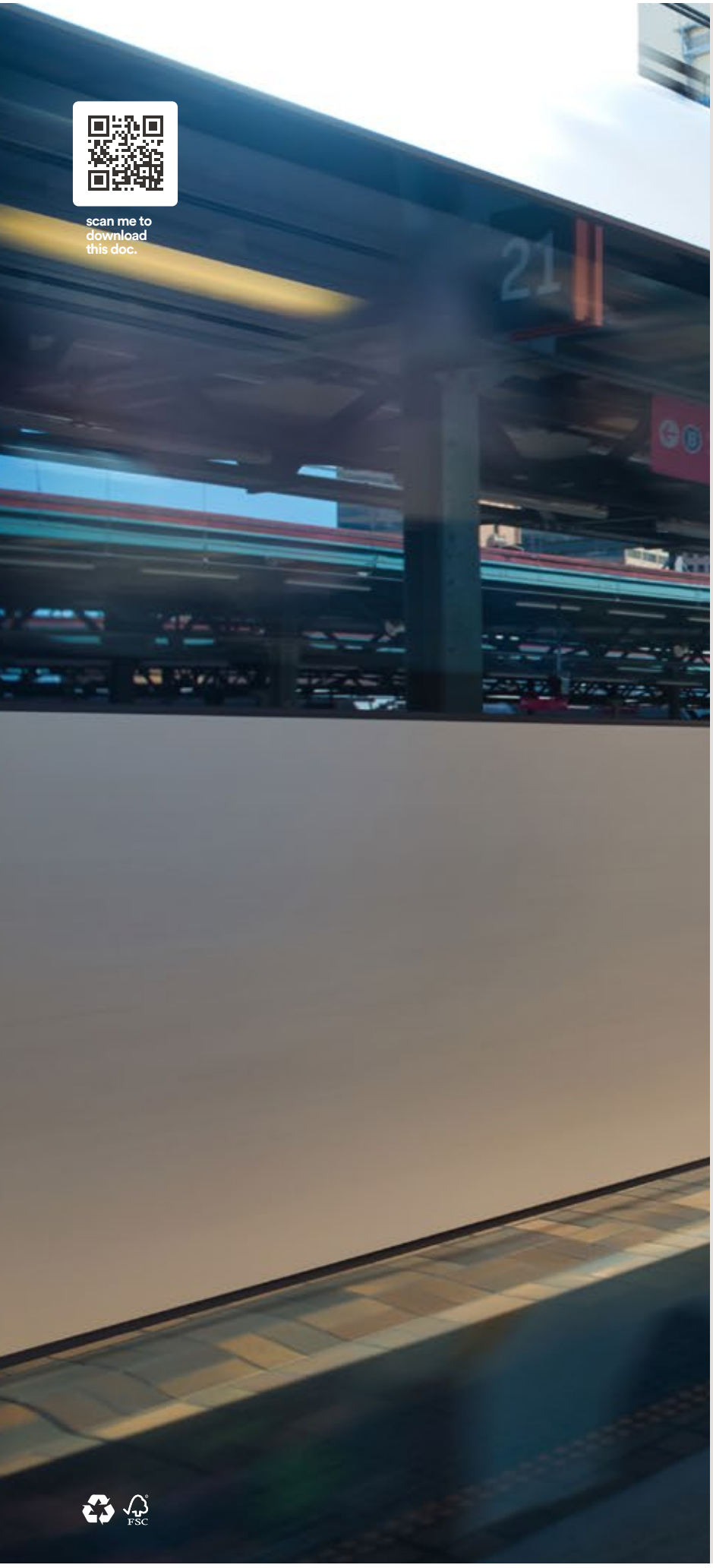

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about commtel.

CommTel is a leading international provider of advanced and engineered solutions for mission and business critical networks. We are a technology integrator, widely known for innovative solutions. Every day, our technology solutions, skills and services ensure the reliable delivery of essential services such as electricity, gas, water and public transport.

CommTel is at the forefront of digital network transformation. We help our customers move to faster, more intelligent communication network solutions and support them for their network lifecycle.

We partner with our customers to design the right solution, ensure a seamless transition from their legacy system, and then support them so their network continues to meet their needs as they evolve.

At CommTel, we ensure our customers maximise the benefits of the digital world.

To find out more about how CommTel can take your business into the future, visit commtelns.com

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