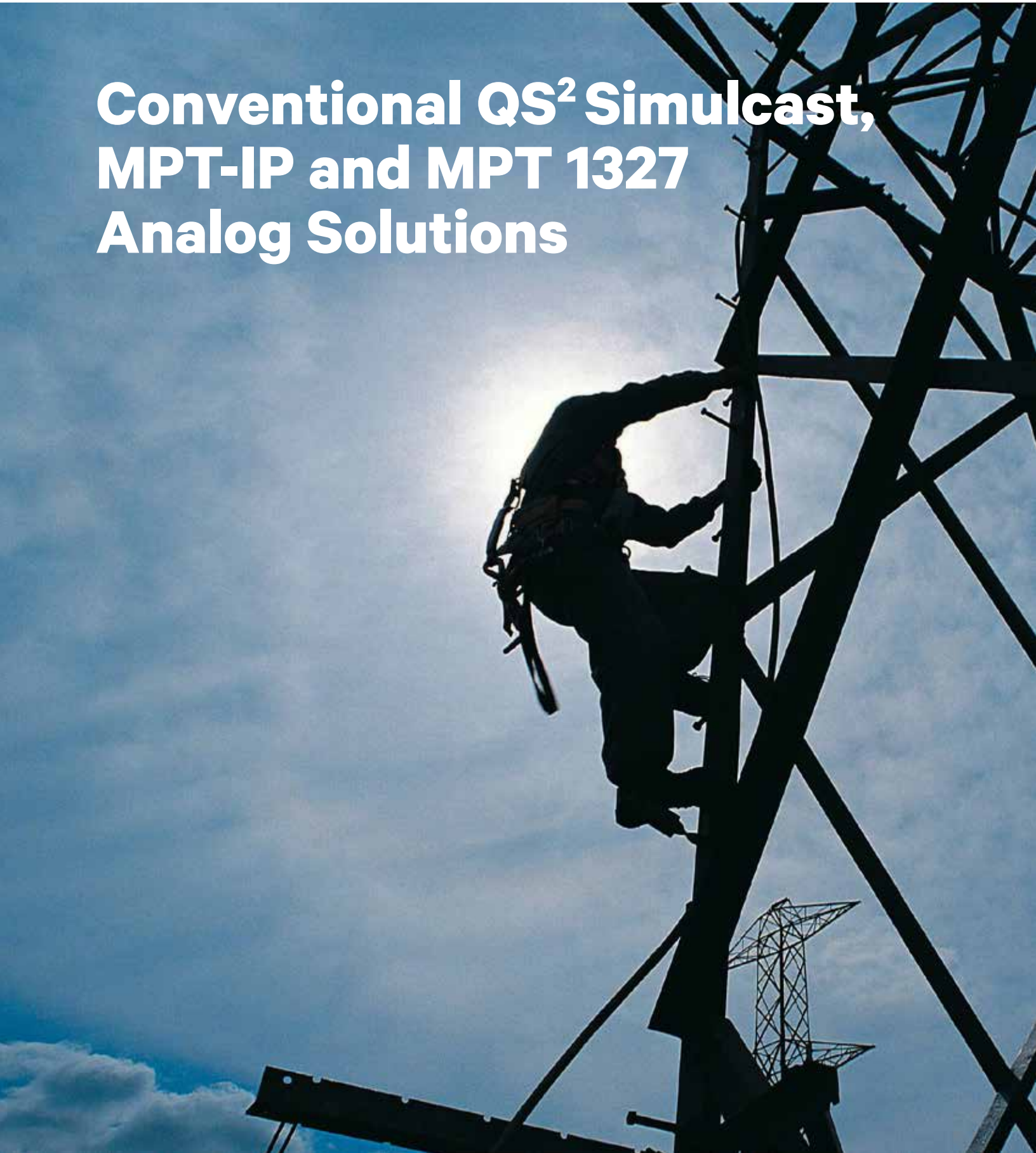# Conventional QS² Simulcast, MPT-IP and MPT 1327 Analog Solutions

Tait Communications has a proven track record of delivering highly available, mission-critical communications solutions for public safety and utilities organizations.

Tait Communications provides complete analog solutions with our range of portables, mobiles, networks and services. Our analog solutions are upgradable, if and when you need to, for a fully digital future.

Our analog solutions are:

▸ Cost effective
▸ Scalable and flexible
▸ Tried and tested
▸ Designed for worker safety
▸ Built with open standards
▸ Future proof
▸ Digitally connected

Cost effective

With simplified network design, open standards, tailored support and maintenance packages, remote diagnostics and legacy system support, Tait Communications analog solutions lower the overall cost of ownership.

Scalable and flexible

Our analog solutions are modular enabling you to expand your communications infrastructure as you grow your business. Ultimate flexibility is available with legacy 4-wire support into the IP backbone of MPT-IP that enables you to choose how to implement your radio system as time and budget allows.

Tried and tested

Tait Communications has a large install base of fully redundant, fault-tolerant systems that provide the highest possible levels of reliability and availability. Our analog solutions are well established across the globe and continue to be respected as relevant solutions for many business communication needs.

**"We wanted an evolutionary solution, leveraging our investment in existing infrastructure …
the Tait proposal proved to be the most operationally effective and most easily commissioned."**

Terry Hewlett, Project Manager
London Bus/Transport For London

Designed for worker safety

Worker safety is a priority, and often a legal requirement, for many businesses, especially isolated workers or those in potentially dangerous situations.
Every Tait radio has a range of flexible, easily-deployed worker safety features that combine to deliver peace of mind for both workers and employers.

Built with open standards

MPT 1327 is an open standard. This means Tait can provide customers with flexibility and vendor choice. Proprietary technologies do not offer this flexibility. Instead, they often lock you into a single vendor, reduce your system's compatibility with other legacy systems, have a high risk of vendor obsolescence, and increase your reliance on specific functionality that can only be provided by one source.

Future proof

Protecting your investment is extremely important! Tait Communications delivers high performing solutions that are also future-proof. Our systems are scalable to meet the ever changing business environment, flexible to add functionality for greater efficiency and provide seamless migration to new technologies when business or regulatory demands require it.

Digitally connected

The communications industry is moving towards a digital future. With TaitNet MPT, key digital connectivity – IP backbone, SNMP, SIP – is provided on a well-established platform, providing the functionality that is required now, with migration built-in for your future needs.

"Tait has installed a system for us which has proved economic to MainPower both now and over the longer term. They've done it in a professional manner and it's given us assurance that there is an upgrade path for more technology as we go along."

Peter Hurford, MainPower Ltd.

Whether migrating to a Tait solution or between Tait technologies, our focus is to make this transition as seamless as possible.

TAITNET CONVENTIONAL ANALOG QUASISYNC (QS²) SIMULCAST NETWORKS

TaitNet QS² simulcast networks provide wide area coverage from multiple sites using a single frequency pair. This enables all users to seamlessly roam within the coverage area.

KEY FEATURES

Automatic equalization of bulk delay, phase delay and amplitude

TaitNet QS² systems simultaneously broadcast the same information from all sites in a network using Digital Signal Processing (DSP) techniques to automatically equalize the received audio in terms of bulk delay, phase delay and amplitude. Any differences in site linking characteristics are automatically corrected with TaitNet QS² systems, ensuring that users receive distortion free audio or data in coverage overlap areas.

Easy expansion

Adding a site is as easy as adding a single card at the central control site and a remote site card with the new base station.

Multiple link types

The system supports the use of differing link types for different sites. The tone on idle signalling is used for links.

Independent site operations

An external input is available to enable "Breakout" operation, whereby a site is removed from the wider network to work in a local mode.

Stored backup configuration

A full set of equalizer coefficients can be pre-set and stored for a back-up/redundant site link path.

Generic system configuration platform

The system can be configured with any standard VT100 terminal (e.g. Hyper Terminal). All system control functionality is embedded in the central site equipment.

External "Train Now" input

The system will commence training, when an external device activates the input.

Talk through at remote site

Under situations where the site link, and therefore system audio, to a site has failed, a site can be configured to operate as a simple local talk through repeater.

Comprehensive selection of inputs and outputs for integrators

TaitNet QS² systems represent more than a decade of experience with simulcast systems. A number of inputs and outputs (I/O) are provided to give solutions to many and varied scenarios encountered. Some examples of this I/O are:

▸ Disable remote noisy receiver
▸ Change channel on monitor receiver (not available as an external input)
▸ Pre-emphasis selection
▸ Site busy indication
▸ Link fail indication
▸ Train system input
▸ Site transmitting indication.

TAITNET ANALOG MPT-IP TRUNKED NETWORKS

MPT-IP is an MPT 1327 trunked radio network that provides IP and digital functionality, and does not compromise on scalability, flexibility, functionality or cost-effectiveness.

KEY FEATURES

Advanced functionality

TaitNet MPT-IP delivers the functionality that is required today, along with the flexibility to migrate to digital technologies tomorrow. TaitNet MPT-IP provides integrated IP, a range of connection methods, advanced group calling, mission-critical and geographically redundant infrastructure as well as a range of other benefits.

Investment protection

TaitNet MPT networks are modular, enabling functionality, capacity and enhancements to be seamlessly added to meet the changing requirements of businesses. TaitNet MPT networks support different site connection technologies, from traditional 4-wire to IP, ensuring that if existing connections are available, capacity can be added without the large, often hidden costs of interconnection upgrades.

Future migration path

TaitNet MPT-IP is a cost-effective VoIP communications system, providing the enhanced digital connectivity that is required today and has been developed with the future in mind. By providing a seamless migration path to digital radio technologies, such as DMR in the design of MPT-IP, Tait can support MPT customers now and ensure those who have a future need for digital technology can seamlessly migrate when needed.

Call types

TaitNet MPT-IP has an extensive range of call types and call features that ensure users can communicate how and when they want.

▸ Radio/radio: users can communicate privately in a one-to-one call, without the rest of the fleet listening in.
▸ Radio/telephone: calls can be made between radios on the network and landline telephones on PABX or PSTN networks.
▸ Radio/cellular: radio users can call cellular telephones to communicate in a one-to-one call.
▸ Group calls: group calls have been enhanced to offer faster group call setup, providing radio users with conventional-like calling, such as conference calls, broadcast calls, late entry, dynamic re-grouping, local groups and registration based groups.
▸ Emergency calls: emergency calls clear down normal priority calls if there are no free channels. The network highlights emergency calls and sends out alarms via dispatch and consoles.

Thousands of organizations around the world have chosen Tait Communications to deliver their radio networks and solutions.

TAITNET ANALOG MPT-1327 TRUNKED NETWORKS

The TaitNet TN5100 system has the advanced features of MPT 1327 for customers who require:

▶ a communications system with more than 8 sites, and/or
▶ more than 30 dispatchers per node, and/or
▶ a need for customization of their network.

At the core of the TaitNet TN5100 series is the T1541 wide area controller, a powerful multi-site, multi-node network controller with advanced features for customers who have complex communications requirements over wide geographical areas.

KEY FEATURES

▶ Multi-node capable
▶ Up to 960 sites
▶ PSTN/PABX connections
▶ Data connectivity
▶ Dispatcher interface
▶ Network wide group calls
▶ Network management
▶ Site and channel alarms
▶ Dynamic call timers
▶ Email gateway
▶ MAP27 gateway
▶ Conventional (E&M) gateway
▶ P25 gateway.

Call types

▶ Voice – individual or group
▶ Radio to radio
▶ Radio to telephone
▶ Telephone to radio
▶ Call priorities (up to 5 levels) including pre-emptive emergency
▶ Short form dialing
▶ Status messages
▶ Single segment transaction
▶ Multi-segment transactions
▶ Non-prescribed data
▶ Full off-air call set-up.

TB8200

The TB8200 base station is a robust state-of-the-art digital fixed station, designed for operation in a TaitNet MPT 1327 radio network. The TB8200 is a reliable, high performing, modular base station with digital signal processing and software-based operation and configurability.

The base station combines industry-leading digital voice quality with rugged design specifications and intuitive user interfaces to meet the demanding needs of the public safety, transport and utility sectors.

KEY FEATURES

▸ Remote management from a PC running the Tait Customer Service Software: configuration, alarm monitoring, fault diagnosis, feature and firmware upgrades.
▸ An integrated wiring solution is provided for the system control bus connections to each module.
▸ Reciters (receiver/exciters) can be replaced without affecting the operation of other reciters in the same subrack.
▸ Rugged construction with generous heatsinks and fan-forced cooling for continuous operation from –22°F to +140°F (–30°C to +60°C).

TB8100

The TB8100 is a software-controlled base station designed to operate on most standard frequency ranges. Many of the TB8100's operating parameters such as channel spacing, audio bandwidth, and signalling are controlled by software. It is also capable of generating alarms for remote monitoring.

The TB8100 comprises a number of separate modules. Each module is inserted into the TB8100 4U subrack from the front and is secured at the front with a metal clamp. Both clamp and module are easily removed for rapid replacement.

The connections at the rear of the subrack are RF input from and output to the antenna, external frequency reference input, AC and/or DC power supply input, auxiliary DC output (optional), and system inputs and outputs (via the system interface board fitted to the reciter).

KEY FEATURES

The TB8100 features rugged construction with generous heatsinks and fanforced cooling for continuous operation from –22°F to +140°F (–30°C to +60°C). Several different configurations are possible.

The most common are:

▸ one 5W or 50W base station plus accessory modules or extra receivers
▸ two 5W or 50W base stations
▸ one 100W base station plus accessory module or extra receiver.

TB7100

The TB7100 is a software and hardware link-configured base station which is designed for operation in a large variety of standard frequency ranges.

It makes extensive use of digital and DSP technology. Many operating parameters such as channel spacing, audio bandwidth and signalling are controlled by software.

KEY FEATURES

▸ 100 channels with CTCSS and DCS sub-audible signalling
▸ Covers the key frequency bands: 66-88MHz, VHF and UHF
▸ Two digit LCD display
▸ Four programmable function keys
▸ Continuous duty at 25W, 40W (UHF) and 50W (VHF) power output
▸ Full duplex operation
▸ Tone on idle and CWID
▸ Capable of operation at ambient temperatures of up to 140°F (60°C) and down to -22°F (-30°C)
▸ Fans and heat sink are designed to give 100% transmit duty cycle
▸ Programmable fan operation
▸ Integral monitor speaker for audio testing
▸ 9-way RS232 serial data port
▸ 25-way system interface for connecting external equipment
▸ Low standby power consumption (140mA in economy mode, 25W)
▸ Rack or wall mounted.

Tait Communications has experts for every stage of your communications system from design to deployment and ongoing support.

ANALOG MOBILES

For more than four decades, Tait Communications has produced reliable and affordable mobile radio solutions for a range of customers. From 10-channel conventional mobile radios to comprehensive public safety systems, the Tait Mobile 8000 (TM8000) series is ideal for those seeking versatile and feature-rich, voice and data applications.

Tough and reliable mobiles
Engineered to exceed military standards C, D, E and F, Tait mobiles take shock, vibration, dust and a host of other independently-tested challenges in their stride. The ingenious engineering of a TM8000 series mobile goes beyond the tough die-cast metal chassis and the IP54 rated casing, this radio even monitors its own temperature ensuring performance and preventing damage from possible overheating.

Integrator friendly
Tait mobiles can be set up to connect the way our customers need them. The TM8000 series mobiles have a wealth of configurable ports and options boards, fast transmit rise times and other performance features that ensure easy integration with other systems. Integrators can set priorities, configure inputs and outputs, install a custom-built options board or create a new application using our optional third party developer's kit.

Better collaboration across teams
Effective collaboration is crucial for public safety and government personnel who must work together to save lives in emergency situations. GPS and data capabilities on TM8000 mobiles provide superior team communication and co-ordination to ensure that work teams are co-ordinated more effectively and efficiently.

More secure mobile teams
The TM8000 series mobiles have a built-in scrambler that makes it difficult for unauthorized ears to listen in on voice traffic. When a TM8000 series radio is switched to emergency mode, send/receive cycling and a built-in covert microphone enable the responder to listen to what is taking place. For added operator safety, the radio will appear to be switched off at such times. If a vehicle containing a mobile radio is stolen it can be stunned and the radio revived remotely when needed.

Safer mobile teams
In critical situations, reliable radios and superior coverage mean better communication and improved safety for your teams on the ground. TM8000 series radios provide maximum dependability for enhanced team safety.

ANALOG PORTABLES

The Tait portable 8100 (TP8100) series radios are designed for challenging environments, adverse weather conditions and hazardous situations. When only the toughest radio will do, choose one of the TP8100 series radios.

Tough, reliable and waterproof

We design, manufacture and test our portables to exceed Military standard 810F. While, the military standard drop test is 26 drops from 1.2m, the Tait Communications drops 26 times from 1.8m on to concrete, and then tests the same radio for water immersion. The robustness of Tait radios ensures a lower cost of ownership and hassle-free management of radio assets.

Safer and more effective teams

The advanced power management, audible low battery indicator and high-performance Lithium-Ion (Li-Ion) battery in the TP8100 series portables ensure that workers are able to continue their tasks with the confidence that the portables will last the distance.

The top-mounted, recessed, programmable emergency key can send alerts quickly when needed. All TP8100 radios have Lone Worker capability, which senses user inactivity, and voice inversion scrambling for added security.

Flexible communications

The TP8100 series of portables work seamlessly with Tait 8000 series mobiles and base stations.

Full conventional feature sets including CTCSS/DCS, Selcall, MDC1200, G-STAR and voting/scanning are available on the TP8110 (16 channel, no keypad, no display) TP8115 (128 channel, limited keypad) and TP8120 (350 channel, full keypad) portables.

MPT 1327 features, including multiple call types—individual, group, PABX, interfleet and short data messages—are available on our two trunked portables, the TP8135 (4 keypad) and TP8140 (full keypad).

Light, strong and powerful

The two shot molded construction of TP8100 portables provides extra durability and better grip. The standard 1880 mAh Lithium-Ion battery delivers outstanding shift life and eliminates memory effect. The single-slot fast charger, self-cleaning 'swipe' style battery contacts and optional multicharger provide a charging solution for small groups of users or larger fleets working rolling shifts.

Intrinsically Safe for hazardous environments

Tait Communications TP8100 Intrinsically Safe (IS) portables are designed for maximum safety, reliability and usability in hazardous environments. Tait TP8100 IS portables are independently approved, so workers in mines or other dangerous environments do not need to worry about the safety of their communications equipment.

ANALOG | MOBILES & PORTABLES

CONVENTIONAL MOBILES

TM8105
100 channels

TM8110
1-digit display
10 channels

TM8115
2-digit display
100 channels

TM8250
4-line display
1,500 channels

TM8260
Dual band
1,500 channels

DUAL MODE: TRUNKED/ CONVENTIONAL MOBILES

TM8252
Up to 1,500 conventional channels

TM8235
3-digit display
Up to 100 conventional channels

TM8255
4-line display
Up to 1,500 conventional channels

CONVENTIONAL PORTABLES

TP8110
No display, no keypad
16 channels

TP8115
Display + 4 key
128 channels

TP8120
Display + 16 key
350 channels

TRUNKED PORTABLES

TP8135
Display + 4 key
10 channels

TP8140
Display + 16 key
10 channels

TAIT COMMUNICATIONS

Our clients protect communities, power cities, move citizens, harness resources and save lives all over the world. We work with them to create and support the critical communication solutions they depend on to do their jobs.

Digital wireless communication forms the central nervous system of everything we do. Around this resilient, robust core we design, develop, manufacture, test, deploy, support and manage innovative communication environments for organizations that have to put their total trust in the systems and people they work with.

We've worked hard to develop genuine insight into our clients' worlds, and have pursued engineering, operational and services excellence for more than 40 years. This understanding, and our belief in championing open-standards technology, means we can give our clients the best possible choice and value to achieve the human outcomes they're driven by.

OPEN STANDARDS AND GLOBAL STANDARDS

Everything we do is based on open standards because we believe the solutions we create with our clients need to be easy to integrate with other organizations' systems, applications and equipment.

Though most vendors agree that this kind of interoperability is a positive thing, the way the various technology standards are interpreted differs greatly. As far as we're concerned, the solution that works best for our clients is the best solution, regardless of who provides it.

Our commitment to open standards means we can deliver highly-customized solutions to our clients by complementing our own products and services with applications and systems from our family of partners.

We're not simply aligned with our clients, we're devoted to their cause.

devoted
to your
cause™

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