Tait Analog Network Solutions:

TaitNet Analog Simulcast AS-IP

TaitNet Quasi Sync System QS^2

TaitNet Analog Trunked MPT-IP

Tait Communications has a proven track record of delivering highly available, mission-critical communications solutions for public safety, utility, transport, mining, oil and gas organizations.

TAIT COMMUNICATIONS PROVIDES COMPLETE ANALOG NETWORK SOLUTIONS WITH OUR RANGE OF PORTABLES, MOBILES, INFRASTRUCTURE AND SERVICES.

Benefits of our Analog Solutions:

▸ Cost effective
▸ Scalable and flexible
▸ Multi-mode capable
▸ Resilient and reliable
▸ Designed for worker safety
▸ Built with open standards
▸ Future proof
▸ Digitally connected

Cost effective

With simplified network design, multi-mode hardware platforms, 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 upgradable, enabling you to expand your communications infrastructure as you grow your business. Ultimate flexibility:

▸ 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.
▸ TaitNet AS-IP Analog Simulcast System, infrastructure software upgradable to P25 Phase 1 and P25 Phase 2 trunked.

Multi-Mode Capable

All Tait Digital terminals are multi-mode. They are capable of operating immediately on your old analog radio system and then moving onto your new network as it is activated. Multi-mode capability adds enormous flexibility to the roll-out of digital equipment.

Resilient and reliable

Tait Communications has a large installed 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 and TaitNet AS-IP, 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.

www.taitradio.com

The perfect Analog conventional Simulcast voice and paging over IP system, based on the same P25 digital architecture for an ideal migration path.

TaitNet AS-IP Analog Conventional Simulcast over IP Network

TaitNet AS-IP analog simulcast networks are IP-based digital systems that are specifically designed to provide conventional simulcast analog communications over wide geographic areas.

AS-IP networks can be stand-alone, or add an analog simulcast overlay to new or existing Tait P25 networks, for example for analog paging applications or legacy analog radio users.

KEY FEATURES

Future Migration Path

The AS-IP network uses the Tait TB9400 base stations also used by Tait P25 networks, Phase 1 or Phase 2 mode of operations. As AS-IP networks use the same hardware as Tait P25 networks, they can be upgraded to P25 later should this be desired. Because upgrades can be completed remotely, we have the "best migration story in town".

Advanced functionality

The Tait AS-IP solution uses significantly less equipment than a typical analog simulcast network solution because the voting system is already included in the TB9400 base station with intelligent resiliency. This reduces the possible points of failure, increases the reliability and therefore reduces maintenance operating cost. For example, the network is resilient to minor changes to link timing without additional equipment.

The AS-IP provides connectivity with the IP network for simplicity.

The TB9400 base station integrates a linear PA, used for LSM (Linear Simulcast Modulation). This feature greatly improves inter-site separation network design.

The TaitNet AS-IP networks can complement a P25 network by adding an analog simulcast overlay to a P25 conventional and P25 trunking solutions, for example for analog paging applications or legacy analog radio users such as mutual aid channels.

Investment Protection

The AS-IP network portfolio, based on the latest TB9400 base station platform, is a compact solution that we will grow based on continuous customer needs for Analog and P25 solutions.

The AS-IP solution also supports SNMP Manager such as Tait Enable Monitor.

Coverage

Simulcast transmission provides a means of achieving wide-area coverage with multiple transmitters utilizing a single frequency. In simulcast systems, audio is broadcast simultaneously over a number of transmitters on a single frequency. Essentially, for simulcast each transmitter in the system transmits exactly the same signal, with the same characteristics, at the same time.

Simulcast is very useful because frequency allocations in many countries are difficult, and reusing the same frequency over a large area is cost-effective and sometimes the only possible way.

Whether you're migrating to a Tait solution or between Tait technologies, our focus is to make the transition as seamless as possible.

TAITNET Conventional analog QUASI-SYNC (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.

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

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.

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 signaling 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.

TB8100/TB8200

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 signaling are controlled by software. It is also capable of generating alarms for remote monitoring.

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 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

▸ The TB8100 and TB8200 features rugged construction
▸ 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.

TB9400

The TB9400 base station is the flexible platform for both Analog Simulcast and P25 Digital solutions with IP connectivity. It is 12.5kHz for Analog and P25 Phase 1 FDMA operation, and 6.25kHz equivalent P25 Phase 2 TDMA trunked.

Tait customers can migrate from an analog network to a digital P25 network, and also from P25 Phase 1 to Phase 2, while keeping the same 9400 hardware through the entire process, thus future proofing their investment.

KEY FEATURES

▸ Resilient and reliable: keep your people safe and running an effective and efficient operation.
▸ Benefit from the spectral efficiency, multi-vendor interoperability, security, migration and data capability.
▸ Robust design provides clear mission-critical voice communications.
▸ The TB9400, with Tait network design services, can deliver the resilience, capacity and coverage required for your communications network.
▸ TB9400 applications and design elements make the TB9400 cost effective to deploy, minimizing individual site equipment and number of sites.
▸ Interfaces upgradability and functions ensure your system can expand with the evolving needs of your organization and the regulatory environment in which you operate.

TM8100

The TM8100 is a robust, software-flexible radio which is ideal for a wide range of voice and data applications. The TM8100 comes with conventional channels ranging from 10 - 100 and features a two-digit display.

KEY FEATURES

▸ Easy-to-read display for fast channel selection
▸ Four programmable function keys
▸ Heavy duty microphone and built-in loudspeaker
▸ Data capable - supports 1200/2400 baud FFSK as standard
▸ Internal high speed data modem (12 kbps on NB channels/19.2 kbps on WB channels) (software option)
▸ Type 99 (2-tone) decode
▸ Four RF power levels
▸ Full Selcall functionality
▸ DTMF encoder
▸ Low standby power consumption
▸ MDC 1200 encode (software option)
▸ Multiple auxiliary ports
▸ Expansive internal options area
▸ Direct connect GPS

TM9300

The TM9300 mobiles offer conventional and trunked DMR operation as well as full MPT 1327, and conventional FM functionality in one device.

KEY FEATURES

▸ Future proof multi-mode mobiles (DMR trunked, DMR conventional, MPT 1327 and conventional analog FM)
▸ Roaming between MPT and DMR Tier 3 trunked networks
▸ Roaming between FM Conventional and DMR Tier 2 Conventional Networks
▸ Easy to install handheld Control Head (HHCH)
▸ Optional control head colors available
▸ Open DMR standard provides choice and interoperability
▸ Engineered for use in demanding environments with IP54 rating
▸ Crystal-clear audio quality
▸ A range of configurable models and accessories are available to suit various applications
▸ Packet Data over Traffic channels
▸ GPS capable to improve efficiency and safety
▸ Encryption supported

TM9400

The TM9400 provides analog, 12.5kHz P25 Phase 1 FDMA conventional/trunked, 6.25kHz equivalent P25 Phase 2 TDMA trunked and LSM (CQPSK) decode capability in a single device. The TM9400 is capable of AES encryption, Over-the-air Rekeying (OTAR), various emergency modes and is IP54 rated to keep those relying on the mobiles safe and efficient.

KEY FEATURES

▸ Manage migration risk with a multi-mode mobile – analog, P25 Phase 1 conventional/trunked and upgradable to P25 Phase 2 for enhanced interoperability
▸ Future proofed with software-upgradability to P25 Phase 2 TDMA for increased capacity
▸ Variety of options to suit your application – remote mount and control head
▸ Flexibility with an options slot for expansion and addition of future capabilities
▸ Engineered for demanding environments with IP54 rating and water-resistant control head
▸ AES encryption, voice and data, simulcast support and pre-set status messages for effective operations

TP8100

Uncompromising build quality and sleek mechanical design make this reliable and waterproof portable radio ideal for situations when only the toughest will do. Available in either trunked or conventional, the TP8100 is sure to suit as a standalone portable or within a wider system solution.

KEY FEATURES

▶ Tough enough to withstand the harshest environments; engineered to exceed IP67 sealing: zero dust ingress and immersible in 3.28 feet (one metre) of water for 30 minutes
▶ Light and easy to carry: only 12 ounces with Li-Ion battery
▶ Top-mounted, easy-to-find programmable emergency key and Lone Worker capability
▶ Improves worker safety
▶ Up to 350 conventional channels with CTCSS/DCS, Selcall, Two Tone Decode (Type 99), MDC1200, G-Star (Encode) and voting/scanning
▶ Trunked MPT features include multiple call types: individual/group/ PABX/ interfleet and short data messages, including MPT Talker Identification
▶ Swipe contacts, battery-only or battery-on-radio charging, desktop fast chargers provide efficient battery management

TP9300

The TP9300 portables offer full MPT 1327, and conventional FM, as well as conventional and trunked DMR operation in one device. The portable has inbuilt GPS, Bluetooth® wireless technology and IP67 protection.

KEY FEATURES

▶ Future proof multi-mode portables. (MPT 1327 and conventional analog FM, DMR trunked, DMR Conventional)
▶ Roaming between MPT and DMR Tier 3 trunked networks
▶ Roaming between FM Conventional and DMR Tier 2 Conventional Networks.
▶ Open standards provides choice and interoperability
▶ Engineered for demanding environments with IP67 rating
▶ Increased voice usability with integrated Bluetooth wireless technology connectivity
▶ Encryption supported
▶ Integrated GPS to improve efficiency and safety
▶ Text messaging and status calls to enhance your communications environment
▶ Crystal-clear audio quality
▶ Available in a range of models and configurable to suit your application

TP9400

With analog, 12.5kHz P25 Phase 1 FDMA conventional/trunked and 6.25kHz equivalent P25 Phase 2 TDMA trunked and LSM (CQPSK) decode capability in a single device, you can transition to a more spectrally efficient solution in a time frame that suits you.

KEY FEATURES

▶ Manage migration risk with a multi-mode portable – analog, P25 Phase 1 conventional/trunked and upgradable to P25 Phase 2 for enhanced interoperability
▶ P25 Phase 2 TDMA for increased capacity
▶ P25 standards compliance for greater choice and interoperability
▶ Smaller and lighter, Li-Ion premium battery gives 12hr shift life
▶ AES encryption, voice and data, pre-set status messages, Bluetooth, and internal GPS for safe and efficient operations
▶ Engineered for demanding environments with IP67 rating and new water-shedding grille

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 45 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 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.

OUR CORE VALUES

1) Commitment to listen:

We know that one size does not fit all. So we listen to your unique needs and design solutions that enable clear communication, both now and in the future.
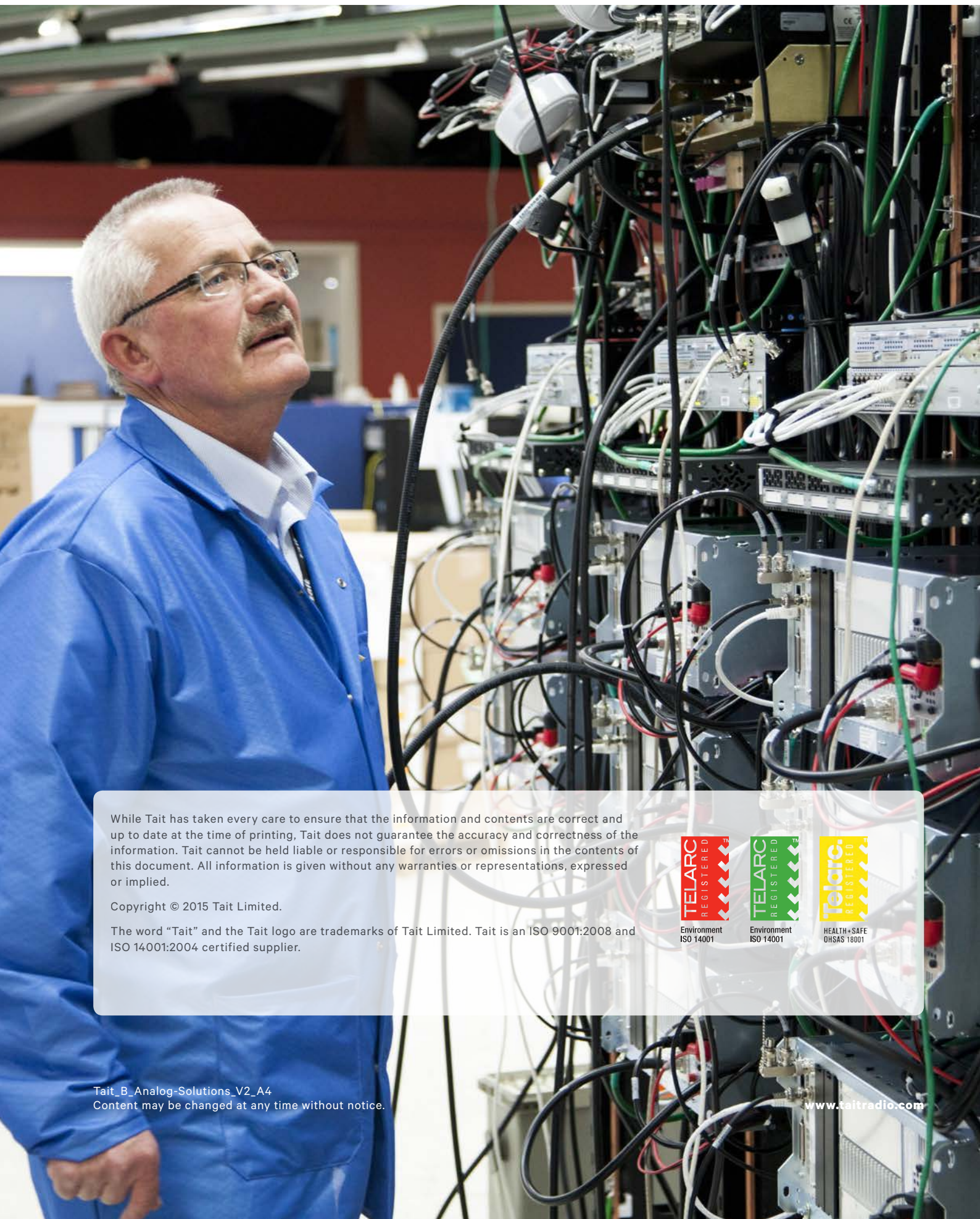
2) Courage to act:

We push technology forward, innovating and experimenting to create communication solutions that exceed your expectations, but not your budget.

3) Integrity to deliver what we promise:

We don't hide behind contracts or charge hidden fees.

We work hard to guarantee your satisfaction, then we stand beside you for the life of your network.

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