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TACTICAL SOLUTIONS

PROVIDING COMMUNICATIONS
AT THE TACTICAL EDGE



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MANET REVOLUTION

As the threat of cyber-attack and electronic warfare proliferates across the modern, multi-domain battlespace, armed forces must rely upon an aggregation of tactical communication networks to ensure maximum levels in connectivity.

Only with the support of assured and resilient communication networks will armed forces be able to accurately and rapidly detect, report, react to and dominate emerging threats across the battlespace, even in the most highly contested environments where peer adversaries retain the ability to conduct cyber and electromagnetic activities to disrupt connectivity.

Consequently, armed forces demand access to disruptive and

game-changing technologies which provide forward-deployed units with rapidly deployable, secure, robust, flexible and highly mobile communication networks.

Responding to these emerging demand signals from its global customer base, Codan Communications has acquired the US-based Domo Tactical Communications (DTC) - an established technology provider for high bandwidth and wireless communications with specialist capabilities in Mobile Ad Hoc Network (MANET) solutions.

The acquisition, which completed on 14 May 2021, expands Codan's expertise in VHF / UHF and HF communications with a MANET

mesh networking solution, providing armed forces with end-to-end connectivity and the ability to successfully conduct the full spectrum of multi-domain operations.

Why MANET?

Non-reliant upon existing communications infrastructure, MANET connects together a series of 'nodes' across a battlespace to ensure the rapid and secure routing of voice and data packets in near real-time.

Carried by dismounted personnel or integrated on board ground, airborne and maritime platforms, nodes are typically software defined radios (SDRs) which move independently across a battlespace to create a mesh network.

This network is manipulated by computer algorithms which autonomously reconfigure the network or nodes to ensure the most efficient pathway for traffic.

Particularly suited to satisfying the connectivity requirements of forward-deployed units operating at the tactical 'edge', MANET provides multi-domain forces with high capacity voice and data communications. This not only optimises levels in situation awareness but also shortens targeting cycles, even in contested environments where connectivity can be disrupted by adversarial electronic warfare units.

Furthermore, MANET can be quickly integrated into more expansive, aggregated tactical communication networks (including Line of Sight (LoS) and Beyond LoS networks

LEFT DTC SOL8SDR-H2 can be operated as a mobile ad hoc network (MANET) IP Mesh node, a point-to-point (P2P) COFDM transmitter or a P2P receiver streaming video to a tablet PC.

such as 4G LTE, VHF and SATCOM) to provide an armed force with resilient voice and data traffic across a battlespace.

DTC's Family of Solutions

DTC offers a series of MANET enabled software and hardware solutions which provide an armed force with mission critical communications in harsh radio frequency and electronic warfare environments. Benefits include robust performance; high levels in reliability, throughput and range; as well as low latency.

DTC solutions are supported by innovative network architectures which can be configured in advance of a deployment in addition to intuitive radio behaviour technology which is designed to support rapidly evolving mission requirements in the field.

Operational use cases for DTC's MANET solutions range from dismounted operations in battlefield, subterranean and BLOS environments, in addition to autonomous vehicle operations (including manned-unmanned teaming and swarming) and force protection.

Powered by the company's proprietary family of MeshUltra™ waveforms, DTC MANET-enabled SDRs support private, military grade and secure IP networks, providing the warfighter with the autonomous routing of data around a battlespace without any single point of failure.

Operating between 320MHz UHF and 5GHz, DTC solutions can accommodate more than 140 nodes across a single frequency with end users benefiting from 16 audio talk groups and a self-healing, self-forming COFDM (Coded Orthogonal Frequency Division Multiplexing) MANET IP Mesh Network providing data throughput up to 87Mbps.

COFDM, which works by splitting information to be transmitted over a larger number of carriers at very low data rates, provides significant advantages in terms of robustness

“DTC is an important strategic acquisition for us and brings complementary capabilities to our existing tactical communications solutions. We will be able to add immediate value by integrating DTC's and Codan's sales and marketing teams as we open up new geographic routes to market. Over the long term our combined engineering capabilities will allow us to bring unique communications solutions to a diverse global customer base from Military to Security to Broadcasting.”

Paul Sangster, President for Tactical Communications

and multi-path rejection over traditional “single carrier” or WiFi based communication systems.

The SOL8SDR-H2

DTC MANET solutions include the D19xx PCB; SDR-M Radio Module; SOL8 SDR-C PCB; SDR-U PCB; and SDR-C + 2x1W Amp, each of which is capable of supporting DTC's MeshUltra™ Waveform.

The latest addition to DTC's family of SDRs is the SOL8SDR-H2 - a single system designed to meet the mission-critical requirements of multi-domain forces operating at the tactical edge where robust, encrypted and highly mobile communication networks are required to provide enhanced levels in situation awareness.

Capable of being deployed at the lowest tactical level as an infantry squad radio, the SOL8SDR-H2 provides the warfighter with secure voice, position location information (PLI) and full motion video. The SDR also offers dual on-board HD-capable video encoders which allow for the support of a variety of different camera interfaces to stream live video.

The SDR can also be integrated on board unmanned aerial vehicles, unmanned ground vehicles and unmanned surface vessels as well as their ground control stations to enhance manned-unmanned teaming (MUM-T) concepts of

operation across a battlespace.

The SOL8SDR-H2 features an open-mic; full-duplex audio with four independent audio channels; integrated GPS receiver; onboard SD card storage; and 2W power output.

The SDR can also operate in a “receive only” COFDM mode, using industry-standard DVB-T or DTC proprietary narrowband COFDM waveforms to provide low latency downlink surveillance capability. Furthermore, the SOL8SDR-H2 can stream IP video output directly to multiple end user devices across the battlespace.

BELOW DTC SOL8SDR-H2





ABOVE Imagery used for DTC Mesh waveform

DTC's MeshUltra™ Waveform

Designed to turn every node across a battlespace into a 'sensor', DTC's proprietary family of MeshUltra™ Waveforms feature a greater number of Low Data Rate Carriers in comparison to competitive solutions, providing end users with extreme BLoS performance and greater range penetration across an area of operation.

Waveform offerings include the MeshUltra™ and MeshUltra-X, both of which provide fully encrypted, high bandwidth data, video and audio capability in challenging, dynamic and BLoS environments including urban and subterranean environments. Solutions are also Multiple Input/Multiple Output (MIMO) capable of double data throughput.

Additional features include variable bit rates, automatic routing,

quasi beam forming, dynamic spectrum access and auto adaptive modulation.

Self-healing MANET waveforms are able to re-establish tactical links in the network should a single node become obstructed or interfered, resulting in the re-routing data through an alternative pathway whenever necessary.

Waveform Network Algorithms also provide Low Probability of Interception (LPI), Detection (LPD) and Exploitation (LPE) - a critical requirement for tactical units seeking to better manage their electromagnetic signatures across a contested area of operation.

DTC Waveforms are also supported by Dynamic Spectrum Access which enables the SDR to automatically change its operating parameters based upon the specific mission environment it finds itself in.

Examples include DTC's proprietary Interference Avoidance System (IAS) which comprises a cognitive radio capability designed to scan multiple channels and identify the most efficient route for transmission. Not only does this mean operational frequencies can be more efficiently managed, it also allows communications to be protected from jamming and interference by enemy forces.

In the future, DTC SDRs will be capable of altering the bandwidth of transmissions dependent upon environmental conditions as the capacity of a MANET is continuously re-assessed in real-time. For example, data rates of PLI could be automatically reduced in response to emerging battlespace constraints.

Similarly, Artificial Intelligence and Machine Learning algorithms will be employed to autonomously recall which frequencies have been disrupted historically so that they can be successfully avoided in the future.

Future Soldier Solutions

ITAR-free, DTC solutions are ideally suited to supporting future soldier programmes around the World with examples including the US Army's Integrated Visual Augmentation System (IVAS); the British Army's Dismounted Soldier Awareness (DSA) concept; and the Australian Army's C4EDGE (Evolutionary Digital Ground Environment) programme.

DTC products have already proven their compatibility with the US Air Force Research Laboratory's Tactical Assault Kit (TAK) which is used by the US Special Operations Command and other special operation forces around the World to maximise situation awareness across a battlespace. TAK allows end users to securely share PLI; mapping data; messaging; and mission plans in real-time, irrespective of battlespace restrictions.

Carried by the warfighter or integrated on board any multi-domain platform, the SOSL8SDR-H2 is easily networked to a smart phone, tablet or other end user device, allowing it to display video and sensor data without requirement

RIGHT DTC NETNode used on an Unmanned Aerial System (UAS)

BELOW DTC radio used on an Unmanned Ground Vehicle (UGV)

for manual configuration during a mission.

Dependent upon operational requirements, warfighters can select from a variety of channel bandwidths ranging from 1.2MHz up to 20MHz in addition to the selection of small or large levels in data throughput.

Similarly, the SDR provides the warfighter with extended battery life and strong LPI / LPD performance to reduce electromagnetic signature as much as possible. DTC also designs its own power amplifier while SDRs can be integrated with any agnostic headset.

As a result, forward-deployed units seeking to reduce their physical burden benefit from reduced size, weight and power (SWaP) MANET form factors which subsequently increases mobility and mission flexibility.



Whether operating in dense urban environments or the most remote areas of the World, DTC's high-performance communication solutions provide any modern, multi-domain force with required levels in battlespace connectivity, no matter the environmental and operational constraints.

Codan Communications looks forward to offering its customers an extended MANET capability as it continues to fulfil its duty to support armed forces operating in rapidly changing and increasingly challenging environments.

“We provide various radio form factors for unmanned systems: - unmanned ground vehicles, unmanned air vehicles and unmanned surface vessels. This allows a squad of soldiers to operate on a single radio frequency and in a single network, receiving data and video from those diverse UAS and UGV assets. That is really powerful for the modern infantry soldier.”

Andrew Johnson, Sales Director (Europe) at Domo Tactical Communications, DTC



ABOVE Codan
Sentry-H
6110-MP

THE MILITARY NERVE SYSTEM

Communications are the backbone of military operations and the glue that binds a military force together to conduct successful missions. An effective communication architecture using reliable and appropriate equipment will support the full range of command and control activities, enabling the quick distribution of orders for future operations and the passage of intelligence and surveillance reports. This same architecture is key to effective and accurate fire support, logistic resupply, and casualty evacuation, all of which have a crucial impact on achieving a successful mission.

And in an era where multinational coalition operations are the norm rather than the exception, good communications reduce the risk of misunderstanding and battlefield “blue on blue” and are key to supporting counter-insurgency, cross-border and multi-agency operations, when all involved need confirmation of the situation.

Military communications equipment is subject to demanding physical and user requirements over and above its technical demands. It must be sufficiently robust to withstand the rough handling of the battlefield as well as surviving in extreme environments including

jungle, desert and arctic conditions. The equipment must meet the demands of its user: if it has to be carried it should be as light as possible; it should be simple to use so the user is not faced with complicated procedures; and fielding the equipment should require the minimum amount of training for quick and simple deployment.

CODAN'S HERITAGE

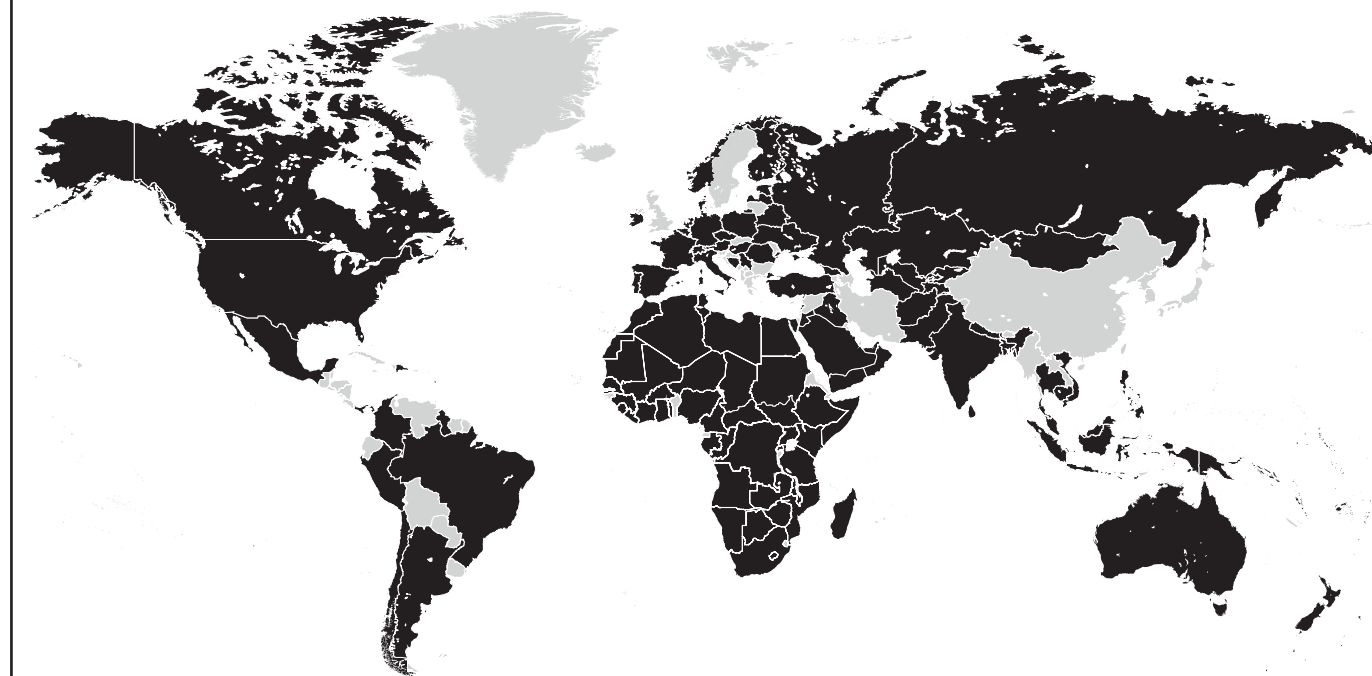
Historically, Codan Communications has provided rugged High Frequency (HF) radios to meet a requirement for beyond line of sight (BLOS) communications and continues to provide the same service to more than 150 countries with particular emphasis on Africa, the Middle East, Central Asia and Asia-Pacific. Codan has, to date, fielded over 250,000 radio units worldwide.

Codan continuously refines its offering to meet the requirement of the end user. In these days of limited budgets and scrutiny of expenditure, military communications equipment must always offer value for money, providing the right balance between cost, reliability and technological capability. Fiscally challenged end users should have available affordable radios that meet their requirements, particularly those security forces which plan to engage in operations in the most technologically advanced environments.

Even those end users that are receiving external funding need a value for money solution to meet their needs. Often these security forces do not need products built around Type 1 communications security (COMSEC) encryption devices, but rather equipment with the ability to host external encryption when needed. This will give them the ability still to participate in those high-level coalition operations which require secure communications of this nature. These non-NATO military forces need military communications equipment which meets their requirements and is affordable.

The affordable solutions that Codan Communications provides to its customers are carefully designed to

CODAN | DOMO TACTICAL COMMUNICATIONS FOOTPRINT



ensure that they provide a complete, end-to-end communications package that will connect users and headquarters at every level throughout the command chain, and in every format needed to provide effective command and control. These scalable, flexible solutions combine the sophisticated technology needed for modern military operations, the robustness to ensure survivability in combat conditions, and the interoperability

necessary for multifaceted operations with forces from different countries and agencies.

Codan is headquartered in Adelaide, Australia and has manufacturing facilities in Australia, Malaysia and in the United States. The US facility enables Codan to increase its involvement in US-funded military programmes, such as those funded under US Foreign Military Sales (FMS).

“Codan’s ability to support partner forces is second to none because of the reliability, sustainability and ease of use of its products”

Lieutenant General Charles Cleveland, US Army retired, Commander US Army Special Operations Command 2012-2015



LEFT Codan
headquarters and
manufacturing
facility in
Adelaide,
Australia

Codan has worked extensively with its customers worldwide to identify their needs and ensure that its solutions meet those needs without additional, costly and over-engineered utilities and features which are under or never utilised. Codan’s focus is on giving customers only the feature set they need, avoiding a “one size fits all” mind-set, offering solutions that, while principally focused at the tactical level, encompass requirements at all levels of command and meet operational and strategic needs as well.

THE FUTURE MANPACK: SENTRY-H 6110-MP

- Software Defined IP Based Radio
- Powerful, lightweight, extended battery life
- Secure Digital Capability Set
- Mission Customisable
- Global Service and Support

Building on its successful HF Software Defined Radio (SDR) products, Codan Communications has now developed its latest SDR manpack, the Sentry-H 6110-MP, one of the smallest and lightest tactical manpacks on the military market, which incorporates all the key features of its predecessors while adding further improvements and refinements. It complements Codan's other SDR products to address specifically the tactical defence market.

The Sentry-H 6110-MP shares the same SDR platform as the successful Sentry-H 6120-BM and is thus based on a proven capability already widely in use. It has evolved through extensive market research and consultations with both existing and potential customers. This included the consideration and evaluation of feedback on 26 data

points, all of which have contributed to the current design.

Software Defined

As a true SDR incorporating field programmable gate array (FPGA) technology all the functionality in the 6110-MP is field upgradeable. Future improvements can be easily incorporated with no requirement for the equipment to be returned for hardware alterations. In addition, dormant features are available in the software and can be activated if and when a customer desires to expand the equipment capability simply by issuing a software code. This enables future technology developments to be integrated at little cost and provides a strong protection against being overtaken by those developments – so-called “future-proofing”.

Because the 6110-MP is an IP-based radio it can be controlled remotely, offering a number of siting options to suit the tactical or physical situation. The radio can be linked either by Ethernet cable or by a point-to-point link to a remote antenna site to achieve better communications conditions or for tactical reasons. These could include siting the antenna outside or on the roof of a building while operating from inside, or displacing the antenna site from the headquarters site by some distance to reduce the headquarters' electronic vulnerability and the exposure of its location to ECM detection of transmissions. The remote capability also enables the radio to be controlled via a LAN or WAN, which combined with Codan's Virtual Control Point (VCP) software offers flexibility of control and allows HF network communications to be managed from workstations within a headquarters via a Windows PC or a tablet.

The 6110-MP can also be controlled using Codan's Xtend software application on a smartphone or tablet. Xtend can be used in all commonly used voice modes and for text-based messages. It has the common icon-based user-interface, providing familiarity and consistency to the user.

Powerful and Lightweight

Considerable effort has gone into optimising the Size, Weight And Power (SWAP) of the 6110-MP, resulting in one of the lightest HF manpack radios designed for tactical operations available to military customers and one which Codan believes to be the best performing radio in its class.

The 6110-MP weighs less than 5kg including the battery, which is a common modular, continuously evolving military BB-2590 with full System Management Bus (SMBus) information.

The radio is robust and compact, built and tested to MIL-STD 810G and its durability exceeds that of the typical MIL-STD manpack.

Secure Digital Capability

The 6110-MP has up to 1000 channels, with 500 programmable contacts and 20 programmable networks. It includes Codan's TWELP technology with a vocoder that offers rates from 2400bps to 300 bps, the latter being a lower rate than most equivalent radios, to provide communication when analogue voice cannot be used. It offers 2G ALE to MIL-STD 181-141-B and 3G ALE to STANAG 4538, as well as Codan's market-leading Voice Message Calling capability.

This new facility allows the transmission of digital voice messages over a channel where neither digital nor analogue voice communication works. The 6110-MP supports a voice message duration of up to 100 seconds at 1200 bps digital voice rate or 60 seconds at 2400 bps. All received and sent voice messages are stored in the transceiver call log and can be replayed or forwarded to other stations at any time. The voice messages can also be optionally encrypted over the air with the AES-256 encryption.

Global satellite navigation with GPS, GLONASS and BeiDou is embedded in the radio. An ECCM capability is provided with variable user-



configurable hopping sequences and bandwidth. Both AES-256 and CES-128 encryption is offered, both integrated within the radio. Using a standard H250 handset connection, external devices such as handset, headset, intercom and external encryption devices can be added in addition to the Codan 2230 smart handset. Combined with the Codan exclusive Secure Interoperability feature, programmed per channel, this gives the radio the unique ability to operate with three different COMSEC protocols which may be required for integration with existing or other agency communications.

Customisable and Tactically User Friendly

The new user interface of the 6110-MP has been developed based on the customer research programme and using Google's Material design methodology. The customisable icon-driven menu has been completely redesigned and it has been widely tested with a variety of environments and users to ensure that it is as intuitive as possible and useable even by operators who have little knowledge of technical terminology. It is practical and easy to follow.

A key principle has been to make the interface as easy to use and as familiar as a smartphone interface, in order to impart confidence in operating the radio to those

unfamiliar with doing so and to reduce the training requirement. A visually representative icon presents a common reference point, unlike legacy character references which can present challenges to users with limited education or low literacy levels.

Network administrators have the ability to customise the interface for particular user sets, hiding menus and options which users do not require to avoid inadvertent mistakes. They can build customised macros to set up the radio to best utilise the features required by particular users, a further demonstration of Codan's philosophy of getting the most from the product with the minimum of complexity.

The interface is currently available in up to 10 languages with additional options set for the future. The radio faceplate is a simple bolt on design to make the hardware language reconfiguration as simple as possible. This is a unique but simple approach to solving the problem of providing commonality of equipment for multinational and multilingual force deployments.

There are some design features specifically intended to enhance tactical use. The integral speaker allows commanders to conduct remote operational updates and

briefings over the air directly to troops on the ground in a single communications effort, reducing the time spent in battle procedure and thus increasing operational tempo. The radio has a discreet mode which enhances sound and light discipline, instantly silencing the integral speaker and the display and keypad luminosity. A new addition is a two-handset configuration, added specifically at the request of customers, which either enables two users to operate the radio at the same time, or allows additional external encrypted devices to be connected.

Global Service and Support

The 6110-MP has a three-year extendable warranty, which has a significant impact in reducing sustainment budgets. It is also ITAR-free, which enables it to be repaired in-country, unlike some products which have to be shipped back to the United States or out of the host country for maintenance. This means that the radios, when necessary, can be repaired by Codan's global network of trained service centre engineers and quickly returned to the front line, or customers can be trained to sustain their radio fleets themselves. However, the Mean Time Between Failures (MTBF) record of Codan's products is so good that experience has shown that the need for service and support is minimal.

ABOVE Codan Sentry-H 6110-MP

“The Sentry-H 6110 Software Defined Manpack provides the latest technology allowing for ease of use, affordability and quicker upgrades ensuring our customers have the flexibility required in today's challenging environments”

Paul Sangster, President for Tactical Communications

CODAN'S TACTICAL SOLUTIONS

Best known for its HF Transceivers and Interoperability solutions, Codan also offers a range of tactical VHF and UHF products, through its Sentry product family.

Sentry-V 6150

Codan's Sentry V 6150-HH is a tactical secure VHF (30-88 MHz) radio offering a fully comprehensive layer of features as required by the user. The radio can be utilised in various roles to include HH – Handheld, MP – Manpack (20 W) and BM Base/Mobile (50W).

With simplified operation from only two rotary switches and two side buttons together with a clear backlit LED display the user interface requires only minimal training. With 10 programmable pre-sets (over a range of 2320 25 KHz spaced channels) the radio can be easily configured. Embedded GPS combined with a dedicated antenna can display positional information on the radio or software which can be configured to send as the mission dictates.

The 6150 can be configured to meet the needs of the user with set channels, power and waveform. The radio also supports selective calling

capabilities providing a robust messaging solution. Programming the radio can be done directly via the radio interface, programming software, a fill gun or cloning.

Data transmission using FFSK and 4LFSK waveforms with up to 24 kbp/s throughput is supported with an asynchronous data modem, which enables virtually any external data device to be connected. A Text Messaging capability is included which enables the transmission of user-defined, pre-composed messages over the network, thus reducing network activity and increasing operational efficiency.

Complete with integrated AES- 128 or advanced AES 256 encryption the advanced model also supports ECCM Frequency Hopping (FH) that can be synchronised by either GPS or Internal clock for use in satellite denied environments. Hopping can be configured to use either band hopping (setting of the upper and lower fx) or setting the middle frequency and the hopping bandwidth (default 1MHz).

The 6150 is complemented by a range of accessories. These include various headset with press-to-talk; long, medium and short blade-model antennas; battery chargers (single and multi-bay); and a fill gun. The 6150-BM includes the vehicle adapter and RF 50W power amplifier, and a separate console is available for vehicle mounting, providing a control panel and integrated loudspeaker.

Sentry-U 6160-PR

Codan's Sentry-U 6160 Personal Radio is a compact, lightweight secure UHF radio covering the 2405-2480Mhz frequency band with a range of modes and functions to support both mounted and dismounted tactical operations. It has three levels of RF output power: 100mW, 400mW and 650mW.

The 6160-PR offers up to 16 programmable pre-set channels and up to 64 different networks all operating on a common frequency, with each one having an assigned programmable ID thus providing a flexible network structure. It provides a mesh networking capability of up to seven hops, increasing coverage

and overcoming interference from obstacles and difficult terrain; a single hop in open terrain can achieve a range of up to 2km. The adaptive intelligent rebroadcasting feature automatically negotiates between radios without the need for complex TDMA timeslot programming.

User configurable automated network voice announcements provide operator confirmation when selecting networks, reducing user distraction. The radio can be programmed in the field using a fill gun.

The radio provides different communications nodes, giving operational flexibility. These include simplex digital voice with or without automatic retransmission and data transmission with a maximum throughput of 125 kb/s. It can also provide full duplex time-division multiple access (TDMA) digital voice communication (conference mode) supporting simultaneous data

transmission at up to 19.2 kb/s. All the radios on the network are able to operate in conference mode with up to four transmitting voice audio streams and an unlimited number of receive streams simultaneously.

A built-in press-to-talk (PTT) button is provided, along with an integrated speaker for enhanced usability. Complemented by wireless PTT's with an extended battery life exceeding over one year that can be assigned and unassigned to radio assets in seconds. To ensure wireless PTTs integrity they operate using frequency hopping to avoid channel conflict with similar devices.

The 6160-PR has an integrated GPS with an optional external antenna. Positional reporting can be configured according to operational requirements including on demand by other users. Security is provided by optional embedded AES-128 encryption together with a low probability of detection waveform. In an emergency the radio can be

zeroised by the operator.

In the mobile, vehicle-mounted configuration the 6160-PR is installed in a docking station, which enables it to be used with an external antenna with resultant increased range and network footprint. The docking station can also be integrated with a vehicle harness and intercom. Codan's various interoperability solutions allow connection of the 6160-PR into other Sentry and legacy radio networks. Typically this can extend the network over other communications bearers or link mutual forces and networks together to provide enhanced tactical awareness and command.

RIOS

Codan's Radio InterOperability System (RIOS) provides interoperability between a range of communications devices and signalling platforms, including HF, VHF and UHF radios, satellite, fixed cellular phones, as well as SIP and IP devices. It is Frequency,

COMSEC, TRANSEC and equipment manufacturer agnostic. It can enable a fully integrated communications network from anywhere in the world, can operate as a stand-alone solution without the need for an external internet connection or can provide a remote or multisite solution with a Wide Area Network (WAN) connection. IP connections between the RIOS and its various Windows, iOS and Android remote connections are secured by TLS v1.2, ensuring complete end to end network security.

As standard, RIOS has eight high-density interface ports which provide an audio bridge, allowing the rapid interconnection of disparate devices by means of the intuitive Graphical User Interface. Network options include a Local Area Network (LAN) with Wi-Fi. RIOS can be expanded to support larger systems either locally or via IP using the networking feature.

LEFT Codan's Sentry-V 6150 provides commanders and operators with a feature rich secure voice and messaging platform.



“Codan’s VHF and UHF radios utilise the most modern technology to provide lightweight, flexible and effective communications solutions for use in tactical environments. The tactical solutions range also includes a crosspatch integrator unit which enables VHF/UHF cross-frequency and cross-platform interoperability.”

Gene McConville, Vice President for Business Development and Government Relations, Codan Communications

TACTICAL TRACK RECORD

Codan has established a strong position in the military and para-military market with its current range of tactical products. In addition to multiple undisclosed East and Central European nations, Codan's successful communications projects include:

• **Afghanistan Government Agency Communication Network.** This contract involved the provision of HF radio equipment to support an Afghanistan government agency's countrywide secure interoperable communications platform for voice and data transmissions in an area of austere terrain and lacking infrastructure. The multi-year project requirement procured over 8,000 Codan NGT SRx Base/Mobile and 2110 Manpack HF radio systems and services to support secure HF voice and data communications for the agency. The Codan HF radio solutions supplied the agency with a common communications platform, enabling them to coordinate operations between remote border locations and the agency Headquarters as well as supporting communications with other government organisations. Codan systems provided the agency with a self-contained HF network solution which delivered the BLOS communications demanded by the country's austere terrain.

• **Central Asian Inter Agency Communications Network.** This contract provided ten federal agencies within a central Asian country with an interoperable communications platform



LEFT Sentry-U 6160-PR provides a secure inter/intra communications platform that can be deployed to the forward edge of operations.

that supports voice and data transmissions. The multi-year project procured Codan NGT SRx Base/Mobile HF radio systems and services that are capable of transmitting voice, email and pictures for report dissemination. Codan supplied the agencies with a common communications platform to enable them to coordinate among their respective peers from other organisations as well as communicate with their own higher headquarters while conducting joint operations. The project also included the development of multi-language versions of the radio to support the customer's specific requirement.

• **Central Asian Border Service.** Codan was chosen to equip the Border Service of another central Asian country with a robust, tactical and dependable Information Sharing Communication System (ISCS) for

them to perform their mission of protecting their country's borders. Codan delivered NGT SRx Base/Mobile HF radio systems and 2110 Manpack Systems. The ISCS serves as the foundation of all voice and data communications for the Border Service of the country, providing local communication at each Border Service facility, communication services between Border Service facilities, and long distance communication services from lower echelon Border Service facilities to the Border Service Headquarters. The project included the successful installation of the system and the delivery of an in-country training programme and continuing service support.

• **Bangladesh Army.** In 2018 the Bangladesh Army purchased 200 Codan Patrol 2110 manpack HF radios for use in post-disaster recovery operations and to support the Bangladesh Army's UN peacekeeping missions in Africa.

FOR MORE INFORMATION CONTACT

sales@codancomms.com | codancomms.com

Australia Office
Codan Limited
2 Second Avenue
Technology Park
Mawson Lakes
South Australia 5095
Australia

Phone: +61 8 8305 0311

Dubai Office
Codan | Domo Tactical
Communications
305-306, Tower BB1,
Mazaya Business Ave
Jumeirah Lake Towers
United Arab Emirates

Phone: +971 44 53 72 01

Singapore Office
Codan | Domo Tactical
Communications
Infinite Studios
21 Media Circle #05-06,
Singapore, 138562
Singapore

Phone: +65 6339 0508

US Office
DTC
2303 Dulles Station Blvd
Suite 205
Herndon
VA 20171
United States of America

Phone: +1 727 471 6900

UK Office
DTC
Fusion 2
1100 Parkway,
Whiteley, Hampshire
PO15 7AB
United Kingdom

Phone: +44 1489 566 750

Denmark Office
DTC
Haraldsvej 64B,
DK-8960
Randers SØ.
Denmark

Phone: +45 8791 8100