

T-MATRIX™

ROBUST
COMMUNICATIONS
FOR REVENUE ENFORCEMENT &
INTELLIGENCE AGENCIES



Communications for Revenue Enforcement & Intelligence Agencies

Due to the fast pace of development in technology, Revenue Directorates all over the world will have to continuously consider upgrading their equipment to remain ahead of the field. In the last decade, rapid advances have taken place in communication technology particularly with the move to digital communications.

The ability to talk and exchange information easily and reliably while conducting enforcement and intelligence operations is vital. Therefore a convenient and reliable professional mobile radio system is essential in such operations.

Old analogue systems (including the walkie-talkie type) have now given way to more advanced digital radio systems and professional users such as the enforcement and intelligence agencies must now upgrade to more modern systems to remain effective.

TETRA Digital PMR (professional mobile radio) has the features that makes the work of these agencies far more effective, safe and convenient and is today the most widely accepted standard globally. The TETRA standard is developed by ETSI (European Telecommunication Standards Institute) and offers the following advantages over conventional analogue radio systems:

- Secure encrypted communication
- Excellent voice clarity due to digital sound
- Subscribers can make Full Duplex Calls (normal telephone type) in addition to the usual Push-to-Talk
- Offers 4 communication channels in a standard 25 KHz bandwidth – therefore the most effective use of the available frequency spectrum
- Allows simultaneous voice and data transmission
- Subscriber grouping based on tasks, order of hierarchy etc.
- Location monitoring via digital signalling of terminal coordinates
- Dynamic group creation
- Priority calls, broadcast calls etc.

.....and a host of many other features not possible on conventional systems.

Public (GSM / CDMA / WiFi) vs. Private Secure Communications

Public networks (mobile phones) are not secure and are unreliable during important missions and operations when uninterrupted communications is critical. A TETRA system is private and secure and is fully controllable by the users and not dependent on public operators to provide the service.

Command-and-Control during Enforcement & Intelligence Operations

TETRA systems can be set up in a command-and-control structure based on the grouping features and thus movement of units and forces can be controlled properly in a coordinated action when required. A central Dispatcher can be installed at the command and control centre and has convenient features to set up, monitor, record and control calls.

Covert Operations

TETRA systems are very suitable for covert operations due to simultaneous voice and data capabilities. Operatives can covertly communicate short messages without speaking or send out pre-defined messages based on single button. The Ambience Listening feature can be enabled to hear the surrounding sounds and talk covertly at the Command Centre.

Location Monitoring

Using the Short Data Service (SDS) functionality available for TETRA systems, GPS enabled terminals can be set to continuously transmit their location coordinates that can be plotted on a digital map at the command centre. Therefore the command post can not only communicate reliably but also 'see' the movement and location of deployed operatives in the field - this is extremely vital input for effective control.

Why is Artevea T-MATRIX™ the answer?

Artevea Digital Limited is a leading supplier of TETRA infrastructure, delivering complete systems on a turnkey basis configured to the requirements of specific users.

Artevea offers several deployment models based on user needs and provides support services to ensure effective value for money.

Deployment Models for Enforcement and Intelligence Agencies

T-MATRIX™ F - Fixed Networks

Enforcement agencies such as the Customs Department usually operate in fixed locations such as ports, airports and border areas or known locations of warehouse areas etc. They may have to make repeated visits to these areas and locations. For this, small fixed base station networks providing adequate coverage are recommended. These networks are available for continuous use and for normal day-to-day operations. The Command Centres for these networks can be at fixed locations e.g. district or area headquarters and can be fully equipped with dispatchers, voice recorders and automatic location monitors. Emergency alarms can be raised at these locations, if necessary. Artevea's fixed networks can be easily scaled up due to their unique switchless architecture.

T-MATRIX™ P - Portable Systems

The T-MATRIX™ P system is especially designed for portability, can be pre-configured with a set of terminals, easily loaded into a Jeep or Land Rover and transported to target locations. A full feature local digital communication network can be set up within minutes with a range of up to 50 kms radius (depending on the antenna height and local topography).

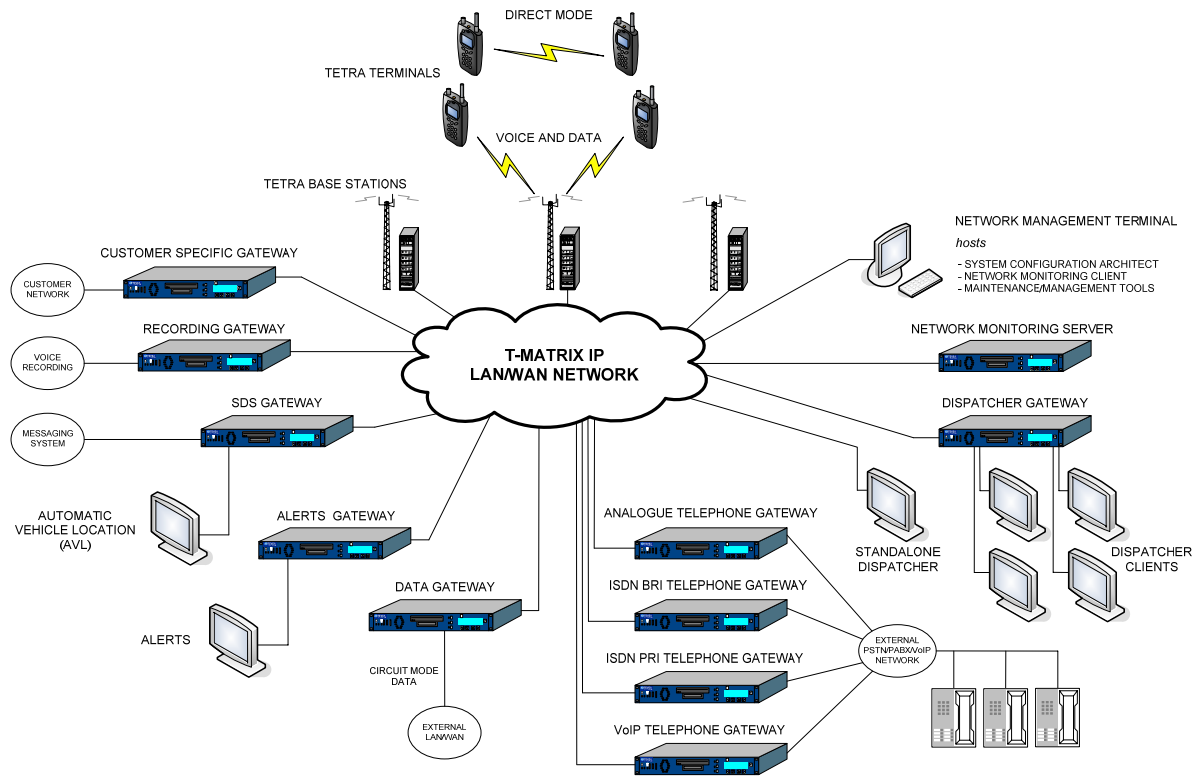
Artevea – A Unique Offering

All TETRA hardware, throughout the world, is made to the TETRA standard which is defined by ETSI (European Telecommunication Standards Institute) and therefore must comply to this standard in order to ensure interoperability of terminals. Any make, model type and mix of terminals can be chosen for a network. How then do we differentiate ? -The primary difference is in the network design and architecture.

- Artevea designs and deploys TETRA infrastructure and gives full freedom of choice to the customer for the terminals.
- Artevea's networks are easily scalable as they do not have a central switch driving the base stations. Each base station has the trunking/switching intelligence built-in and therefore can operate in full feature mode at all times.
- Equipment redundancy is automatically built-in. Since each base station can operate independent of any central controller, they continue to work even if parts of the network may be down due to power failure or any other reasons.
- Artevea systems are easier to maintain without taking critical shut downs of the system.

Artevea not only has a number of its own support and service centres around the world but also works closely with partners providing further in country local support and allowing rapid response to customer needs.

The T-MATRIX™ Network



A typical T-MATRIX™ network may consist of:

- Networked TETRA Base Stations (TBS) with multiple transceivers
- Network Management Terminal (NMT) - for system configuration and management
- Network Monitoring System - for monitoring the network and reporting network alarms
- Dispatcher(s) - for day to day control of the T-MATRIX subscribers
- Telephone Gateways to allow communications with Analogue, ISDN BRI, ISDN PRI and VoIP users
- SDS Gateway to interface to messaging systems and Automatic Vehicle Location Solutions (AVLS)
- Recording Gateway - to interface to recording solutions for playback of TETRA calls.

Please refer to the appropriate product brochures for more information.

About Us

Artevea Digital Limited based in Cambridge, UK has its origins in Pye Telecom (1946), the pioneers in portable radio communication equipment and later Philips Telecommunications Ltd. (1975). Artevea is one of the global leaders in TETRA Infrastructure, known for its application focus and total flexibility to meet customer needs and have marked the supply of T-MATRIX™ to the 100th country to adopt TETRA. Products have been also supplied to the Indian Army, UN and NATO.

SMP 111 Issue 1.0 January 2010 Due to our policy of continuous improvement of our products and services, technical specifications and claims, whilst being correct at the time of going to print, may be subject to variation without prior notice

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