



CYBER & SECURITY SOLUTIONS

ADAPTANET

TETRA IP COMMUNICATIONS SOLUTION

 **LEONARDO**

TETRA is the communication standard of choice for those organizations or groups that need immediate, reliable and secure communications. Engineered to provide dedicated, secure and reliable communications for the emergency services it is also an ideal technology for the industrial market where the same requirements are applicable. The versatility of TETRA technology makes it an ideal solution for sectors as:

- Police and Security departments
- Emergency Operators
- Government Agencies
- Defence forces
- Utilities
- Transportation
- Airports and Ports

TETRA is an optimal choice to support different applications scenario where the security and reliability of communications is a mandatory requirement

LEONARDO ADAPTANET

Adaptanet is Leonardo TETRA solution designed to cover a wide range of system dimensions ranging from single-site systems to regional and national networks for mission and business critical applications. Full IP connectivity and the ability to use existing LAN infrastructures as backbone support integration with existing systems, enabling customers to benefit from further cost savings. Thanks to the separation between control plane and user plane, Adaptanet® IP allows the deployment of IP networks and supports customers in their choice between small-medium networks up to national architecture. The network architectures can be realized simply through the use of our Base Stations DTA-Node equipment interconnected in various configurations and coordinated by a switching and management infrastructure (SwMi) implemented via Leonardo CSP Ecosystem.

DTA NODE RADIO BASE STATION

DTA is the new family of Leonardo convergent modular multi technology radio base stations, leveraging powerful hardware modules, increased security and high degree of flexibility. Complex TETRA networks can be realized by combining the same building block, called DTA carrier, implementing a

complete transceiver in terms of computational power, synchronization capabilities, radio and terrestrial interfaces. DTA carrier is encased in 19 inch standard shelf allowing modularity in node construction and provides Ethernet ports for interconnection with the external world.

Each DTA carrier module provides all the TETRA functionality, with two or three-way receiving diversity, and it is constituted by three boards providing:

- Radio Transceiver Base Band functions
- Radio frequency Unit function
- Power Supply Unit function.

DTA is available in 2 carrier, or 4 carrier is characterized by a combination of hardware characteristics and architectural features that allow to implement effective and robust professional networks solutions in terms of reliability and maintainability.



A compact configuration with 2 TRX completely housed in standard 19" cabinet is available as well.

CSP ECOSYSTEM

CSP (Communications Service Platform) Ecosystem is Leonardo implementation of hybrid multi-technology concept that extends the concept of TETRA core network to broadband and DMR. Leveraging virtual networking concepts that support flexible deployment and extensive scalability, CSP Ecosystem is composed by several logical nodes implementing all needed elements to run and manage a TETRA network.

It provides either the SwMi (Switching and Management Infrastructures) as well as the Gateway component for

interfacing external network, the control room functions and the network management application.

CORE NETWORK	CSP-CM Communication Manager	Voice/data services for integrated networks
	CSP-SMN Service Management Node	Subscriber management
	CSP-GW Gateway	Interface with other networks (specialized according type)
CONTROL ROOM	CSP-EVoCM Enterprise Voice Call Manager	PABX management
	MCCR Mission Critical Control Room	Enhanced technology agnostic dispatching and command/control
	CSP-REC Recorder	Server/Client multi-protocol recorder
	CSP-CRIS Control Room Interface Server	Application server for third party control rooms
MNGT	CSP-NMS Network Management System	Network management application and functions

CSP supports multi level fault tolerance thanks to redundancy, resilience and disaster recovery features. The interconnection of several CSP Node equipment ensures system expandability for larger configuration up to nationwide deployments. Previous generation TDM TETRA network can join in a CSP networks by means of a suitable Gateway (part of CSP ecosystem) and forming a unified network according to CSP philosophy

TERMINALS

Third party handheld and mobile terminals can be used in TETRA solutions powered by Adaptanet. Leonardo VS4000 combines the power and performance of the VS4000 TETRA radio unit with the new, flexible and user-friendly FPG3 series front panels.

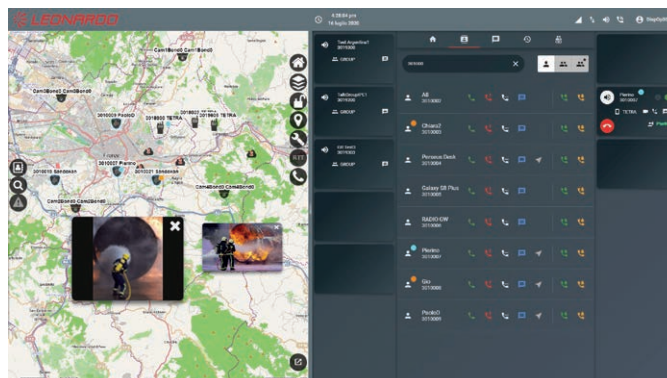
A variety of interfaces (LAN, USB) is provided for flexibility and ease of installation and maintenance. Additionally, DMO Repeater/Gateway, Air-Interface, End- to-End Encryption features and integrated GPS receiver make VS4000 fulfil the most demanding mobile communications requirements of



CONTROL ROOM AND DISPATCHING

Mission Critical Control Room (MCCR) offers a complete IP based dispatching solutions leveraging a flexible web-based implementation. Adaptanet is however an open platform

featuring Application Programming Interface (APIs) through a dedicated server (CSP-CRIS) allowing integration with third party applications at a network level (e.g. for CAD services). Sophisticated event management applications can be implemented leveraging Leonardo GenesiX platform for enhanced situational awareness, coordination and control. Adaptanet also includes a state-of-the art voice recording solution, specifically designed for TETRA, capable of storing more than 100.000 hours of TETRA encoded speech, in a highly secure redoundable server.



ADAPTANET SECURITY

Adaptanet provides end-users with high performance and secure encrypted communications, providing essential core services for voice and data calls as well as a comprehensive range of supplementary and enhanced services. Interoperable authentication and encryption key management solutions complete Adaptanet offer in terms of security material handling, storage, and distribution. Comprehensive security of the network is enforced by careful selection of hardware elements, characterized by the correct version of operating system and patches and application of robust cyber protection solutions. 2 Factor authentication solutions as well as use of suitable hardware encryption modules can be additionally used to protect the most critical items such as administrative passwords and encryption keys.

INTEGRATION

Adaptanet provides native broadband integration capabilities and is part of RIM a wider Leonardo hybrid network solution designed to provide unified communications services to professional users. Leveraging 3GPP standard LMR-IWF and MCX protocol Leonardo can design and deploy multi technology integrated communications solution that support seamless narrowband/broadband communications, unified users management and common control room services.

KEY FEATURES

- Fully TETRA standard • Full IP architecture
- State of the art ICT technology for a future proof network
- Scalability and flexibility in configurations
- Customization possibility
- Intrinsic broadband interoperability
- TDM interoperability for previous investment preservation
- Cyber secure solution Integration of Bring your own key, Hold your own key and Confidential Computing mechanisms
- Support in evaluating the best migration strategy to the Cloud

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