Global Horizon
TRAINING CENTER

Training Course:
TETRA Radio Systems

14 - 25 September 2025
Cairo (Egypt)
Holiday Inn & Suites Cairo Maadi, an IHG Hotel

Training Course:
TETRA Radio Systems

Training Course code: EN236157 From: 14 - 25 September 2025 Venue: Cairo (Egypt) - Holiday Inn & Suites Cairo Maadi, an IHG Hotel Training Course Fees: 6600 Euro

Introduction

TETRA Terrestrial Trunked Radio is a globally adopted digital radio communication standard used extensively in critical communications such as public safety, transport, oil & gas, utilities, and defense sectors. This 12-day in-depth training program developed by Global Horizon Training Center provides engineers, technicians, and radio network managers with the technical expertise to design, configure, operate, maintain, and troubleshoot TETRA radio systems in mission-critical environments.

Objectives

By the end of this program, participants will be able to:

- Understand the principles and architecture of TETRA systems.
- Configure and manage TETRA base stations, terminals, and core systems.
- Apply best practices for signal planning, coverage optimization, and capacity management.
- Perform maintenance, diagnostics, and fault isolation.
- Implement encryption, user access control, and security protocols.
- Support end-user operations and dispatch functionalities.

Organizational Impact

- Improved availability and performance of critical communications
- Enhanced capacity for internal maintenance and support
- Reduced dependence on external vendors for TETRA management
- Increased resilience and uptime of communications during emergencies
- Greater user satisfaction through reliable voice and data services

Target Audience

- Telecommunications Engineers
- Radio Network Planners and Operators
- System Administrators and RF Technicians
- Oil & Gas, Transportation, and Utility Communication Teams
- Public Safety and Security Communication Specialists

Training Program Outline

Day 1: Introduction to TETRA Systems

- Overview of digital trunked radio
- History and role of TETRA
- Key features and benefits
- Industry applications and standards ETSI

Day 2: TETRA Architecture and Network Elements

- TETRA system structure: MS, BTS, SwMI, control room
- Logical channels and call handling
- Air interface and protocol stack
- Interfaces and interoperability

Day 3: TETRA Radio Access and Air Interface

- TDMA structure and time slots
- Control vs. traffic channels
- Call setup process and handover
- TETRA DMO Direct Mode and TMO Trunked Mode

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Day 4: TETRA Terminals and User Equipment

- Types of terminals: handheld, vehicle-mounted, dispatch
- Terminal configuration and programming
- Authentication and encryption basics
- Group call vs. individual call handling

Day 5: Base Stations and SwMI Operations

- BTS design and configuration
- Base station parameters and frequency planning
- Switching and management infrastructure SwMI
- Synchronization and network timing

Day 6: TETRA Network Planning and Coverage

- RF planning principles for TETRA
- Coverage, capacity, and frequency reuse
- Site selection and antenna design
- Propagation tools and simulations

Day 7: TETRA Voice and Data Services

- Group calls, broadcast calls, and emergency calls
- SDS Short Data Service and Packet Data
- Status messaging and location-based services
- End-to-end latency and QoS considerations

Day 8: Security, Encryption, and Authentication

- Air interface encryption TEA1, TEA2, TEA3, TEA4
- Authentication process and key management
- Terminal security and user profile protection

- Best practices in secure communication

Day 9: Network Monitoring and Diagnostics

- Performance monitoring tools
- System alarms, logs, and analytics
- Radio testing RSSI, BER, SINAD
- Troubleshooting scenarios and diagnostic steps

Day 10: Maintenance and Firmware Management

- Preventive maintenance and site inspections
- Firmware updates and patching terminals
- Battery and accessory maintenance
- Fault isolation and RMA processes

Day 11: Dispatch Console and Control Room Operations

- Dispatcher features and workstation setup
- Command & control integration
- Real-time monitoring and group control
- Incident communication management

Day 12: Case Studies, Trends, and System Upgrades

- TETRA use in oil & gas, transport, utilities, and emergency services
- Integration with LTE and broadband solutions
- Upgrading TETRA infrastructure
- Future of critical communications and hybrid solutions

Registration form on the Training Course: TETRA Radio Systems

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Company Information

Company Name: .....
Address: .....
City / Country: .....

Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
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Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
- ☐ Please invoice me
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Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.