PRODUCT AND SYSTEM TECHNICAL TRAINING COURSE CATALOGUE

MOTOROLA SOLUTIONS - WORLDWIDE EDUCATION
Day in, and day out, governments and businesses around the world rely on effortless and reliable communication. Our customers call it their lifeline. To help businesses operate without interruption and to safeguard communities, workplaces, and ultimately, each one of us, we are determined to help keep the lifeline unbreakable.

With Motorola Solutions, Inc. Education Services, we help your two biggest lifeline investments - your personnel and your technology infrastructure - work together efficiently to maximize the value of your communication technologies.

Whether your organization is new to our latest innovations or has years of experience with us, our Education Services team helps expand your personnel’s skills and knowledge for the full application of your technology investment.

Starting with professionally developed, real-world application and content, we always design your training with the learner in mind. Our experienced instructors average 20+ years in the communications industry and specialize in Motorola Solutions technologies and services. Immersive, hands-on experiences, expert lab environments, or online learning ensure we meet your learners with the right kind of learning at the right times.

Whether training is delivered virtually, at your location or in our state-of-the-art facilities, we can help ensure that your personnel know how to amplify your investment, maximize operational efficiency, and ensure an unbreakable lifeline.

We look forward to working with you.
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GENERAL INFORMATION

OUR LEARNING EXPERIENCE PORTAL

AN INTERACTIVE PLATFORM... DESIGNED FOR YOU! THE LXP IS YOUR VALUABLE RESOURCE TO SEE THE LATEST COURSES, DESCRIPTIONS, REQUIREMENTS, DATES AND LOCATIONS.

Use the search box and filters feature to quickly and easily search for training or documentation.

View your history and upcoming training on your personalized dashboard.

Receive reminder notifications of upcoming training or changes to your training.

Easily locate and download documents plus stay up-to-date with training news and announcements.
HOW TO ACCESS THE LEARNING EXPERIENCE PORTAL

If you are a Motorola Solutions Customer who already has a Motorola Solutions Login ID, you can go to the “Enrol in a course” section for further instructions.

SET UP A NEW USER ACCOUNT AND PASSWORD

- Visit: https://learning.motorolasolutions.com
- Click “Register”
- Fill Out all the required information on the form (if you are a MSI Customer with an established 10-digit Motorola Customer Account Number, please enter your Company Name in the form)
- Click “Submit”
- You will receive a confirmation of your submission
- You will next receive further information to activate your account (Up to 5 business days)

TO ENROLL IN A COURSE (ONCE YOU HAVE AN LXP ACCOUNT)

- Log in to the LXP: https://learning.motorolasolutions.com
- Click on “LOG IN”
- Enter your Log In ID and Password and Click “LOG IN”
- If you have forgotten your Log In or Password click on “Forgot Log In ID” or “Forgot Password”
- Find a training course by clicking “Browse Training” at the top of the screen Or use “Search Catalog” at the top of the screen
GENERAL INFORMATION
For information on prerequisites and to register for courses visit the LXP at:
LEARNING.MOTOROLASOLUTIONS.COM
For general information contact the Europe, Middle East and Africa Education Services Help Desk at:
training.emea@motorolasolutions.com

TRAINING OPTIONS
In this catalogue you will find a wide range of learning initiatives; some of them have been developed to be completed at your own pace, and others are led by our Technical Instructors:

LIVE TRAINING
It consists of scheduled live sessions, delivered either in class or in a virtual environment by our Technical instructors. Participants can immerse themselves in the subject; they receive substantial time for hands-on training that enables them to develop creating solutions for unique problems. In both classes, the number of seats available is limited and advanced registration is required.

On-the-job training is also available, for those who prefer a more direct instruction.

ONLINE TRAINING
Online self-paced learning allows your team to gain foundational knowledge on a variety of topics using their computer, at their own schedule.

Where to start? Our training roadmaps will let you know the starting point and milestones of your development, so you can make sure you acquire the right knowledge to make the most of each step of your learning process.

UNDERSTANDING THE ICONS

LIVE TRAINING
ONLINE TRAINING
EXAM

POLICIES AND REQUIREMENTS
CANCELLATION AND RESCHEDULING BY THE STUDENT
Customer cancellation or rescheduling made less than 30 days prior to the class start date will be subject to the full course tuition.

CANCELLATION AND RESCHEDULING BY MOTOROLA SOLUTIONS
Motorola Solutions reserves the right to change or cancel classes up to 10 business days prior to the class start date. You will be notified at that time of such change or cancellation.

PROFESSIONALISM
Students are expected to maintain professional conduct and dress at all times. Class dress is casual, but smart.

LAPTOP REQUIREMENTS
All our classes require students to bring their laptops to the classroom so that they may utilise an electronic copy of the class material. Please review your enrolment confirmation email for specific requirements for your class.

TRAINING CONTENT AND STRATEGY DISCLAIMER
All of Motorola Solutions training classes are designed to support and align with the Motorola Solutions Service strategy for each product. This strategy may include a combination of (but not limited to) processes, procedures, recommendations, and instructor experiential advice which may involve repair, replacement, and or recovery of hardware, software, or firmware of Motorola Solutions products. The repair, replacement, or recovery of these products may vary from product to product. Motorola Solutions reserves the right to change the structure and content of all courses at any time.
EDUCATION BUNDLES: ACCELERATE YOUR LEARNING JOURNEY

Worldwide Education understands your challenging needs during uncertain times. Travel limitations, the continued safety of your first responders that serve and protect your citizens, and assurance there is zero training downtime is critical. To meet these challenges, we offer course bundles that combine a virtual learning experience with traditional, hands-on learning.

Watch the video to learn more about how you can accelerate your training today.

THE TWO COMPONENTS OF OUR EDUCATION BUNDLES
The virtual component will focus on live discussions, application-based demonstrations, and various online activities using our virtual training hosted solutions and our lab environment.

The practical component will take place at either one of our facilities or, in case of buy-out sessions, at your location. This part of the training will focus on performing the tasks discussed in the virtual sessions. Once you have complete the two components, you will receive credit for the bundle and the equivalent traditional course.

Compared to our traditional full in-class offerings, you may be able to combine multiple practical components into one week or less. This will not only allow you to complete multiple courses (bundles) during that time, it will also help to reduce your overall travel costs and time investment.

BENEFITS FOR YOU
• Live training sessions led by our subject-matter expert certified instructors accessible from your computer
• Practice through demos and guided virtual lab environment
• Active participation and interaction assured, by limiting the number of participants per group
• Reduction of travel expenses and time away from home

READY TO GET STARTED?
Find your courses or email us at training.emea@motorolasolutions.com
QUALITY ASSURANCE: THE TPMA FRAMEWORK

MOTOROLA SOLUTIONS WORLDWIDE EDUCATION COMMITS TO EXCELLENCE IN INSTRUCTOR-LED TRAINING

For 45+ years, our instructors continue to be laser-focused on your two lifeline investments - your personnel and your technology infrastructure. Our mission is to work together efficiently to maximize the value of your communication technologies.

Motorola Solutions is aware of the impact training experiences have on your team and your organization. When it comes to supporting the success of your employees and your technology infrastructure, we seek to continually deliver exceptional training to you.

For over 10 years, we have built and implemented the Training Performance Monitoring & Assessment (TPMA) framework in our organization. Our internal instructors are held to the highest level of training standards outlined within the Learning & Performance Institute (LPI). The TPMA certificate is widely-recognized and accepted as the premiere institute for learning, assessing and benchmarking trainer progress.

Anywhere in the world, those who hold a TPMA certificate demonstrate that they have reached or exceeded the highest standards demanded within the industry.

WHY DO TPMA CERTIFICATIONS MATTER?

Adopting TPMA standards is essential to meet industry trends and leading industry best practices to meet user needs, enhance instructor development and ultimately leads to a happy customer experience.

LPI ensures the quality of the instructors’ training delivery is maintained and meets the highest quality standards, provides expert feedback on their performance and promotes the development of their facilitator skills.

Visit us at learning.motorolasolutions.com to register for our training courses.

ACHIEVING OPTIMAL PERFORMANCE MATTERS TO US

• We focus on the needs of the learner, not the trainer
• The personalized approach and structured consistency of standardized-requirements help win business

“The instructor did an outstanding job. Truly a professional and extremely knowledgeable. Never rushed and always listened. Provided feedback to all questions and allowed students to participate at their own level of expertise and speed.”

“The Instructor was extremely helpful during the training. He has an excellent way of teaching and was very attentive to the students when asked questions. I liked that he went over each and every field of CPS. Excellent Instructor! I would recommend to anyone!”

“The instructor showed outstanding skills to combine theory, practice, actual cases and hands-on training. Great training.”

“Exceptional course, no words to explain the instructor’s commitment and professionalism. Vast experience, humbleness, patience and amazing teaching skills. A different and positive class.”

“Excellent coach. Direct, precise, detailed. Explain everything in the right way. Honestly, the best coach I have ever had. They do not skip anything, explain everything in detail. My knowledge after this training is much better. During the entire training, he was fully committed to us.”

“The best teacher I have ever had in any previous training courses. Very challenging and interactive teaching helping me to understand the system from the bottom to top with a lot of additional slides from the teacher with extremely good and clear explanations in the system networking for deeper understanding.”

“One of the best instructors I had. Speaks clearly, responsive to the students; actions and very good at making the students stay alert and attentive.”

“Amazing training, very glad to join it. Amazing trainer, very vibrant, very knowledgeable trainer. Looking forward to more training with him. Good trainer from a good company.”
EDUCATION PACKAGES

Motorola Solutions Education Packages have been built by our technical education experts, to provide you a simpler way to select the right learning activities from our extensive training portfolio. These packages are all designed considering four vital aspects:

- Your Motorola Solutions Infrastructure & Devices
- The Level of Support provided by Motorola Solutions
- The tasks undertaken by your team, and
- The roles of the professionals in charge of those tasks

Behind these packages there are Education Services professionals whose aim is to fully prepare your team to achieve desired organisational efficiency and outcomes by ensuring that they have the knowledge, skill and competency needed to effectively interact with your Motorola Solutions technology investment.

If you wish to customise your Motorola Solutions training strategy, ask our Professional Education Services team to analyse your specific technical and end user training needs and gaps. Please work with your Motorola Solutions account representative to request this professional service.

Let Motorola Solutions Education Services help you ensure that your organisation provides effortless and reliable communications, and keep your lifeline stronger than ever!

### DIMETRA INFRASTRUCTURE EDUCATION PACKAGES

**COMPLEMENT EDUCATION PACKAGE**
Prepare your team to operate your DIMETRA Solution, achieving optimal organisational efficiency.

**SUPPLEMENT EDUCATION PACKAGE**
Prepare your team to operate and administer your DIMETRA Solution, achieving optimal organisational efficiency.

**SUPPORT EDUCATION PACKAGE**
Prepare your team to operate, administer, and maintain your DIMETRA Solution, achieving optimal organisational efficiency.

#### TOPICS

**COMPLEMENT EDUCATION PACKAGE**

**SUPPLEMENT EDUCATION PACKAGE**

**SUPPORT EDUCATION PACKAGE**
System Overview, Network Management, Consoles, Base Stations, Fleetmapping, Dispatch End User Best Practices, Device End User Packages

Talk with your Motorola Solutions contact for a quote, or email us at training.emea@motorolasolutions.com for more information on how to sign your team up for one of our Education Services Packages.
SAMPLE PACKAGE

This Education Package aligns with the Infrastructure ADVANCED Services Package

- DIMETRA SYSTEM OVERVIEW
- MYVIEW PORTAL OVERVIEW
- DIMETRA SYSTEM FLEETMAPPING
- DIMETRA CONFIGURATION AND ADMINISTRATION
- DIMETRA FAULT MANAGEMENT
- LIFECYCLE MANAGEMENT
- CONSOLE ADMINISTRATOR & DISPATCH END USER TRAINING
- RADIO END USER TRAIN THE TRAINER
- WAVE™ ADMINISTRATION & END USER
- IMW OPERATIONS AND ADMINISTRATION
- DIMETRA SECURE COMMUNICATIONS
- DIMETRA PERFORMANCE MANAGEMENT
- EXECUTIVE OVERVIEW

Legend:
- Foundation
- Administration
- Maintenance
- Device & Console Best Practices
- Optional

Talk with your Motorola Solutions contact for a quote, or email us at training.emea@motorolasolutions.com for more information on how to sign your team up for one of our Education Services Packages.
HELPFUL INFORMATION

HOW TO MAKE PAYMENTS WHEN ENROLLING IN A COURSE

If prepayment is required to secure your registration, it must be received by Motorola Solutions 30 days prior to your attendance. Contact the help desk above for assistance with payments and P.O. specifications. All pricing listed is US dollars.

FOR QUESTIONS AND ASSISTANCE

Call the Education Help Desk Monday – Friday, 9:00 a.m. – 5:30 p.m. Central European Time or email us at: training.emea@motorolasolutions.com

CONTACT MOTOROLA SOLUTIONS EUROPE, MIDDLE EAST AND AFRICA

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<tr>
<td>Austria [German]</td>
<td>0800 281 195</td>
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<tr>
<td>Denmark [English]</td>
<td>80 253 546</td>
</tr>
<tr>
<td>France [French]</td>
<td>0800 914 532 (+33 176 775 609)</td>
</tr>
<tr>
<td>Germany [German]</td>
<td>0800 724 6872 (+49 692 222 1568)</td>
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<tr>
<td>Israel [Hebrew]</td>
<td>180 931 5818</td>
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<td>Italy [Italian]</td>
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<td>United Arab Emirates [English]</td>
<td>8000 3570 4387</td>
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<td>United Kingdom [English]</td>
<td>0800 731 3496 (+44 207 019 0461)</td>
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OPERATOR TRAINING

THE SUCCESSFUL IMPLEMENTATION OF YOUR COMMUNICATIONS SYSTEM DEPENDS ON ITS CONFIDENT USERS.

Users of your mobile and portable radios require training on their units to understand its basic operation, features and functions.

Dispatchers of your consoles require training to understand basic operation, features and functions; management personnel require training on the Motorola Solutions applications.
**TRAIN THE TRAINER**

With this option, Motorola Solutions trains people you have identified as qualified instructors so that they in turn can train each individual user in your organisation. These classes are delivered on site using your equipment. The interactive End-user toolkit (iEUTK) and/or tailored end user materials can be utilised.

**AUDIENCE**
This course is geared for customers who have an experienced, dedicated training staff in their organisation. This course concentrates on specific product features and how it relates to the training process.

**COURSE OVERVIEW**
This course provides the customer’s identified training personnel knowledge and practice applying training techniques that will enable them to successfully train their students. Trainers will use simulation, facilitation and hands-on activities to facilitate learning events supported by tailored training materials and job aides. Students will become proficient in discussing common tasks associated with the operation of the customer’s radios and consoles as identified by the customer’s needs analysis.

Note: This course is presented as customer specific and will cover pertinent information on customer equipment.

**REQUISITE KNOWLEDGE**
Previous training experience and radio system knowledge is a must.

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**OPERATOR TRAINING**

With this option, the users within your organisation are trained by a Motorola Solutions instructor. These classes are typically done on site using your equipment. The interactive End-user toolkit (iEUTK) and/or tailored end user materials support this training option.

**CONSOLES TRAINING**
These courses provide operators and supervisors with an introduction to the basic operation, administration and feature functionality of the Console Systems. Through facilitation and hands-on practice, users learn to perform tasks that are associated with their organisation’s particular system.

- Overview of console configuration
- Console dispatcher and supervisor operation
- Alias Management
- Messaging

**SUBSCRIBER TRAINING**
These courses provide radio users with an introduction to their radios, a review of their radio’s basic functionality by means of job aides tailored to exactly how they use their radios. Through facilitation and hands-on practice, users learn to perform common tasks associated with their radio configuration.

- Overview of radio configuration
- General radio operations

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**COURSES FOR CONSOLE PRODUCTS**

- MCC 7000 Series Dispatch Console Operator Training
- MCD 5000 Operator Training

**COURSES FOR MOBILES & PORTABLES**

- MTP/MTM Series
- APX™ Series
- MOTOTRBO™ Series

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**TO REQUEST FIELD TRAINING, PLEASE CONTACT YOUR ACCOUNT MANAGER.**

Note: The interactive End-user toolkit (iEUTK) is not sold as a standalone product but included with our instructor-led, Train The Trainer or Operator Training.
# Foundational Courses

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RF FUNDAMENTALS

RF BASICS / RADIO SYSTEM BASICS

BASIC RF
RDS0002
2 HRS

BASIC RADIO
RDS0004
4 HRS

COMMUNICATION SYSTEMS CONCEPTS
NST021
5 DAYS

CURRICULUM COMPLETE
PARTICIPANT HAS RF KNOWLEDGE REQUIRED FOR ADVANCING TO MORE COMPLEX TECHNICAL TRAINING COURSES.
IP/NETWORKING FUNDAMENTALS

**BASIC NETWORKING**
- RDS003
- 1 HR

**NETWORKING ESSENTIALS IN MOTOROLA SOLUTIONS COMMUNICATIONS SYSTEM**
- NST762
- 5 DAYS

**DIMETRA SYSTEM**
- DIMETRA APPLIED NETWORKING
  - DMT1108
  - 5 DAYS

**MOTOTRBO™ SYSTEM**
- MOTOTRBO™ SYSTEMS APPLIED NETWORKING
  - PCT2007
  - 4 DAYS

**ASTRO® 25 SYSTEM**
- ASTRO® 25 SYSTEMS APPLIED NETWORKING
  - NWT003
  - 5 DAYS

**CURRICULUM COMPLETE**
PARTICIPANT HAS IP PROTOCOLS AND NETWORKING SKILLS TO USE MOTOROLA SOLUTIONS SYSTEMS REQUIRING ADVANCED TECHNICAL TRAINING.

**Click here to go to page 23 for more details on DIMETRA**

**Click here to go to page 46 for more details on MOTOTRBO™**

**Click here to go to page 51 for more details on ASTRO® 25**
COURSE OVERVIEW
This course emphasizes the concepts behind RF systems theory and operation. Topics include basic radio transmitters and receivers, RF propagation, modulation, antenna systems, transmission lines and data-communications.

TARGET AUDIENCE
Technical staff who need to understand communication systems concepts.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe electrical principles, including direct and alternating current.
• Describe the basic structure of radio transmitters and receivers.
• Describe the operation of the antenna system.
• Identify different types of transmission media.
• Describe RF propagation and understand system gains in a link budget.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
This course delivers a basic understanding of RF.

TARGET AUDIENCE
Technical staff that requires to acquire the fundamentals of RF.

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Describe electrical principles including Direct and Alternating current.
• Describe the basic structure of radio transmitters and receivers.
• Describe transmission lines.
• Describe the construction and operation of antennas.
• Describe RF propagation.
• Describe digital communication techniques

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
The purpose of this course is to provide the student with the basic, foundational land mobile two-way radio knowledge required when working with Motorola Solutions. This course is ideal for all people who sell or service land mobile two-way radios and it was especially designed to meet the needs of the MR Channel and Motorola Solutions employees.

TARGET AUDIENCE
Individuals who need a foundational overview of two-way radios.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Define what a two-way radio is.
• Describe two-way radio components.
• Describe communication types.
• List and describe ways of expanding coverage.
• Describe analogue and digital solutions.
• Describe how transmit and receive processes work in conventional and trunked two-way radio.
• Define system scalability.
• Identify the considerations to implementing a two-way radio.
• List the characteristics of single-site, single-zone and multi-zone systems.
• Explain the concept of two-way radio security.
• Describe the open standards for the following technologies: APCO P25, TETRA and DMR.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• RDS0002 Basic RF

PREREQUISITES
None
COURSE OVERVIEW
This course provides a detailed description of the fundamentals of system networking. Topics include the OSI seven layer model, bridges and switches, IP and routing, applications and security.

TARGET AUDIENCE
Engineers who need to understand the essentials of system networking.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Identify the elements and interconnectivity of a basic network
- Define the OSI and TCP/IP Models
- Define the advantages of different Network Layout Options
- List the Physical and Data-Link Layers of the OSI and TCP/IP Models
- Define the Network and Transport Layers of the OSI and TCP/IP Models
- Identify the Service Layers within the OSI and TCP/IP Model
- Define the concept of Network Security.
- Identify standards organisations

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

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COURSE OVERVIEW
This course emphasizes the concepts behind RF Systems theory and operation. Topics include basic radio transmitters and receivers, RF propagation, modulation, antenna systems, transmission lines and data-communications.

TARGET AUDIENCE
Technical staff, who need to understand Communication Systems Concepts including basic radio, RF propagation, modulation, antenna systems, transmission lines and data-communications.

COURSE OBJECTIVES
By the end of the course, you will be able to:
- Describe basic circuit-related phenomena and elements
- Describe the filtering process and types of RF filters
- Describe and compare digital modulation schemes
- List common frequency spectrum bands and describe their common uses
- Describe the transmission line theory
- Provide the rules for cable selection, routing and installation
- List advanced RF hardware filters, and provide their descriptions
- Discuss RF performance issues
- List and describe transmitter performance parameters
- List and describe receiver performance parameters
- List and describe common test equipment
- Describe the RF troubleshooting process

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- RDS0002 RF Basics

PREREQUISITES
None

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COURSE OVERVIEW
This course emphasises the concepts behind RF Systems theory and operation. Major topics covered include:
- RF System Operation, including talkaroud, repeater operation, and types of signalling used in RF Systems
- A basic walkthrough of building a communication system from Simplex, to Half Duplex, Voting Systems, and Simulcast is done, emphasizing the improvements in communication obtained with each step.
- Trunking Operation, including Smartzone operation
- Types of modulation used in RF System operation, including ASTRO®
- Radio frequency path including the antenna and transmission line
- Decibels and their uses on-the-job
- RF Propagation/RF Interference
- Basic Troubleshooting practices from the system perspective

TARGET AUDIENCE
Individuals who are interested in the operational concepts driving modern communication systems.

COURSE OBJECTIVES
Upon completing this course, the student will be able to:
- Define terms commonly used in two-way communication systems
- Effectively use two-way radio communication systems knowledge to troubleshoot typical two-way communication radio systems
- Develop requirements for a two-way radio system by establishing programming and protocol requirements as requested
- Improve skills in the interpretation of typical two-way radio checks of the receiver, transmitter and the antenna system to troubleshoot a two-way radio communication system
- Use decibels to interpret the radio frequency path and antenna system to describe expected radio communication system performance and troubleshooting

REQUISITE KNOWLEDGE
- Knowledge of basic electronics
- Experience using standard communication test equipment

PREREQUISITES
None
COURSE OVERVIEW
The Networking Essentials in Motorola Solutions Communications Equipment course provides the technician with the essential elements of networking required for the installation and maintenance of most Motorola Solutions communications systems. The course includes ample hands-on and basic troubleshooting on network elements.

TARGET AUDIENCE
System Technicians

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Recall basic network terminology
- Compare basic configuration types, both logical and physical
- Describe the basic OSI (Open System Interconnect) model compared with the TCP/IP model
- Construct a basic LAN with a Windows Server Domain Controller and workstations
- Examine the interaction between the routers through their configurations
- Use common network commands to simulate traffic and validate connectivity and routing

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- An understanding of basic Motorola Communications Systems
- Basic familiarization with computer operating systems
- Completion of Basic Networking course (RDS0003) or equivalent experience

PREREQUISITES
None

COURSE OVERVIEW
The purpose of this course is to present a high level overview of the RF site design and construction process, in line with the guidelines listed in Motorola Solutions’ Standards and Guidelines for Communication Sites (R56) manual.

TARGET AUDIENCE
Technicians who need an introduction to the R56 processes.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe the site design and development tasks needed to meet R56 requirements.
- Describe the building and shelter design and installation tasks needed to meet R56 requirements.
- Identify the proper external and internal grounding tasks needed to meet R56 requirements.
- Identify transient voltage surge suppression needs that meet R56 requirements.
- Minimise the impact of RF Site Interference, in line with R56 requirements.
- Identify the equipment installation tasks needed to meet R56 requirements.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
The Site Installation Practices Workshop (R56) course is designed to present the standards and guidelines for installing a Motorola Solutions communication system. Participants will understand how a properly installed system can help to ensure a safe and efficient communications system, reducing system down time.

TARGET AUDIENCE
Technicians who need an introduction to the R56 processes.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- List the purposes of grounding and evaluate their importance in terms of personal safety and effective system installation and protection
- Apply principles of basic electronics to the installation standards found in the R56 manual
- Determine how an effectively installed ground system provides protection for a communication system from a lightning strike or electrical anomalies
- List the minimum requirements and specifications for the external and internal ground system
- List the minimum requirements and specifications for installation equipment, cables and documentation for a reliable communication system installation
- Investigate sources for possible solutions to various installation scenarios

REQUISITE KNOWLEDGE
Graduate of a basic electronics course

PREREQUISITES
None
SERVER AND VIRTUALIZATION FOUNDATION
SRV1010

4 DAYS

COURSE OVERVIEW
This course will prepare students to install a server and understand the basics of supported virtualization application. The course covers BIOS configuration, installing supported virtualization applications, installing a client and server OS and verifying operations. The course includes hands on lab exercises.

TARGET AUDIENCE
Technical Support Staff who need to understand virtual servers or install servers that utilise Virtual Machines (VM).

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Configure BIOS parameters for server hardware
• Demonstrate basic knowledge of supported virtualization application, including capacity
• Install supported virtualization application on a server platform
• Configure supported virtualization application parameters of supported server hardware
• Install a Client OS and Server OS in a virtual environment
• Verify Server/Client operations in a virtual environment

REQUISITE KNOWLEDGE
Comp-TIA Server+ Certification or equivalent

PREREQUISITES
None

DIMETRA APPLIED NETWORKING
DMT1108

5 DAYS

COURSE OVERVIEW
This course provides engineers and technicians with the necessary networking information required for the network components applied in the DIMETRA systems. The course includes overview of the basic networking concepts, network configuration overview of the transport network components and information assurance applied in the DIMETRA systems.

TARGET AUDIENCE
Technical System Managers and Network Technicians

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Define basic IP network hardware and protocols
• Analyse basic IP network connectivity and addressing
• Define DIMETRA Master Site VLAN/VRRP Operation
• Define DIMETRA Network Transport Subsystem
• Review DIMETRA Network Management applications
• Define DIMETRA Information Assurance
• Define DIMETRA Data Subsystem

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

SYSTEM ENGINEERING OVERVIEW
DMT1086

5 DAYS

COURSE OVERVIEW
This course delivers a basic understanding of System Engineering.

TARGET AUDIENCE
Technical staff that require a System Engineering Overview.

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Describe electrical principles including AC and DC.
• Describe radio principles.
• Describe Impedance in transmission lines.
• Describe the purposes and operation of an antenna system.
• Describe RF propagation.
• Describe Tetra Air Interface principles.
• Describe RF Site Techniques and Planning.
• Describe DIMETRA Call Processing and Networking.
• Describe DIMETRA Fleetmapping concept.
• Describe system optimization, the role of NM applications and RF tools used in the optimization process.

REQUISITE KNOWLEDGE
Knowledge of basic electronic & electrical, radio frequency and computer networking is an advantage.

PREREQUISITES
None
COURSE OVERVIEW
This course includes a system review, basic fleetmapping principles, radio user configuration, dispatch user configuration, mobile radio configuration, text broadcast fleetmapping and system configuration.

TARGET AUDIENCE
Technical staff that require an overview of fleetmapping.

COURSE OBJECTIVES
On completion of this course delegates will be able to:
- Perform the basic planning requirements and complete a simple fleetmap information template
- Write a simple fleetmap based on sample operational requirement information

REQUISITE KNOWLEDGE
Overview of the features and functions of a DIMETRA IP system

PREREQUISITES
None

COURSE OVERVIEW
This course will provide an introduction to TETRA as a precursor to proprietary TETRA and DIMETRA solutions.

TARGET AUDIENCE
Personnel requiring a generic introduction to TETRA.

COURSE OBJECTIVES
By the end of this course, the learner will be able to:
- Describe the history and function of the TETRA Standard and ETSI Role in the European Standard
- Describe the purpose and function of the various TETRA interfaces
- Describe the Benefits of the TETRA services provided
- List the benefits provided by the TETRA system
- Describe the TETRA specifications for, system parameters, protocol specifications and the TETRA spectrum
- Describe the various security safeguards in place within the TETRA standard for Radio communication systems
- Describe the functions and purpose of TETRA

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
The MOTOTRBO™ Systems Applied Networking provides technicians with the necessary information required for understanding the typical networking requirements for implementing a variety of MOTOTRBO™ solutions. The course includes familiarisation/review of basic networking concepts and MOTOTRBO™-specific networking requirements. This course will focus on specific configurations for IP Site Connect, Linked Capacity Plus, and Connect Plus trunking systems.

TARGET AUDIENCE
Technical System Managers and Technicians

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Recall Basic Networking Concepts
- Identify recommended network components for MOTOTRBO™ systems
- Define LAN/WAN topologies for MOTOTRBO™ systems
- Perform backup, restore and recovery of recommended network components
- Identify network security concepts for MOTOTRBO™ systems

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- NST762 Networking Essentials in Motorola Solutions Communications Equipment

PREREQUISITES
None
COURSE OVERVIEW
The ASTRO® 25 Systems Applied Networking course provides technicians with the necessary networking information required for understanding the network components installed in modern Motorola communications systems. The course includes familiarisation with basic networking concepts, and the networking components deployed in the ASTRO® 25 System.

TARGET AUDIENCE
Technical System Managers and Technicians

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Define basic IP network concepts, hardware and protocols.
• Describe the LAN topologies for the ASTRO® 25 system.
• Describe the WAN topologies for the ASTRO® 25 system.
• Identify the current and legacy network components such as switches and routers.
• Perform backup, restore, and recovery procedures of routers and LAN switches.
• Use basic IP network connectivity and addressing.
• Define ASTRO® 25 Master Site VLAN/VRRP operation.
• Define ASTRO® 25 Network Transport Subsystem.
• Describe the various ASTRO® 25 Network Management applications.
• Identify network security components and concepts in an ASTRO® 25 system.
• Diagram SNMP deployment throughout the system.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• NST782 Networking Essentials in Motorola Communications Systems

PREREQUISITES
None

COURSE OVERVIEW
This seven-module course is designed to bring Technicians from different technical backgrounds and experience levels to a common starting point for the ASTRO® 25 curriculum. This course provides seven modules from the basic concepts of radio communication systems and computer networking features, through the evolution that led to the ASTRO® 25 trunking system’s architecture.

TARGET AUDIENCE
This course is intended for System Technicians, and other ASTRO® 25 system users who are new to trunked radio systems. Also those with experience in non-IP-based radio systems like SmartNet and SmartZone.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Explain the different radio system concepts as applied to conventional and trunked systems
• Compare analogue radio communication signalling to ASTRO® 25 radio communications signalling
• Identify different communication concepts using representative block diagrams of the respective systems
• Compare radio system communication concepts using representative block diagrams of the respective systems
• Compare how voice and data information flows through different radio communication system types and how the signalling information controls that flow of information
• Describe the features of each radio communication system in terms of advantages and disadvantages

REQUISITE KNOWLEDGE
None

PREREQUISITES
None
# DIMETRA SYSTEMS COURSES

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DIMETRA SYSTEM TRAINING IS ALSO AVAILABLE IN PREVIOUS RELEASES; PLEASE CONTACT MOTOROLA SOLUTIONS FOR MORE INFORMATION.
DIMETRA MSO SYSTEM ENGINEER

**DIMETRA X CORE D9.1 SYSTEM OVERVIEW**

- 3 DAYS
- DMT9100

**DIMETRA X CORE D9.1 CONFIGURATION AND ADMINISTRATION WORKSHOP**

- 4 DAYS
- DMT9101

**DIMETRA X CORE D9.1 FAULT MANAGEMENT WORKSHOP**

- 3 DAYS
- DMT9102

**DIMETRA X CORE D9.1 TROUBLESHOOTING AND MAINTENANCE WORKSHOP**

- 5 DAYS
- DMT9104

**DIMETRA X CORE D9.1 PERFORMANCE MANAGEMENT WORKSHOP**

- 3 DAYS
- DMT9103

**OPTIONAL TRAINING**

**SECURE COMMUNICATIONS**

**DIMETRA X CORE SECURE COMMUNICATIONS WORKSHOP**

- 3 DAYS
- DMT1094

**ENCRYPTION, AUTHENTICATION & PROVISIONING**

**DIMETRA X CORE D9.1 AIR INTERFACE ENCRYPTION, AUTHENTICATION, AND PROVISIONING**

- 3 DAYS
- DMT9105
DIMETRA FIELD ENGINEER

- **DIMETRA X CORE D9.1 SYSTEM OVERVIEW**
  - 3 DAYS
  - DMT9100

- **DIMETRA X CORE D9.1 AIR INTERFACE ENCRYPTION, AUTHENTICATION, AND PROVISIONING**
  - 3 DAYS
  - DMT9105

- **MTS 1 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE WORKSHOP**
  - 3 DAYS
  - TBTS04

- **MTS 2/MTS 4 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE WORKSHOP**
  - 4 DAYS
  - TBTS01

For information on prerequisites and to register for courses visit the LXP at: LEARNING.MOTOROLASOLUTIONS.COM
DIMETRA SYSTEM ADMINISTRATOR

DIMETRA X CORE D9.1 SYSTEM OVERVIEW
3 DAYS DMT9100

DIMETRA X CORE D9.1 CONFIGURATION AND
ADMINISTRATION WORKSHOP
4 DAYS DMT9101

DIMETRA X CORE D9.1 FAULT MANAGEMENT
WORKSHOP
3 DAYS DMT9102

DIMETRA X CORE D9.1 PERFORMANCE
MANAGEMENT WORKSHOP
3 DAYS DMT9103

OPTIONAL TRAINING

DIMETRA X CORE SECURE
COMMUNICATIONS WORKSHOP
3 DAYS DMT1094

DIMETRA X CORE D9.1 AIR
INTERFACE ENCRYPTION,
AUTHENTICATION, AND
PROVISIONING
3 DAYS DMT9105
DIMETRA DISPATCH ADMINISTRATOR

- **DIMETRA X CORE D9.1 SYSTEM OVERVIEW**
  - 3 DAYS
  - DMT9100

- **DIMETRA X CORE D9.1 MCC 7500 OPERATOR WORKSHOP**
  - 1 DAY
  - DMT9112

- **DIMETRA X CORE D9.1 MCC 7500 ADMIN WORKSHOP**
  - 1 DAY
  - DMT9111

- **DIMETRA X CORE D9.1 MCC 7500 INSTALL, CONFIG, TROUBLESHOOTING, AND MAINTENANCE**
  - 3 DAYS
  - DMT9113

**OPTIONAL TRAINING**

- **DIMETRA X CORE SECURE COMMUNICATIONS WORKSHOP**
  - 3 DAYS
  - DMT1094

- **DIMETRA X CORE D9.1 AIR INTERFACE ENCRYPTION, AUTHENTICATION, AND PROVISIONING**
  - 3 DAYS
  - DMT9105
DIMETRA DISPATCH OPERATOR

DIMETRA X CORE D9.1 SYSTEM OVERVIEW
3 DAYS
DMT9100

DIMETRA X CORE D9.1 MCC 7500 OPERATOR WORKSHOP
1 DAY
DMT9112
DIMETRA X CORE D9.1 SYSTEM OVERVIEW
DMT9100

DIMETRA IP FLEETMAPPING WORKSHOP
TGTC04

TETRA TERMINAL PROGRAMMING
TTER01PLUS

INTEGRATED TERMINAL MANAGEMENT (REMOTE PROGRAMMING)
DMT1050

OPTIONAL TRAINING

DIMETRA X CORE D9.1 TROUBLESHOOTING AND MAINTENANCE WORKSHOP
DMT9104

DIMETRA X CORE D9.1 CONFIGURATION AND ADMINISTRATION WORKSHOP
DMT9101

DIMETRA X CORE D9.1 AIR INTERFACE ENCRYPTION, AUTHENTICATION, AND PROVISIONING
DMT9105
COURSE OVERVIEW
This course provides an overview of the features and functions of a DIMETRA X Core system. The course includes descriptions of the various call types and system hardware functionality. Applications overview describes the purpose of the software used to manage and administer the system.

TARGET AUDIENCE
All staff who require an overview of the DIMETRA X Core system functionality and features.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Describe Basic Radio concepts.
• Describe DIMETRA X Core benefits.
• Describe DIMETRA X Core features and their benefits.
• Describe DIMETRA X Core Single Zone system components and their functionality.
• Describe the purpose and function of DIMETRA X Core Network Management applications.
• Describe DIMETRA X Core Multi-Zone system components and their functionality.
• Describe DIMETRA X Core Inter-System Interface functionality.
• Describe how different types of calls are processed through a DIMETRA X Core system.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
During this workshop delegates will use configuration and administration applications to manage a DIMETRA X Core system as they would on a daily basis. The delegates will perform configuration set up procedures for the more popular features and functions as well as common administration tasks, based on real business scenarios.

TARGET AUDIENCE
System managers responsible for configuration and administration of a DIMETRA X Core system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Define the role of Fault Management within Network Management.
• Define the role of each of the applications used within Fault Management.
• Utilise the Unified Event Manger (UEM) application to assist Fault Management within the DIMETRA X Core system.
• Use the Transport Network Device Manager (TNDM) to assist Fault Management.
• Use the Zone Configuration Manager application to perform diagnostic functions within the DIMETRA X Core system.
• Use the Zone Watch application to assist Fault Management within the DIMETRA X Core system.
• Identify file backup procedures.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview

PREREQUISITES
None

COURSE OVERVIEW
The workshop will allow delegates to use applications to identify faults on systems components using a live DIMETRA X Core system and within the context of business scenarios.

TARGET AUDIENCE
System operations staff and field engineers who perform fault management tasks on a DIMETRA X Core system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Define the role of Fault Management within Network Management.
• Define the role of each of the applications used within Fault Management.
• Utilise the Unified Event Manger (UEM) application to assist Fault Management within the DIMETRA X Core system.
• Use the Transport Network Device Manager (TNDM) to assist Fault Management.
• Use the Zone Configuration Manager application to perform diagnostic functions within the DIMETRA X Core system.
• Use the Zone Watch application to assist Fault Management within the DIMETRA X Core system.
• Identify file backup procedures.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview

PREREQUISITES
None
COURSE OVERVIEW
During this workshop delegates will use applications on a live DIMETRA X Core system using business scenarios. Using these applications delegates will learn how to interpret system and user performance based on call traffic and device statistics.

TARGET AUDIENCE
System operators and managers who monitor and collect system statistics on a DIMETRA X Core system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Describe the factors that affect system performance.
• Describe the Performance Management Analysis process.
• List the Performance Management applications used in a DIMETRA X Core system.
• Describe the purpose of system reports, system usage applications and device statistics in Performance Management activities.
• Access and navigate DIMETRA X Core Performance Management applications to monitor system activity and generate system reports.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview

PREREQUISITES
None

DIMETRA X CORE D9.1 PERFORMANCE MANAGEMENT WORKSHOP
3 DAYS DMT9103

DIMETRA X CORE D9.1 TROUBLESHOOTING AND MAINTENANCE WORKSHOP
5 DAYS DMT9104

DIMETRA X CORE D9.1 AIR INTERFACE ENCRYPTION, AUTHENTICATION, AND PROVISIONING
3 DAYS DMT9105
DIMETRA X CORE SECURE COMMUNICATIONS WORKSHOP
DMT1094
3 DAYS

COURSE OVERVIEW
During the workshop delegates will perform key management, administrative and maintenance tasks on a live DIMETRA X Core system. Using real business scenarios this workshop will allow delegates to perform key management, key transference, maintenance, and troubleshooting procedures on the Key Management Facility (KMF) server and client.

TARGET AUDIENCE
System operators, managers and field technicians responsible for the management and maintenance of secure end-to-end communications in a DIMETRA X Core system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Describe the theory of DIMETRA secure communications operation.
• Carry out KMF client administration tasks.
• Utilize the E2E KVL.
• Perform KMF OTAK/OTEK management activities and procedures.
• Setup an MCC 7500S secure console.
• Administer the KMF server.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview

PREREQUISITES
None

DIMETRA X CORE D9.1 NETWORK SECURITY
DMT9106
3 DAYS

COURSE OVERVIEW
The workshop is designed to give an overview of the elements of the DIMETRA X Core network security solution. The generic threat to network security will be discussed. During this workshop, delegates will perform basic procedures using network security software elements.

TARGET AUDIENCE
System Operators, Managers, and Field Technicians responsible for the management and maintenance of Network Security in a DIMETRA X Core system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Describe the generic threats to network security.
• Describe the DIMETRA X Core antivirus protection.
• Describe the DIMETRA X Core authentication management.
• Describe the perimeter protection available with the DIMETRA X Core system.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview

PREREQUISITES
None

DIMETRA X CORE D9.1 DISPATCH COMMUNICATIONS SERVER WORKSHOP
DMT9107
3 DAYS

COURSE OVERVIEW
This workshop provides an overview of the DIMETRA Dispatch Communications Server as well as hands on activities in terms of configuration, administration, troubleshooting and maintenance aspects of the DCS server and DCS clients.

TARGET AUDIENCE
Field and system engineers who support the DCS solution.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe DCS functionality, topology, components and client connectivity.
• Describe DCS solution system limits, throughput and performance.
• Describe how DCS solution is incorporated in DIMETRA call processing.
• Perform configuration of DCS solution components.
• Administer and maintain the DCS solution.
• Perform diagnostic and troubleshooting activities for the DCS solution.
• Perform restoration procedures for DCS solution components in the event of failure.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview
• DMT9101 DIMETRA X Core D9.1 Configuration and Administration Workshop
COURSE OVERVIEW
During this workshop delegates will perform complete hardware, software and database restorations for DIMETRA X Core D9.1. The tasks will be carried out in a lab environment through hands-on activities according to the procedures and guidelines from system documentation.

TARGET AUDIENCE
Staff who troubleshoots and maintains a DIMETRA X Core D9.1 system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Restore a DIMETRA X Core D9.1 System.
• Perform a complete system backup prior to re-installation.
• Complete a system power down.
• Reinstall system hardware/software.
• Restore a system database and reconfigure the system back to original operating conditions.
• Perform a post-restoration check and test.

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience may be required, depending on the system:
• DMT9105 DIMETRA X Core D9.1 Air Interface Encryption, Authentication, and Provisioning
• DMT9106 DIMETRA X Core D9.1 Network Security

PREREQUISITES
• DMT9100 DIMETRA X Core D9.1 System Overview
• DMT9101 DIMETRA X Core D9.1 Configuration and Administration Workshop
• DMT9102 DIMETRA X Core D9.1 Fault Management Workshop
• DMT9104 DIMETRA X Core D9.1 Troubleshooting and Maintenance Workshop

COURSE OVERVIEW
This course will give the opportunity to install and configure a DIMETRA Express system from start to finish. Learners will be able to carry out all of the necessary configuration activities required when commissioning a DIMETRA Express radio network.

TARGET AUDIENCE
Anyone who has responsibility for setting up or managing DIMETRA Express system.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe DIMETRA Express main features and functionality.
• Install DIMETRA Express system.
• Setup and configure additional sites to the DIMETRA Express system.
• Configure a DIMETRA Express system using DIMETRA Express Network Manager application and procedures.
• Describe/Perform TETRA radio authentication process/provisioning in the DIMETRA Express system.
• Perform authentication application administration and management tasks.

REQUISITE KNOWLEDGE
A basic understanding of Radio Frequency (RF) technology and Internet Protocol (IP) fundamentals.

PREREQUISITES
None
## Console Courses

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COURSE OVERVIEW
This course provides students with an introduction to the Elite Admin application. It enables system administrators to use the software to set up configurations for the Elite Dispatch desktops that organize resources to meet specific user needs. Through facilitation and hands-on activities, the user learns how the configurations created in the Elite Admin can be saved and then distributed among the Elite Dispatch desktops.

TARGET AUDIENCE
System Administrators for Dispatch Console Operators.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Identify the hardware components that make up the dispatcher position.
• Describe the purpose of the Elite Dispatch application.
• Identify elements that make up the menu and toolbar structure within the Elite Dispatch software.
• Perform dispatcher operations:
  • Communicate with radios: transmit and receive calls within group and individual communications categories.
  • Perform advanced signaling features, i.e. Quicklists, Emergency call and alarms, Ambience Listening calls.
  • Perform basic procedures within screen configurations, i.e. expanding and compressing resources, adjusting volume.
  • Perform basic procedures within resource groups, i.e. multiselect or patch group, APB and patch transmit.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9112 DIMETRA X Core D9.1 MCC 7500 Operator Workshop

PREREQUISITES
None

COURSE OVERVIEW
During this workshop students will perform installation, configuration and troubleshooting procedures relating to the MCC 7500C dispatch console on a live DIMETRA X Core D9.1 system.

TARGET AUDIENCE
Control Room Managers, System Engineers and Network Administrators responsible for the installation, configuration and maintenance of control rooms containing MCC 7500C dispatch consoles in a DIMETRA X Core system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Install and configure the hardware and software components of the MCC 7500 Dispatch Console subsystem.
• Troubleshoot installation and configuration problems for the MCC 7500 Dispatch Console.

REQUISITE KNOWLEDGE
Completion of the following course or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview

PREREQUISITES
None
COURSE OVERVIEW
This course will give an overview of the architecture, features, operations, and administration tasks required to maintain the DataVoice Logging solution within a DIMETRA system.

TARGET AUDIENCE
System Administrators of the Control Room, which includes MCC 7500 dispatch consoles and DataVoice equipment.

COURSE OBJECTIVES
By the end of the course you will be able to:
• Describe the components of DataVoice Logging Solution.
• Describe the Features and Functions of the DataVoice Logging system.
• State the steps required to perform DataVoice Libra Software Installation.
• Describe the Configuration elements need to operate the DataVoice Logger.
• Describe the backup steps required to restore the DataVoice logging configuration and database.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• DMT9100 DIMETRA X Core D9.1 System Overview
• DMT9101 DIMETRA X Core D9.1 Configuration and Administration Workshop
• DMT9111 DIMETRA X Core D9.1 MCC 7500 Admin Workshop
• DMT9113 DIMETRA X Core D9.1 MCC 7500 Install, Config, Troubleshooting, and Maintenance

PREREQUISITES
None
COURSE OVERVIEW
This workshop covers the tasks and knowledge to implement a NICE logging solution in an ASTRO® 25 system. Learning activities in this course focus on both initial installation and configuration, and operation and troubleshooting the components after installation. Participants will be provided with an opportunity to demonstrate, with available lab equipment, tasks required to install and maintain the related subsystem components.

TARGET AUDIENCE
All staff who would be required to implement, maintain, or diagnose components related to the NICE logging solution integrated with an ASTRO® 25 system.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe the functionality of the different components and applications required for NICE Radio logging
• Install and configure required components into an ASTRO® 25 system
• Perform administrative tasks necessary for operation of the logging solution
• Use system tools and applications to identify potential causes of failure of the logging solution

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• AST1038 ASTRO® 25 IV&D System Overview
• CON012 MCC7000 Series Dispatch Console Workshop

PREREQUISITES
None

COURSE OVERVIEW
This workshop supports those that install, configure, or support the MCD 5000 Deskset. This three day training course will cover installation procedures for the MCD5000 Deskset, Radio Gateway Unit (RGU), and connectivity to different station types. Configuration and programming of the MCD5000 and its supporting equipment will be covered through discussion and hands-on lab activities. Troubleshooting and maintenance techniques will be addressed to the Motorola Solutions recommended service level.

TARGET AUDIENCE
MCD 5000 Technicians

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Identify the MCD 5000 System components and functions.
• Install MCD 5000 Deskset.
• Install Radio Gateway Units.
• Configure MCD 5000 subcomponents.
• Troubleshoot the MCD 5000 System to Motorola Solutions recommended service levels.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• NST021 Communication Systems Concepts

PREREQUISITES
None
BASE STATIONS COURSES

MTS 2/MTS 4 INSTALLATION, CONFIGURATION, TROUBLESHOOTING & MAINTENANCE WORKSHOP (TBTS01) 39

MTS 1 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE (TBTS04) 39
RADIO SOLUTIONS BASE STATIONS

For general information contact the Europe, Middle East and Africa Education Services Help Desk at:
training.emea@motorolasolutions.com

RADIO SOLUTIONS BASE STATIONS

For information on prerequisites and to register for courses visit the LXP at:
LEARNING.MOTOROLASOLUTIONS.COM

MTS 2/MTS 4 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE WORKSHOP
TBTS01
4 DAYS

MTS 1 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE
TBTS04
3 DAYS

COURSE OVERVIEW
This course includes the theoretical and practical aspects of configuring, maintaining and troubleshooting the MTS base station in a DIMETRA IP system. The course includes the practical use of service software and the man-machine interface. Practical sessions include the removal and replacement of Field Replaceable Units (FRU).

TARGET AUDIENCE
Field Engineers responsible for installing, configuring and maintaining the base station equipment.

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Describe the function of the MTS within a DIMETRA IP system.
• Identify the Field Replaceable Units (FRUs) within the MTS.
• Describe the function of FRUs within the MTS.
• Perform MTS installation procedures.
• Carry out removal and replacement procedures for MTS FRUs.
• Identify FRU part numbers.
• Utilise the Software Download application.
• Perform maintenance and testing procedures using Motorola TETRA BTS Service Software.
• Download a configuration file to the MTS using the BTS Service Software and Software Download Manager applications.
• Perform Ki loading procedures to the MTS.
• Carry out MTS expansion.
• Troubleshoot MTS to FRU level.

REQUISITE KNOWLEDGE
• RF and Field or Bench service background.
• Completion of a DIMETRA System Overview course or equivalent experience is recommended.

PREREQUISITES
None

MTS 1 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE
TBTS04
3 DAYS

COURSE OVERVIEW
This course includes the theoretical and practical aspects of configuring, maintaining and troubleshooting the MTS 1 base station in a DIMETRA IP system. The course includes the practical use of service software and the man-machine commands. Practical sessions include the testing and configuration of the MTS 1.

TARGET AUDIENCE
Field Engineers responsible for installing and configuring and maintaining MTS 1 equipment.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe the function of the MTS 1 within a DIMETRA IP system.
• Identify and describe the function of MTS 1 components.
• Describe MTS 1 installation procedures.
• Execute MMI commands using local and telnet access.
• Perform MTS 1 verification test procedures.
• Download configuration and application files using the BTS Service Software and Software Download Manager application.
• Perform MTS 1 Ki loading procedures.
• Perform MTS 1 troubleshooting using BTS Service Software.

REQUISITE KNOWLEDGE
• RF and Field or Bench service background - recommended

PREREQUISITES
None
## SUBSCRIBER COURSES

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TETRA SUBSCRIBER END-USER OPERATOR COURSES

Click the boxes below to go to the LXP to get additional information and to register for the following subscriber courses. The course description to the right applies to all courses listed below.

**COURSE OVERVIEW**

Our subscriber end-user operator courses will provide the background information and the knowledge required to allow delegates to be fully conversant with the features and functions of their chosen subscriber. It will provide users with an introduction to their subscriber, its operation and builds on theoretical instruction with practical exercises designed to allow delegates to practice and confirm their understanding of all features and functions covered in the course.

**TARGET AUDIENCE**

Radio end-user operators

**COURSE OBJECTIVES**

The goal of End-User Operator courses is to enable the user to identify the features and functions of their chosen subscriber, to make calls and perform basic radio troubleshooting. After completing any of these courses, the student will be able to:

- Identify the location and function of all subscriber keys and controls.
- Describe radio preparation including assembly and battery charging.
- Make all available Trunked Mode and Direct Mode calls.
- List optional features available to the subscriber.
- Perform basic subscriber troubleshooting.

**REQUISITE KNOWLEDGE**

None

**PREREQUISITES**

None
OTHER SUBSCRIBER COURSES

Click the boxes below to go to the LXP to get additional information and to register for the following courses.

- **TETRA TERMINAL PROGRAMMING (CPS PLUS)**
  - Duration: 2 DAYS
  - Code: TTER01PLUS

- **TETRA SUBSCRIBER OPERATOR, PROGRAMMING AND MAINTENANCE**
  - Duration: 1 DAY
  - Code: DMT1107

- **INTEGRATED TERMINAL MANAGEMENT (REMOTE PROGRAMMING)**
  - Duration: 1 DAY
  - Code: DMT1050

- **TRACES WORKSHOP**
  - Duration: 2 DAYS
  - Code: TMSC04

- **ADVISOR TPG2200 TETRA TWO-WAY PAGER END USER OPERATOR**
  - Duration: 0.5 HRS
  - Code: DMT0029
MOTOTRBO™ SUBSCRIBER AND REPEATER TECHNICAL SERVICE ACADEMY

MOTOTRBO™ RADIO MANAGEMENT 2.0 CONFIGURATION MODE

MOTOTRBO™ RADIO MANAGEMENT WORKSHOP

COURSE OVERVIEW
Participants will learn the capabilities, features and functions of the MOTOTRBO™ family of radios and repeaters as well as how to correctly complete performance checks, radio alignments, disassembly/reassembly, maintenance, and troubleshooting. This Academy will also focus on the detailed theory of operation. In addition to lecture, large amounts of hands on, scenario based lab work will be used to reinforce knowledge transfer. This Academy will cover in detail different models within the MOTOTRBO™ family of radios and repeaters.

TARGET AUDIENCE
Radio Technicians

COURSE OBJECTIVES
• Distinguish between the features and specifications of the MOTOTRBO™ portable and mobile radios and repeaters
• Verify the correct operations of the MOTOTRBO™ radios and repeaters by completing Performance Checks and Alignment procedures
• Maintain and troubleshoot MOTOTRBO™ radios and repeaters
• Disassemble and reassemble the radios using the documented procedures

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
• CEDME2000 Introduction to MOTOTRBO™ Systems for Technicians

PREREQUISITES
None

COURSE OVERVIEW
This self-paced course is a basic tutorial of Radio Management (RM) 2.0 Configuration Mode. A set of short videos present installation and deployment of RM components, explain the concepts of sets and configurations, and demonstrate the user how to navigate through RM Client views and functionalities. The course also covers migration from template to configuration mode, backup and restores procedures, as well as user and machine authorization.

TARGET AUDIENCE
Professionals responsible for configuring, deploying, or maintaining MOTOTRBO™ radios and repeaters.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Explain the purpose of that Radio Management Configuration (RM) Mode.
• Explain the concept of sets and configurations.
• Set up Radio Management 2.0 for the first time.
• Name and navigate through major RM Client views.
• Perform basic RM Configuration Client operations: populate and manage radio database, edit sets and configurations, etc.
• Perform Server Utility operations.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

MOTOTRBO™ RADIO MANAGEMENT WORKSHOP

COURSE OVERVIEW
The MOTOTRBO™ Radio Management 2.0 Workshop course provides technicians with the necessary information and practice to use the MOTOTRBO™ Radio Management 2.0 programming tool effectively.

TARGET AUDIENCE
System Managers and Technicians

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Deploy and use RM 2.0 in a variety of real-world scenarios.
• Create and maintain configurations for basic MOTOTRBO™ Configurations
• Utilise Wi-Fi programming within RM 2.0.
• Use the RM Import and Export feature for database population.
• Convert existing radio templates and codeplugs to RM 2.0 Configurations.
• License and activate Radio and Application features.
• Use advanced features such as Data Mining.
• Use RM 2.0 to ease mass-deployments of subscribers.

REQUISITE KNOWLEDGE
• Networking Essentials or Network + Certification.
• A high-level working knowledge of IP networking.

PREREQUISITES
PCT1032 MOTOTRBO™ Radio Management 2.0 Configuration Mode
COURSE OVERVIEW
This course provides communications management personnel and technicians with the knowledge and tools needed to program the radio units in the most efficient way depending on the system, features and options they require. The parameters and exercises shown in the class apply to a wide number of portable and mobile radios, including XTS 5000, XTS 3000, XTS 2500, XTS 1500, XTL 5000, XTL 2500, XTL 1500, MTS 2000, MCS 2000, the SPECTRA family, and the Professional Series.

TARGET AUDIENCE
Radio Technicians, System Managers

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Program the basic parameters of any radio using the Customer Programming Software (CPS)
• Program the specific parameters of any radio related to the system where the user is going to work conventional, single-site trunking, Simulcast, AMSS, SmartZone or ASTRO® 25
• Demonstrate knowledge of the options and features that can be programmed in a radio
• Create templates for subscriber programming in a system
• Create templates for the programming of subscribers in a system.

REQUISITE KNOWLEDGE
Knowledge of the basic features and options of two-way radios and the basic concepts of trunking. For individuals with prior CPS programming experience, a test out is available. Test Out CPS Programming and Template Building (ADT001T)

PREREQUISITES
None

COURSE OVERVIEW
The purpose of this course is to provide the student with an overview of the knowledge and training necessary to program APX™ family of radios in the most efficient way possible.

TARGET AUDIENCE
You should attend this training course if you are radio technician or system manager who need to:
• Perform APX™ radios programming
• Have better understanding of APX™ subscriber operating in Conventional, Single Site trunking, Simulcast, SmartZone or ASTRO® 25 IV&D TDMA and ASTRO® 25 IV&D x2
• Access to programming knowledge of the APX™ CPS navigation, tools, options and features

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Build the APX™ family of programming templates using the APX™ CPS programming Software
• Program the specific parameters related to the various system types in which the subscriber unit will operate: Conventional, Single Site trunking, Simulcast, SmartZone or ASTRO® 25 IV&D TDMA and ASTRO® 25 IV&D x2
• Demonstrate knowledge of the APX™ CPS navigation, tools, options and features that make efficient programming of the radio possible
• Demonstrate a complete understanding of the various APX™ CPS programming efficiency tools, such as: Cloning, drag and drop, Codeplug Comparison tool, radio Flashing, Advance System Key Administrator, Codeplug Merging and many others

REQUISITE KNOWLEDGE
Knowledge of the basic features and options of two-way radios and the basic concepts of trunking.

PREREQUISITES
None

COURSE OVERVIEW
Participants will learn the capabilities, features, and functions of the APX family of radios as well as how to correctly complete performance checks, radio alignments, disassembly/reassembly, maintenance, and troubleshooting. This Academy will also focus on a Level 2 (block-level) theory of operation for the APX family of radios and provide a review of APX CPS and Radio Management programming. In addition to the lecture, large amounts of hands on with scenario-based lab work will be used to reinforce knowledge transfer.

TARGET AUDIENCE
This course is intended for who would like to get familiar with the features, operation principles, troubleshooting steps and disassembly and reassembly of the APX family of radios.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Distinguish between the features and specifications of APX Portable and Mobile radios
• Verify the correct operation of the various radios within the APX family of subscribers by completing Performance Checks and Alignment procedures
• Disassemble and reassemble APX radios using the documented procedures
• Maintain and troubleshoot radios within the APX family of subscribers

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience:
• NST021 Communication Systems Concepts
• APX7001V APX CPS Programming and Template Building Overview

PREREQUISITES
None
APX™ RADIO MANAGEMENT OVERVIEW
AST2003

COURSE OVERVIEW
This course provides an overview of the features and functions of the APX™ series Radio Management software. Participants will learn what the Radio Management software is designed to do, and will also learn how to use it to program large and small groups of subscribers.

TARGET AUDIENCE
Technicians and System Managers needing an understanding of the basics of the Radio Management application as well as database and fleet management.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Identify the solution that Radio Management provides
- Differentiate between All-in-One PC needs and Distributed Use needs regarding Radio Management
- Locate the APX™ Radio Management
- Navigate the APX™ Radio Management screens
- Populate the database
- Schedule a Read job
- Manage multiple APX™ radios simultaneously
- Create, modify, and select programming templates
- Schedule a Write job
- Conduct a search
- Search, sort, and group radios
- Sort and manage information in the Table view
- Identify the function of the Job view

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

APX™ RADIO MANAGEMENT WORKSHOP
RDS2017

COURSE OVERVIEW
Participants will learn the capabilities, features, and functions of the APX™ Radio Management Suite. This course covers an APX™ CPS overview, APX™ Radio Management Overview, Basic Networking Primer, ASTRO® 25/CEN Networking and UNS Overview, and APX™ Radio Management Installation, Configuration, and Operations. In addition, the course contains labs that focus on installation, configuration, and operation using both wired and POP25 updates to APX™ Subscriber radios in both a LAN and WAN environment.

TARGET AUDIENCE
Radio Technicians, System Managers, Radio Programmers

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe the APX™ Radio Management Suite operations and required software and hardware components
- Describe all deployment options for APX™ Radio Management Suite
- Configure a basic APX™ Radio Management system using a single PC, multiple PCs on a LAN, and multiple PCs on a WAN.
- Troubleshoot common APX™ Radio Management installation, configuration, and operation issues
- Use Best Practices to implement and optimise Radio Management Performance.

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience:
- APX™ CPS Programming and Template Building Overview

PREREQUISITES
None
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MOTOTRBO™ TECHNICAL TRAINING CURRICULUM

**DO YOU UNDERSTAND IP?**

- **YES**
  - **BASIC NETWORKING**
    - 1 HR
    - RDS0003
  - **MOTOTRBO™ SYSTEMS APPLIED NETWORKING**
    - 4 DAYS
    - PCT2007
- **NO**

**CHOOSE YOUR SPECIALISED SYSTEM TRAINING**

**CAPACITY MAX**

- **MOTOTRBO™ CAPACITY MAX TECHNICAL OVERVIEW**
  - 2 HRS
  - PCT1047
- **MOTOTRBO™ CAPACITY MAX THEORY OF OPERATION**
  - 1 HR
  - PCT1046
- **MOTOTRBO™ RADIO MANAGEMENT 2.0 CONFIGURATION MODE**
  - 1 HR
  - PCT1032
- **MOTOTRBO™ DESIGN AND DEPLOY FOR CAPACITY MAX**
  - 5 DAYS
  - PCT2010

**IP SITE CONNECT, CAPACITY PLUS (SINGLE AND MULTI-SITE)**

- **DO YOU HAVE MOTOTRBO™ EXPERIENCE?**
  - **YES**
    - **MOTOTRBO™ SYSTEM INTRODUCTION FOR TECHNICIANS**
      - 2 DAYS
      - CEDMEL2000
  - **NO**
    - **MOTOTRBO™ IP SITE CONNECT AND CAPACITY PLUS TECHNICAL OVERVIEW**
      - 1.5 HRS
      - PCT1066
    - **MOTOTRBO™ CAPACITY MAX THEORY OF OPERATION**
      - 1 HR
      - PCT1046
    - **MOTOTRBO™ RADIO MANAGEMENT 2.0 CONFIGURATION MODE**
      - 1 HR
      - PCT1032
    - **MOTOTRBO™ DESIGN AND DEPLOY FOR CAPACITY MAX**
      - 5 DAYS
      - PCT2010
    - **MOTOTRBO™ IP SITE CONNECT AND CAPACITY PLUS SYSTEMS WORKSHOP**
      - 4 DAYS
      - PCT3014

**CURRICULUM COMPLETE**

PARTICIPANT SHOULD BE ABLE TO DESCRIBE THE KEY CHARACTERISTICS OF THE SYSTEM, DESCRIBE THE KEY CONFIGURATION ITEMS IN BOTH SUBSCRIBERS AND REPEATERS, PROGRAM EFFECTIVE REPEATER AND SUBSCRIBER CODEPLUG TEMPLATES FOR THE SYSTEM, AND DESCRIBE THE APPLICABLE IP NETWORKING REQUIREMENTS WHEN DESIGNING A SYSTEM.
COURSE OVERVIEW
This is an introductory course to the MOTOTRBO™ system theory of operation, key components and topologies. MOTOTRBO™ System Introduction for Technicians provides all the basic information about common MOTOTRBO™ features and capabilities, along with system design and deploy principles. Upon successfully completing this course, individuals should be ready to take the more advanced Design and Deploy courses for IP Site Connect, Capacity Plus (Multi-Site and Single Site), Capacity Max and/or Connect Plus.

TARGET AUDIENCE
Professionals responsible for selling, designing, configuring, deploying, or maintaining MOTOTRBO™ Digital Radio Systems.

COURSE OBJECTIVES
At the end of this course, you should be able to:
• Correctly categorize the different components available to build your MOTOTRBO™ system.
• Accurately explain the functional technology that MOTOTRBO™ systems employ.
• Propose the MOTOTRBO™ topology that best fits the user requirements.
• Correctly describe MOTOTRBO™s digital and analog features.
• Analyze the various data applications’ capabilities and everyday uses within the MOTOTRBO™ systems.
• Refer to system and channel capacity considerations during system planning.
• Refer to MOTOTRBO™ IP network design considerations during system planning.
• Design a fleetmap in accordance with organizational requirements and resources.
• Select the right MOTOTRBO™ tool for your needs.
• Successfully purchase, register, and activate premium radio features.

REQUISITE KNOWLEDGE
Completion of the following optional courses or equivalent knowledge:
• RDS0003 Basic Networking
• RDS0002 Basic RF
• RDS0004 Basic Radio
• AAE1402 Professional and Commercial Radios (PCR) Portfolio Overview

PREREQUISITES
None

COURSE OVERVIEW
This self-study course is designed to help you learn the fundamentals of Capacity Max. Whether you have a sales or technical background, this training will give you the information that you need to gain a basic understanding of Capacity Max. Begin by exploring the DMR standard and Capacity Max’s positioning within the MOTOTRBO™ portfolio of systems. Learn about the different hardware and software components that make up a Capacity Max system and gain an understanding of its logical and physical topology. Features, redundancy, design tools and warranty will also be addressed.

TARGET AUDIENCE
Professionals responsible for selling, designing, configuring, deploying, or maintaining MOTOTRBO™ radio systems.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Explain Digital Mobile Radio (DMR)
• Describe a basic Capacity Max system and where it fits in the MOTOTRBO™ Portfolio
• Describe the Capacity Max’s system physical and logical topologies
• List the minimum hardware and software requirements for a Capacity Max system
• Distinguish the three different types of Capacity Max Operating Modes
• Identify the different features and license types available for a Capacity Max system

REQUISITE KNOWLEDGE
Basic Radio knowledge

PREREQUISITES
PCT1047 MOTOTRBO™ Capacity Max Technical Overview
COURSE OVERVIEW
MOTOTRBO™ Capacity Max Design and Deploy begins by covering the design process for a Capacity Max Radio system. Participants will have the opportunity to practice designing and deploying a small scale, 2 Site/3 Channel, Capacity Max system in a safe classroom environment. This course will also cover how to configure Capacity Max using Radio Management 2.0 Configuration Mode.

TARGET AUDIENCE
This training is intended for professionals responsible for designing, configuring, or deploying MOTOTRBO™ radio systems.

COURSE OBJECTIVES
Upon completion of this course, you will be able to:
- Design a simple a 1-System 2 Site/3 Channel Capacity Max system.
- Calculate Capacity Max capacity and bandwidth using a Case Scenario and System Design tools.
- Using Radio Management Configuration Mode, configure your radios and infrastructure.
- Deploy a 1-System 2 Site/3 Channel Capacity Max system.
- Using System Advisor, learn the fundamentals of troubleshooting and -maintaining a Capacity Max system.
- Execute Radio Management database backup and restore.
- Describe how to optimise a Capacity Max system.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- Understanding IP Network Addressing.
- Knowledge of RF Propagation modeling tools

PREREQUISITES
- PCT1032 MOTOTRBO™ Radio Management 2.0 Configuration Mode
- PCT1046 MOTOTRBO™ Capacity Max Theory of Operation
- PCT1047 MOTOTRBO™ Capacity Max Technical Overview

COURSE OVERVIEW
This course is designed to help you understand the basics of a MOTOTRBO™ IP Site Connect and a MOTOTRBO™ Capacity Plus system. We’ll begin by exploring their capabilities, features and positioning within the MOTOTRBO™ system solutions. You will also learn about the different system components and their general topology. The course will also review available MOTOTRBO™ services packages.

TARGET AUDIENCE
Professionals responsible for designing and deploying MOTOTRBO™ radio systems.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe a MOTOTRBO™ IP Site Connect and Capacity Plus system.
- Explain the capabilities of the MOTOTRBO™ IP Site Connect and Capacity Plus system.
- Identify the MOTOTRBO™ IP Site Connect and Capacity Plus system components.
- Identify a MOTOTRBO™ IP Site Connect and Capacity Plus system.
- Explain the difference in service plans between Capacity Plus and Connect system.
- Explain the capabilities of the MOTOTRBO™ IP Site Connect and Capacity Plus system.
- Illustrate possible system deployment topologies based on options selected.
- Define repeater arbitration, Enhanced Channel Access (ECA) and All Start.
- Use the MOTOTRBO™ System Design Tool to size the system.
- Explain the purpose of Fleetmapping, how to conduct a fleetmap and its importance in system design.
- List the considerations that must be taken into account when designing a MOTOTRBO™ IP Site Connect, Capacity Plus Single-Site or Capacity Plus Multi-Site system.
- Understand the purpose and intent of voting repeaters and receivers.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- RDS0004 Basic Radio
- CEDMEL2000 MOTOTRBO™ Systems Introduction for Technicians

PREREQUISITES
None

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- RDS0004 Basic Radio
- CEDMEL2000 MOTOTRBO™ Systems Introduction for Technicians
- PCT1066 MOTOTRBO™ IP Site Connect and Capacity Plus Technical Overview

PREREQUISITES
None
RADIO SOLUTIONS MOTOTRBO™
For general information contact the North America Training Services Desk at:
training.emea@motorolasolutions.com

• PCT2023 MOTOTRBO™ IP Site Connect and
• PCT1066 MOTOTRBO™ IP Site Connect and
experience:
Completion of the following course or equivalent knowledge:
- CEDMEL2000 MOTOTRBO™ System Introduction for Technicians
- PCT1066 MOTOTRBO™ IP Site Connect and Capacity Plus Technical Overview
- PCT2023 MOTOTRBO™ IP Site Connect and Capacity Plus Theory of Operations and Design

TARGET AUDIENCE
Professionals responsible for deploying MOTOTRBO™ radio systems.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe MOTOTRBO™ IP Site Connect and Capacity Plus (Single and Multi-Site) systems, their capabilities, system components, and data application.
- Describe MOTOTRBO™ IP Site Connect and Capacity Plus (Single and Multi-Site) theory of operation.
- Define the set-up, installation and configuration process of the MOTOTRBO™ Plus system.
- Define the set-up, installation and configuration process of the MOTOTRBO™ Plus system.
- Configure MOTOTRBO™ radios and repeaters for different system configurations.
- Configure MOTOTRBO™ Network Interface Service and MOTOTRBO™ DDMS Administrative Client.

REQUISITE KNOWLEDGE
RDS0004 Basic Radio

PREREQUISITES
Completion of the following course or equivalent knowledge:
- CEDMEL2000 MOTOTRBO™ System Introduction for Technicians
- PCT1066 MOTOTRBO™ IP Site Connect and Capacity Plus Technical Overview
- PCT2023 MOTOTRBO™ IP Site Connect and Capacity Plus Theory of Operations and Design

COURSE OVERVIEW
This course allows the participant to acquire in-depth hands-on experience in planning, configuring, and deploying the following MOTOTRBO™ systems: Digital Conventional, IP Site Connect, Capacity Plus Single and Multi-Site. Under the Instructor’s guidance, participants will have the opportunity to practise designing and deploying the systems in a safe classroom environment. The course also provides information on the fleetmapping considerations together with exercises for each system type.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe TRBOnet PLUS functionalities
- Describe TRBOnet PLUS solution architecture
- List the system requirements for deploying a SmartPTT PLUS solution
- Describe the system design for IP Site Connect, Capacity Plus, Linked Capacity Plus
- Describe the system design for Connect Plus
- Define the set-up, installation and configuration process of the TRBOnet PLUS Radio Server
- Define the set-up, installation and configuration process of the TRBOnet PLUS Dispatcher console functionalities
- Configure MOTOTRBO™ radios and repeaters for TRBOnet PLUS
- Configure MOTOTRBO™ Network Interface Service and MOTOTRBO™ DDMS Administrative Client

REQUISITE KNOWLEDGE
Completion of a DIMETRA System Overview course or equivalent experience is required.

PREREQUISITES
None

COURSE OVERVIEW
The TRBOnet Plus Workshop is a highly interactive course, providing delegates with the information needed to install and configure a TRBOnet Plus system. Information covered includes MOTOTRBO™ control rooms, TRBOnet specifications, as well as installation and configuration procedures.

TARGET AUDIENCE
System operations staff and field engineers involved in the installation and configuration of TRBOnet systems.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe TRBOnet PLUS functionalities
- Describe TRBOnet PLUS solution architecture
- List the system requirements for deploying a SmartPTT PLUS solution
- Describe the system design for IP Site Connect, Capacity Plus, Linked Capacity Plus
- Describe the system design for Connect Plus
- Define the set-up, installation and configuration process of the TRBOnet PLUS Radio Server
- Define the set-up, installation and configuration process of the TRBOnet PLUS Dispatcher console functionalities
- Configure MOTOTRBO™ radios and repeaters for TRBOnet PLUS
- Configure MOTOTRBO™ Network Interface Service and MOTOTRBO™ DDMS Administrative Client

REQUISITE KNOWLEDGE
An understanding of IP Networking Addressing and VoIP protocols
- Completion of the following courses or equivalent knowledge:
  - CEDMEL2000 Introduction to MOTOTRBO™ Systems for Technicians
  - PCT1047 MOTOTRBO™ Capacity Max Technical Overview
  - PCT1032 Radio Management 2.0 Configuration Mode

PREREQUISITES
None

COURSE OVERVIEW
This course covers all aspects of the SmartPTT Plus system. It provides detailed information on the system’s benefits, architecture and features, including the requirements for deploying a SmartPTT system. The course then goes on to cover the installation and configuration of the Dispatch, Radioserver and associated system components and features.

TARGET AUDIENCE
Technicians and engineers who are involved in the design, deployment and installation or configuration of a SmartPTT Plus system.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe the function of SmartPTT PLUS
- Describe SmartPTT PLUS solution architecture
- List the system requirements for deploying a SmartPTT PLUS solution
- Describe the process of system design for IP Site Connect, Capacity Plus, Linked Capacity Plus
- Describe the system design processes for Connect Plus
- Define the set-up, installation and configuration process for the SmartPTT PLUS Radio Server
- Define the set-up, installation and configuration process for the SmartPTT PLUS Dispatcher console functions
- Configure MOTOTRBO™ radios and repeaters for SmartPTT PLUS
- Configure MOTOTRBO™ Network Interface Service and MOTOTRBO™ DDMS Administrative Client

REQUISITE KNOWLEDGE
- An understanding of IP Networking Addressing and VoIP protocols
- Completion of the following courses or equivalent knowledge:
  - CEDMEL2000 Introduction to MOTOTRBO™ Systems for Technicians
  - PCT1047 MOTOTRBO™ Capacity Max Technical Overview
  - PCT1032 Radio Management 2.0 Configuration Mode

PREREQUISITES
None
ASTRO® 25 IV&D SYSTEM COURSES

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ASTRO® 25 IV&D RADIO SYSTEM ADMINISTRATOR

**M CORE**
- **ASTRO® 25 IV&D SYSTEM OVERVIEW**
  - 2.5 HRS
  - AST1038

**L CORE**
- **ASTRO® 25 IV&D RADIO SYSTEM ADMINISTRATOR WORKSHOP**
  - 5 DAYS
  - AST4102

**RECOMMENDED CURRICULUM IS COMPLETE**

Participant should be able to carry out administrative tasks in the ASTRO® 25 IV&D system such as: provisioning subscribers and talk groups, generating historical reports, controlling deployed subscribers and managing network element configurations. Participant understands factors of system configuration that impact ASTRO® 25 system management.
ASTRO® 25 IV&D M/L Core Technician

**M Core**

- **ASTRO® 25 IV&D System Overview**
  - Duration: 2.5 hours
  - Code: AST1038

**L Core**

- **ASTRO® 25 IV&D System Core Workshop**
  - Duration: 5 days
  - Code: AST4103

**Recommended Curriculum is Complete**

Participant should understand ASTRO® 25 M Core components, virtual servers and service strategy. Participant can interpret system alarms, propose solutions for system failures, and as well as restoring equipment to proper functionality.
**ASTRO® 25 IV&D REPEATER SITE TECHNICIAN (GTR)**

**ASTRO® 25 IV&D SYSTEM OVERVIEW**

- **M CORE**
  - 2.5 HRS
  - AST1038

**ASTRO® 25 IV&D GTR 8000 REPEATER SITE WORKSHOP**

- **L CORE**
  - 3 DAYS
  - AST4208

**RECOMMENDED CURRICULUM IS COMPLETE**

Participant can maintain an ASTRO® 25 repeater site including: GTR8000 base station, GCP8000 site controller and other site equipment.

*Participant performs alignments troubleshooting and field replacement of site devices during course.*
ASTRO® 25 IV&D CONVENTIONAL RF SITE TECHNICIAN

**M CORE**

- ASTRO® 25 IV&D SYSTEM OVERVIEW
  - 2.5 HRS
  - AST1038

**L CORE**

- ASTRO® 25 IV&D CONVENTIONAL RF SITE WORKSHOP
  - 3 DAYS
  - AST4440

**RECOMMENDED CURRICULUM IS COMPLETE**

Participant should be able to maintain an ASTRO® 25 repeater site including the GTR8000 base station, GCP8000 site controller, site comparator and other site equipment.
COURSE OVERVIEW
The ASTRO® 25 IV&D System Overview course will provide participants with knowledge and understanding of the ASTRO® 25 IV&D system. This course will address M, L and K Core systems. System architecture, components and features will be explained. In addition, RF and console sites and their architecture, features and components will be discussed. Finally, call processing for voice and mobile data applications will be covered, and an introduction to applications available in the ASTRO® 25 system will be provided.

TARGET AUDIENCE
Core Technicians, Site Technicians, Console Technicians, Core Managers.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Understand the general architecture of an ASTRO® 25 IV&D Radio System
• Understand key features of available in the ASTRO® 25 IV&D Radio System
• Understand the components of the ASTRO® 25 Zone Core
• Understand site components in the ASTRO® 25 system
• Understand the features, capabilities and components of the MCC7000 series dispatch consoles
• Understand concepts of Mobility and Call Processing in the ASTRO25
• Understand the applications for managing the ASTRO® 25 system

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
This workshop covers administrator functions for an ASTRO® 25 Integrated Voice and Data (IV&D) System. Learning activities in this course focus on how to use the different ASTRO® 25 IV&D System Management applications. Participants will be provided with an opportunity to discuss how to structure their organisation and personnel for optimal ASTRO® 25 IV&D system use.

TARGET AUDIENCE

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe the relationship between radio programming, console administration and system management, and the impact of this relationship on system planning.
• List the network management tools applicable at each phase of the system life cycle.
• Identify the advantages and disadvantages of options available for the configuration of system infrastructure and user parameters.
• Use the report and real-time data to monitor performance and make adjustments necessary to maintain acceptable system performance levels.

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience:
• ACT101E Bridging the Knowledge Gap – System Administrators
• NST762 Networking Essentials in Communication Equipment
• NWT003 ASTRO® 25 Applied Networking
• AST1038 ASTRO® 25 IV&D System Overview

PREREQUISITES
None
COURSE OVERVIEW
This workshop describes planning, installation, configuration, operations, and troubleshooting of Secure Communications within the ASTRO® 25 IV&D System.

TARGET AUDIENCE
System Technicians, System Administrators, Technical System Managers

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Plan, organise, and implement Secure Communications in an ASTRO® 25 IV&D system.
• Install and configure a Key Management Facility (KMF) system and related components.
• Demonstrate centralised key management using Over-the-Air-Rekeying (OTAR).
• Perform System Administrator functions using the KMF server and KMF client.
• Troubleshoot installation and configuration problems for the KMF server, KMF client, and KMF database.

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience:
• ACT100E Bridging the Knowledge Gap - Technicians
• NST762 Networking Essentials in Communication Equipment

PREREQUISITES
None
RADIO SOLUTIONS ASTRO® 25 IV&D SYSTEMS

For general information contact the Europe, Middle East and Africa Education Services Help Desk at:
training.emea@motorolasolutions.com

COURSE OVERVIEW
The ASTRO® 25 IV&D Conventional RF Site workshop describes the components in the different ASTRO® 25 IV&D Conventional RF Sites topologies. This course also presents how the different ASTRO® 25 IV&D Conventional RF Sites topologies operate and explains the tools and methods available for troubleshooting components within the different ASTRO® 25 IV&D Conventional RF Sites topologies.

TARGET AUDIENCE
Site Technicians

COURSE OBJECTIVES
After completing the course the participant will be able to:

- Understand key physical and functional characteristics of conventional site.
- Perform tasks necessary to install conventional site components.
- Perform configuration steps for conventional site components.
- Understand available maintenance tools and indicators in conventional site.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:

- ACT101E Bridging the Knowledge Gap – System Administrators
- NST762 Networking Essentials in Motorola Communications Equipment
- NWT003 ASTRO® 25 System Applied Networking
- AST1038 ASTRO® 25 IV&D System Overview

PREREQUISITES
None

COURSE OVERVIEW
This workshop addresses topics necessary for the effective planning and mapping of an ASTRO® 25 IV&D radio system. During this course, the participants will learn about ASTRO® 25 features, capabilities, and restrictions in order to effectively plan and prepare for a new or upgraded ASTRO® 25 system.

TARGET AUDIENCE
Pre-sale customers, new system managers, system planning personnel

COURSE OBJECTIVES
After completing this course, the student will be able to:

- Discuss what a fleetmap is and why one is needed.
- Discuss the methodologies used to configure radio users and groups with the goal of optimising the system resources.
- Describe the content to assist with fleetmapping decisions.
- Discuss frequency band plan organisation and management.
- Describe basic planning requirements and complete a simple Fleetmap information template.
- Complete worksheets required to create a Fleetmap based on sample operational requirement information.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
This course describes the Radio Authentication feature and defines the HW/SW components in the Radio Authentication system. In addition the course describes the Radio Authentication process, discusses the various Keys uses in Radio Authentication. The students will understand how to provision and distribute relevant Keys using the AuC Client GUI to access the AuC Server. Students will understand how to enable Radio Authentication in the System via the AuC Client and how to configure the KVL 4000 for Radio Authentication and manage subscribers from the AuC Client.

TARGET AUDIENCE
Customer Administrators or Technicians.

COURSE OBJECTIVES
After completing this course, the student will be able to:

- Describe Radio Authentication features and HW/SW components.
- Describe the Radio Authentication process. Discuss the Keys used in Radio Authentication.
- Provision and distribute relevant Keys. Describe the AuC Client GUI.
- Manage Subscribers from the AuC Client. Discuss Radio Authentication functionality in a DSR system.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:

- AAE1400 Radio Authentication.
- Radio System Administration or equivalent knowledge of the Provisioning Manager, ZoneWatch, Historical Reports, ATIA Log Viewer, Unified Event Manager (UEM), Unified Network Configurator (UNC).

PREREQUISITES
Access to customer ASTRO® 25 Radio System, AuC Server/Client is required. Customer to provide working Motorola Solutions’ portable radio(s) capable of placing calls on the System, access to working AuC client/server along with admin login credentials, access to a working KVL4000 key loader that can upload keys to the AuC server.
INTRODUCTION TO KVL 5000

1 DAY
AST0067

COURSE OVERVIEW
The purpose of this training is to provide an introduction to the Key Variable Loader 5000. The course covers procedures which help participants familiarize themselves with the device and guide them through its configuration process. Participants will learn about features of KVL 5000, managing of encryption keys, loading keys into target device, configuring target devices using KVL 5000, sharing keys between KVLs, using KVL in an OTAR system, and managing log records.

TARGET AUDIENCE
Technical Support Staff responsible for managing secure devices.

COURSE OBJECTIVES
At the end of this course, you will be able to:
• Perform initial configuration of the KVL 5000
• Manage encryption keys in the KVL 5000
• Load keys and key groups into target devices
• View or remove keys from target devices
• Share keys between KVLs
• Configure and use the KVL 5000 in an OTAR system
• Manage key records

REQUISITE KNOWLEDGE
None

PREREQUISITES
None
## SOFTWARE & APPLICATIONS

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COURSE OVERVIEW
This course provides instruction on how to operate the WAVE PTX Dispatch web-based application. Split into short clips, this in-depth course covers the basics, from installation and high-level overview, through making, receiving and recording calls, sending and receiving secured messages, using the map and monitoring TalkGroups, and then moves on to more advanced features, such as geofencing and location history.

TARGET AUDIENCE
This training is intended for WAVE PTX users who want to get familiar with the features and operation principles of WAVE PTX Dispatch application in order to coordinate fleets and communicate with them.

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Install and launch WAVE PTX Dispatch application.
• Navigate the application’s interface.
• Use the map.
• Make and receive calls.
• Send and receive secure messages.
• Perform advanced operations.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
This course provides an overview of the WAVE PTX PTT application. It offers guidelines for signing up for WAVE PTX trial and includes demonstrations of how to make calls, share location, and send secure multimedia messages. It also explains how to use the latest features, such as Quick Group from Map, Geofencing, and Supervisory Override.

TARGET AUDIENCE
This training is intended for new WAVE PTX users who want to start using the application and get familiar with its interface and features.

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Navigate the new WAVE PTX PTT application’s interface.
• Make calls, share location, and send secure multimedia messages.
• Create Quick Groups from the map view, add Geofences, and use Supervisory Override.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
In this course, you will learn how to operate the TLK 100 Portable Two-Way Radio, make and receive calls, register and modify device information, and perform basic maintenance on your device. Software version 3.0 or newer is required for some features of the radio.

TARGET AUDIENCE
This training is intended for WAVE users who want to learn how to add and activate a TLK 100 through WAVE Portal and how to operate the device.

COURSE OBJECTIVES
After completing this course, you will be able to:
• Navigate the TLK 100 menu.
• Access radio information.
• Connect wired and wireless accessories.
• Initiate and receive calls.
• Activate devices.
• Manage devices and users.
• Declare and respond to emergencies.
• Send and respond to IPAs.
• Perform radio maintenance.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None
SOFTWARE & APPLICATIONS

For general information contact the Europe, Middle East and Africa Education Services Help Desk at: training.emea@motorolasolutions.com

For information on prerequisites and to register for courses visit the LXP at: LEARNING.MOTOROLASOLUTIONS.COM

COURSE OVERVIEW
The course includes a conceptual overview of the solution, and presents operation procedures for the GINA Central environment.

TARGET AUDIENCE
The course is dedicated to system operators responsible for end-user management, dispatch activities, monitoring and processing emergency events.

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Present GINA solution from a high-level perspective (IMW context is included).
• Explain basic system concepts.
• Introduce GINA Central from the operator's perspective.
• Present basic and advanced operations within the GINA Central environment.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
The course is intended for individuals performing administrative roles in the management and maintenance of GINA systems. It includes a range of functions that an administrator can perform, from system configuration, logging, and daily upkeep, to user and solution management.

TARGET AUDIENCE
The course is primarily intended for system administrators that have full access rights, and it includes solution management from the backend perspective.

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Present GINA architecture from a high-level perspective.
• Present configuration and integration details with Intelligent Middleware.
• Explore administrative options in the GINA Central client.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
The purpose of this course is to provide the steps to operate and maintain a customer's IMW system within their Motorola system (ASTRO®, DIMETRA, LTE).

TARGET AUDIENCE
Professionals responsible for the operation and maintenance of a customer's IMW system within their Motorola systems (ASTRO®, DIMETRA, LTE).

COURSE OBJECTIVES
By the end of the course, you will be able to:
• Describe IMW features.
• Configure an IMW system.
• Identify the IMW tools to administer the system.
• Perform routine administration.
• Perform troubleshooting.
• Understand system-specific considerations.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None
COURSE OVERVIEW
This course provides an overview of the WAVE™ 5000 Solution, its features, hardware requirements, and software and is targeted to the Administrator role and or support roles.

TARGET AUDIENCE
You should attend this training course if you are an Administrator or support personnel of a WAVE™ 5000 solution.

COURSE OBJECTIVES
By the end of the course, you will be able to:
- Add, edit and delete Channels.
- Create, edit and delete Channel Groups.
- Perform administration tasks for Users, Profiles, and Subscribers Manage Media and Proxy Servers.
- Manage Console.
- Understand SIP.
- Describe what QoS is.
- Describe Morse Call Signs public safety feature
- View log entries and delete log records in System Log.
- Search, play, and download recordings.
- Add, change, and delete audio files.
- Describe the WAVE™ Database.
- Find answers to troubleshooting questions.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None
Our website is your portal to find help to meet your organisational training needs. Keep up to date with the latest version of this catalogue, our training schedule, or simply use the Contact Us function for additional questions or assistance.

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