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 personalised 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.
THE LEARNING EXPERIENCE PLATFORM (LXP)

The LXP is your valuable resource to see the latest courses, descriptions, requirements, dates and locations. If you are a Motorola Solutions Customer who already has a Motorola Solutions Login ID, you can go to the “Enroll 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
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.apac@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 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.

**TOPICS**

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

**TOPICS**

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

**TOPICS**

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

HOW TO MAKE PAYMENTS WHEN ENROLING 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. – 6:00 p.m. Kuala Lumpur/Singapore Time

or email us at:
Training.APAC@motorolasolutions.com

CONTACT MOTOROLA SOLUTIONS ASIA PACIFIC

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<td>1-800-931855</td>
</tr>
<tr>
<td>CHINA (MAINLAND)</td>
<td>4001-202101</td>
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<tr>
<td>HONG KONG SAR</td>
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<td>THAILAND</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 typically done 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.

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 aids 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

COURSES FOR CONSOLE PRODUCTS
- MCC 7000 Series Dispatch Console Administrator Training
- MCC 7000 Series Dispatch Console Operator Training
- MCD 5000 Operator Training

COURSES FOR MOBILES & PORTABLES
- MTP/MTM Series
- APX™ Series
- MOTOTRBO™ Series

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
- 2 HRS
- RDS0002

BASIC RADIO
- 4 HRS
- RDS0004

COMMUNICATION SYSTEMS CONCEPTS
- 5 DAYS
- NST021

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

**BASIC NETWORKING**
1 HR  
RDS003

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

**CHOOSE ONE OF THE FOLLOWING COURSES BELOW ACCORDING TO YOUR SOLUTION SYSTEM**

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

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

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

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

- CLICK HERE TO GO TO PAGE 21 FOR MORE DETAILS ON DIMETRA
- CLICK HERE TO GO TO PAGE 43 FOR MORE DETAILS ON MOTOTRBO™
- CLICK HERE TO GO TO PAGE 48 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 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

---

**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.

**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
**RF FUNDAMENTALS**

**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

---

**RF FOR RADIO PROFESSIONALS**

**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

---

**COMMUNICATION SYSTEMS CONCEPTS**

**COURSE OVERVIEW**
This course emphasizes the concepts behind RF Systems theory and operation. Major topics covered include:
- RF System Operation, including talkaround, 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 courses or equivalent experience is highly recommended:
• An understanding of basic Motorola Communications Systems
• Basic familiarization with computer operating systems
• Completion of Basic Networking course (RDS0003) or equivalent experience

PREREQUISITES
None

NETWORKING ESSENTIALS IN MOTOROLA SOLUTIONS COMMUNICATIONS EQUIPMENT
NST762
5 DAYS
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.
• Define basic IP network connectivity and addressing.
• Define ASTRO® 25 Master Site VLAN/VRTR 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:
• NST762 Networking Essentials in Motorola Communications Systems

PREREQUISITES
None
## DIMETRA SYSTEMS COURSES

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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
    - DMT9105

- **ENCRYPTION, AUTHENTICATION & PROVISIONING**
  - **DIMETRA X CORE D9.1 AIR INTERFACE ENCRYPTION, AUTHENTICATION, AND PROVISIONING WORKSHOP**
    - 3 DAYS
    - DMT9104
DIMETRA FIELD ENGINEER

DIMETRA X CORE D9.1 SYSTEM OVERVIEW
3 DAYS
DMT9100

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

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

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

MTS 2/MTS 4 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE WORKSHOP
4 DAYS
TBTS01
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
COURSE OVERVIEW
This course provides an overview of the features and functions of a DIMETRA X Core D9.1 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 D9.1 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 D9.1 features and their benefits.
• Describe DIMETRA X Core D9.1 Single Zone system components and their functionality.
• Describe the purpose and function of DIMETRA X Core D9.1 Network Management applications.
• Describe DIMETRA X Core D9.1 Multi-Zone system components and their functionality.
• Describe DIMETRA X Core D9.1 Inter-System Interface functionality.
• Describe how different types of calls are processed through a DIMETRA X Core D9.1 system.

REQUISITE KNOWLEDGE
None

PREREQUISITES
None

COURSE OVERVIEW
During this workshop delegates will use configuration and administration applications to manage a DIMETRA X Core D9.1 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 D9.1 system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Define the role of Configuration Management and Server Administration within your DIMETRA X Core system.
• Define the role of each of the applications used within Fault Management.
• Utilise the Unified Event Manager (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.
• Explain the importance of daily operational tasks.
• Perform server database administration tasks.

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

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 D9.1 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 D9.1 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 Manager (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 D9.1 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 D9.1 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 D9.1 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

COURSE OVERVIEW
During this workshop delegates will troubleshoot and maintain a live DIMETRA X Core D9.1 system using business scenarios, troubleshooting procedures and diagnostic applications. Delegates will also perform complex FRU/FRE procedures to resolve hardware faults.

TARGET AUDIENCE
System and Field Engineers who troubleshoot and maintain a DIMETRA X Core D9.1 system.

COURSE OBJECTIVES
By the end of the course, the student will be able to:
- Describe troubleshooting model process, system support tools and technical support services provided by Motorola Solutions.
- Describe the DIMETRA X Core system architecture.
- Perform troubleshooting procedures using system troubleshooting tools.
- Perform recommended routine maintenance procedures for a DIMETRA X Core D9.1 system.
- Perform replacement procedures and reconfigure faulty Field Replaceable Units (FRUs) and Field Replaceable Equipment/Entities (FREs) within a DIMETRA X Core D9.1 system.
- Perform verification procedures on FRU/FRE replacement.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- DMT9100 DIMETRA X Core D9.1 System Overview
- DMT9102 DIMETRA X Core D9.1 Fault Management Workshop

PREREQUISITES
None
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

COURSE OVERVIEW
The workshop is designed to give an overview of the elements of the DIMETRA X Core D9.1 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 D9.1 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

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
None

PREREQUISITES
None
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 a 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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MCC 7000 SERIES DISPATCH CONSOLES WORKSHOP (CON012) focuses on the consoles application in an M- or L-core system.
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
After completing this course, the student will be able to:
- Identify the hardware components that make up the dispatcher position
- Describe the Purpose of the Elite Admin application
- Identify elements that make up the menu and toolbar structure within the Elite Admin software
- Perform Elite Admin Configurations

Requisite Knowledge
Completion of the following course or equivalent experience:
- DMT9112 DIMETRA X Core D9.1 MCC 7500 Operator Workshop

Prerequisites
None
### COURSE OVERVIEW

The goal of the MIP 5000 Installation and Maintenance training is to teach participants how to correctly install and maintain a MIP 5000 console in the field.

### TARGET AUDIENCE

Field engineers responsible for installing and maintaining MIP 5000.

### COURSE OBJECTIVES

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

- Describe what the MIP 5000 does
- Describe the System Architecture
- Describe the Distributed Call Processing Module (DCPM)
- Explain the purpose of the Discovery Form
- Properly Install a MIP 5000 Console
- Properly Configure a MIP 5000 Console
- Describe the purpose of the DCPM Service Manager
- List common troubleshooting problems and their solutions

### REQUISITE KNOWLEDGE

None

### PREREQUISITES

None
COURSE OVERVIEW
This course provides an overview of the MCC 7000 series of Dispatch Consoles. It includes a description of the features, illustrations of subsystem architecture options, descriptions of subsystem components, and illustrations of signal flow and call processing.

TARGET AUDIENCE
System Administrators, Console Technicians.

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Describe the features of MCC 7000 series of Dispatch Consoles.
- Explain the various system architectures for Dispatch Console subsystems.
- Describe system components in a Dispatch Console subsystem.
- Describe the steps in the signal flow of call processing from a Dispatch Console

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience:
- ACT100E or ACT101E Bridging the Knowledge Gap
- NST762 Networking Essentials in Motorola Communications Equipment

PREREQUISITES
None

COURSE OVERVIEW
This course familiarises participants in installation, configuration, management and repair of MCC 7000 Series Dispatch Consoles, Archiving Interface Servers, AUX I/O servers, and Conventional Channel Gateways. The focus is on a detailed discussion of console hardware and hands-on activities with the installation and configuration of the MCC 7000 Series Dispatch Consoles.

TARGET AUDIENCE
System Administrators, Console Technicians

COURSE OBJECTIVES
After completing this course, the student will be able to:
- Understand key physical and functional characteristics of MCC 7000 Series Dispatch Consoles.
- Understand physical installation requirements of MCC 7000 Series Dispatch Consoles.
- Perform tasks necessary to install MCC 7000 Series Dispatch Consoles components.
- Perform configuration steps for MCC 7000 Series Dispatch Consoles components.
- Understand available maintenance tools and indicators in MCC 7000 Series Dispatch Consoles.
- Perform routine maintenance activities in MCC 7000 Series Dispatch Consoles components.
- Troubleshoot MCC 7000 Series Dispatch Consoles components to the Motorola Solutions recommended service level.
- Perform tasks necessary to provision users for MCC 7000 Series Dispatch Consoles.
- Configure the MCC 7000 Series Dispatch Consoles interface.
- Perform required administrative activities for MCC 7000 Series Dispatch Consoles.

REQUISITE KNOWLEDGE
Completion of the following course(s) or equivalent experience:
- ACT100E or ACT101E Bridging the Knowledge Gap
- NST762 Networking Essentials in Motorola Communications Equipment
- NWT003 ASTRO® 25 Systems Applied Networking

PREREQUISITES
AST1038 ASTRO® 25 IV&D System Overview

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
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
BASE STATIONS COURSES

MTS 2/MTS 4 INSTALLATION, CONFIGURATION, TROUBLESHOOTING & MAINTENANCE WORKSHOP (TBTS01) 37

MTS 1 INSTALLATION, CONFIGURATION, TROUBLESHOOTING AND MAINTENANCE (TBTS04) 37

EBTS INSTALL, CONFIG, TROUBLESHOOTING & MAINTENANCE (TBTS02) 37
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
Completion of the following courses or equivalent experience:
• TSYS01R82 - DIMETRA IP R8.2 System Overview
• RF and Field service background.

PREREQUISITES
None

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 is recommended

PREREQUISITES
None

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

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

COURSE OBJECTIVES
By the end of the course, the student will be able to:
• Describe the function of the EBTS within a DIMETRA system.
• Identify field replaceable units (FRUs) of the EBTS.
• Identify the main components of key FRUs at block diagram level.
• Carry out removal and replacement procedures for all EBTS FRUs.
• Identify FRU part numbers.
• Perform maintenance and testing procedures using Motorola Solutions TETRA EBTS Service Software.
• Troubleshoot EBTS to FRU level.

REQUISITE KNOWLEDGE
RF and Field or Bench service background is 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.

**MTP3000 SERIES END-USER OPERATOR**
DMT1054
1 DAY

**MTP6000 SERIES END-USER OPERATOR**
DMT1068
1 DAY

**MTP8000EX SERIES END-USER OPERATOR**
DMT1069
1 DAY

**MTM5000 SERIES END-USER OPERATOR**
DMT1070
1 DAY

**ST7000 END-USER OPERATOR**
DMT1083
1 DAY

**ST7500 END-USER OPERATOR**
DMT0033
1 DAY

**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)**
TTER01PLUS
2 DAYS

**TETRA SUBSCRIBER OPERATOR, PROGRAMMING AND MAINTENANCE**
DMT1107
1 DAY
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

<?xml version="1.0" encoding="utf-8"?>

<document type="course">

<title>CPS PROGRAMMING AND TEMPLATE BUILDING OVERVIEW</title>
<duration>2 DAYS</duration>
<code>ADT001V</code>

<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

<?xml version="1.0" encoding="utf-8"?>

<document type="course">

<title>APX™ CPS PROGRAMMING AND TEMPLATE BUILDING</title>
<duration>2 DAYS</duration>
<code>APX7001</code>

<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&O TDMA and ASTRO® 25 iV&O 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&O TDMA and ASTRO® 25 iV&O 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

<?xml version="1.0" encoding="utf-8"?>

<document type="course">

<title>APX™ TECHNICAL SUBSCRIBER ACADEMY</title>
<duration>5 DAYS</duration>
<code>APX010</code>

<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**  
**1 HR**

**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

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**APX™ RADIO MANAGEMENT WORKSHOP**  
**RDS2017**  
**3 DAYS**

**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™ SUBSCRIBER & REPEATER TECHNICAL SERVICE ACADEMY**  
**TBO300**  
**4 DAYS**

**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**
After completing this course, the student will be able to:
- 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**
This training should only be attempted after you have had some experience or completed the following course:
- CEDMEL2000 MOTOTRBO™ System Introduction 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

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**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
# MOTOTRBO™ COURSES

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MOTOTRBO™ TECHNICAL TRAINING CURRICULUM

DO YOU UNDERSTAND IP

YES ➔ BASIC NETWORKING

NO ➔ MOTOTRBO™ SYSTEMS APPLIED NETWORKING

BASIC NETWORKING

1 HR
RDS0003

MOTOTRBO™ SYSTEMS APPLIED NETWORKING

4 DAYS
PCT2007

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™ CAPACITY MAX THEORY OF OPERATION

1.5 HRS
PCT1066

MOTOTRBO™ CAPACITY MAX TECHNICAL OVERVIEW

1 HR
PCT1046

MOTOTRBO™ IP SITE CONNECT AND CAPACITY PLUS TECHNICAL OVERVIEW

1.5 HRS
PCT1066

MOTOTRBO™ IP SITE CONNECT AND CAPACITY PLUS THEORY OF OPERATION

1 DAY
PCT2032

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.
MOTOTRBO™ SYSTEM INTRODUCTION FOR TECHNICIANS
CEDMEL2000
2 DAYS

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.

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

COURSE OBJECTIVES
Upon completion of this course, you will 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

MOTOTRBO™ CAPACITY MAX TECHNICAL OVERVIEW
PCT1047
2 HRS

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

MOTOTRBO™ CAPACITY MAX THEORY OF OPERATION
PCT1046
1 HR

COURSE OVERVIEW
This foundational self-study course is designed to help you understand the theory of how a Capacity Max system functions. It describes the life cycle of a call, which includes: call initiation, call queueing, call grant or rejection, call transmission(s), and call termination. This knowledge is important for system troubleshooting and maintenance purposes.

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:
• Control Channel
• Roaming
• Radio Registration
• Call Request
• Call Setup
• Busy Queue
• Channel Allocation
• Call Termination

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 selling, designing, configuring, deploying, or maintaining 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 components.
• Identify the MOTOTRBO™ IP Site Connect and Capacity Plus system components.
• Describe a MOTOTRBO™ IP Site Connect and Capacity Plus topology.
• Explain the difference in service plans between a MOTOTRBO™ IP Site Connect and Capacity Plus system.
• Explain the call processing methods.
• Define repeater arbitration, Enhanced Channel Access (ECA) and All Start.
• 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.
• 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.
• Illustrate possible system deployment topologies based on options selected.
• Describe the roaming process which helps to optimise User coverage.
• Describe Data capabilities.
• 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™ System Introduction for Technicians

PREREQUISITES
None

COURSE OVERVIEW
This course is designed to help you gain a solid foundation and understanding of the theory behind how an IPSC and Capacity Plus system functions. It describes the life cycle of a call, repeater arbitration and Motorola’s proprietary Enhanced Channel Access (ECA) feature. In addition, you will learn about the different IPSC and Capacity Plus system design options, fleetmapping and the MOTORBO System Design Tool.

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

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Explain the purpose of Fleetmapping, how to conduct a fleetmap and its importance in system design.
• Illustrate possible system deployment topologies based on options selected.
• Describe the roaming process which helps to optimise User coverage.
• Describe Data capabilities.
• Understand the purpose and intent of voting repeaters and receivers.

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience:
• RDS0004 Basic Radio
• CEDMEL2000 MOTOTRBO™ System Introduction for Technicians
• PCT1066 MOTOTRBO™ IP Site Connect and Capacity Plus Technical Overview

PREREQUISITES
None
MOTOROLASOLUTIONS.COM

For general information contact the Asia Pacific Education Services Help Desk at:
training.apac@motorolasolutions.com

RADIO SOLUTIONS MOTOTRBO™

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

MOTOTRBO™ IP SITE CONNECT AND CAPACITY PLUS SYSTEMS WORKSHOP

PREREQUISITES
Completion of the following courses or equivalent experience:
• RDS0004 Basic Radio

REQUISITE KNOWLEDGE
Completion of the following courses or equivalent experience:
• 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.

TARGET AUDIENCE
Professionals responsible for deploying MOTOTRBO™ radio systems.

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe the MOTOTRBO™ IP Site Connect and Capacity Plus (Single and Multi-Site) systems, their capabilities, system components, and data application.
• Describe the MOTOTRBO™ IP Site Connect and Capacity Plus (Single and Multi-Site) theory of operation.
• Describe the available MOTOTRBO™ IP Site Connect and Capacity Plus (Single and Multi-Site) topologies.
• Take the steps needed to configure IP Site Connect and Capacity Plus (Single and Multi-Site) systems using MOTOTRBO™ CPS to program the subscribers and repeaters.

SMARTPTT PLUS

PREREQUISITES
None

REQUISITE KNOWLEDGE
• An understanding of IP Networking Addressing and VoIP protocols
• Completion of the following courses 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 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 system design processes for the Dispatch, Radioserver and associated system components and features.

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TRBONET PLUS ESSENTIALS AND DEPLOYMENT

PREREQUISITES
None

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

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 TRBOnet PLUS system
• 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 TRBOnet PLUS Dispatcher console functionalities
• Configure MOTOTRBO™ radios and repeaters for TRBOnet PLUS
• Configure MOTOTRBO™ Network Interface Service and MOTOTRBO™ DDMS Administrative Client

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**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**
  
  2.5 HRS
  
  AST1038

**L Core**

- **ASTRO® 25 IV&D System Core Workshop**
  
  5 DAYS
  
  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)

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

**L Core**
- **ASTRO® 25 IV&D GTR 8000 REPEATER SITE WORKSHOP**
  - 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 | L CORE

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

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 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 ASTRO® 25
• 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

COURSE OVERVIEW
This workshop describes the components in the ASTRO® 25 IV&D System Repeater Site with GTR 8000 expandable site subsystem. This course also presents how the GTR 8000 expandable site subsystem operates and explains the tools and methods available for troubleshooting components within the subsystem.

TARGET AUDIENCE
GTR 8000 Site Technicians

COURSE OBJECTIVES
After completing this course, the student will be able to:
• Describe the ASTRO® 25 IV&D Repeater Site with GTR 8000 Expandable Site Subsystem configurations and components.
• Identify the GCP 8000 Site Controller functions and configuration requirements.
• Describe the connections and interfaces to the GCP 8000.
• Diagnose and troubleshoot the GCP 8000.
• Describe the functionality of the GTR 8000 Expandable Site Subsystem.
• Configure and troubleshoot the ASTRO® 25 Repeater Site with GTR 8000 Expandable Site Subsystem.
• Configure and troubleshoot the Network Transport subsystem.

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

PREREQUISITES
None

COURSE OVERVIEW
The ASTRO® 25 IV&D Conventional Core with Configuration Manager course teaches advanced troubleshooting skills and best practices for the ASTRO® 25 IV&D Conventional Core with Configuration Manager. It also focuses on administrator functions and how to use the ASTRO® 25 IV&D Configuration Manager applications. A technical introduction to the MCC 7500 as used within the ASTRO® 25 IV&D Conventional Core with Configuration Manager, including some administrator functions, is also provided. Learning activities focus on gathering and analyzing system information to implement the appropriate actions that return a system to full operational status.

TARGET AUDIENCE
Master Site Technicians, System Administrators, Technical System Administrators, System Technicians, and other Application Users

COURSE OBJECTIVES
After completing the course the participant will be able to:
• Understand the key physical and functional characteristics of the ASTRO® 25 Conventional Core with Configuration Manager system.
• Perform tasks necessary to install the ASTRO® 25 Conventional Core with Configuration Manager system components.
• Perform configuration steps for the ASTRO® 25 Conventional Core with Configuration Manager system components.
• Perform configuration steps for the ASTRO® 25 Conventional Core with Configuration Manager system components.
• Understand the available maintenance tools and indicators in the ASTRO® 25 Conventional Core with Configuration Manager system.

REQUISITE KNOWLEDGE
Completion of the following courses 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
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 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 used 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
- Enable Radio Authentication in the System. Configure the KVL 4000 for Radio Authentication
- 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

COURSE OVERVIEW
The purpose of this course 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

INTELLIGENT MIDDLEWARE (IMW) OPERATIONS AND ADMINISTRATION

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
After completing this course, the student will be able to:
• Describe IMW features.
• Perform installation of IMW.
• 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
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.