# Course Titles for New Courses

## MOTOTRBO Capacity Max System Design

## MOTOTRBO Capacity Max System Deployment and Configuration

* MOTOTRBO Capacity Max Maintenance and Administration

# Current Course

## Course Objectives:

* Design a simple Capacity Max system.
* Calculate Capacity Max capacity and bandwidth using a Case Scenario and System Design tools.
* Use Radio Management Configuration Mode, to configure radios and infrastructure equipment.
* Deploy a simple Capacity Max system.
* Use System Advisor, to learn the fundamentals of troubleshooting and maintaining a Capacity Max system.
* Execute Radio Management database backup and restore.
* Describe the fundamentals of how to optimize a Capacity Max system.

## Introduction

* Welcome and Introductions
* Prerequisites- General, PCT1047, PCT1046, and PCT1032
* Course Objectives
* Documentation/Tool Based Training

## Module 1: Capacity Max Review

* Objectives:
  + Identify the hardware and software requirements for a Capacity MAX system.
  + Summarize the key call types for a Capacity MAX system.
  + Review how a Capacity MAX system processes call.
* Section 1: Hardware and Software Requirements
* Section 2: Supported Call Types
* Section 3: Capacity MAX Call Processing

## Module 2: System Planning and Design

* Objectives:
  + Develop an awareness of regulatory licensing requirements.
  + Review Motorola Solutions licensing for the Capacity MAX products
  + Use the MOTOTRBO System Designer Tool as part of the design process for a Capacity MAX system.
  + Identify the appropriate system topology.
  + Complete a basic fleetmap.
  + Describe the infrastructure device ID map.
  + Develop a channel plan.
  + Identify networking equipment requirements for a Capacity MAX system.
* Section 1: Planning Considerations
* Section 2: RF Channel Plan
* Section 3: Networking Requirements

## Module 3: Physical System Installation

* Objectives:
  + Identify the hardware and software requirements for a Capacity MAX system.
  + Locate hardware and software requirement specifications documents.
  + Describe how to connect Capacity MAX infrastructure devices.
* Section 1: Hardware Installation
* Section 2: Software Installation

## Module 4: Capacity Max IP Networking

* Objectives:
  + Describe deploying Capacity MAX on a Virtual Private Network (VPN).
  + Describe deploying Capacity MAX without VPN and using a Customized IP Plan.
  + Identify networking considerations that are common to deployments with and without a VPN.
  + Explain the IP address of a specific Capacity MAX component by using the Standard IP map.
  + Review the standard Capacity MAX Subnet Mapping scheme.
* Section 1: Deploy Capacity Max with a VPN
* Section 2: Deploy Capacity Max without a VPN and use a Customized IP Plan
* Section 3: Network Considerations Common to all Capacity Max Deployments

## Module 5: Radio Management

* Objectives:
  + Define the overall purpose of the Radio Management (RM) Application.
  + Describe the components that make up the RM Application.
  + List the Capacity MAX devices that are managed by RM.
  + Describe the concept of a Set and a Configuration.
  + Recognize how Sets are used to build Configurations.
  + Explain the methods by which devices are programmed using RM.
* Key Concepts
* Components
* Server/Client
* Configuration Client: Radio View, System View, and Job View
* Device Programmer

## Module 6: Capacity Max Configuration

* Objectives:
  + Configure Capacity MAX system parameters.
  + Configure repeaters in a Capacity MAX system.
  + Configure subscribers for operation in a Capacity Max system.
  + Configure the Capacity MAX System Server.
  + Configure VRC Gateway.
  + Configure the System Advisor Client.
  + Configure the MNIS Data Gateway.
* Section 1: Configure System Parameters
* Section 2: Configure Repeaters
* Section 3: Configure Capacity Max Subscribers
* Section 4: Configure CMSS
* Section 5: Configure VRC Gateway
* Section 6: Configure System Advisor Client
* Section 7: Configure MNIS Data Gateway

## Module 7: System Advisor

* Objectives:
  + Conduct the System status and interpret results.
  + Use the Monitor call activity in the Capacity MAX system.
  + Practice the monitor and managing events and alarm activity in the Capacity MAX system.
  + Practice remote operations on devices.
  + Perform administrative tasks within the System Advisor.
  + Apply forward System Advisor traps to SSC (Solution Support Center).
* Overview
* System Advisor Fault Management
  + Navigation
  + Network Events
  + System Alarms
  + Additional Alarm Activities
  + Network Database
  + System View
  + Call Monitoring
  + Grid View
  + Raw Webpage View
  + Performance Management
* System Advisor Security Operations
* Audit Trail Operations
* Management Options

## Module 8: Maintenance and Troubleshooting

* Objectives:
  + Perform Network Transport Maintenance and Troubleshooting.
  + Perform Backups of the Radio Management Database.
  + Perform Optimization for Capacity MAX systems.
* Section 1: Network Transport Maintenance and Troubleshooting: HPE Examples
* Section 2: Network Transport Maintenance and Troubleshooting: Juniper Examples
* Section 3: Radio Management Database Backup and Restore
* Section 4: Optimization

# MOTOTRBO Capacity Max System Design (Course 1)

## Course Objectives:

* Design a simple Capacity Max system.
* Calculate Capacity Max capacity and bandwidth using a Case Scenario and System Design tools.
* Create an equipment list, Licensing, Frequency planning, and an
* Create an IP network plan and System Layout.
* Calculate Capacity Max capacity and bandwidth using a Case Scenario and System Design tools.

## Introduction

* Welcome and Introductions
* Prerequisites- General, PCT1047, PCT1046, and PCT1032
* Course Objectives
* Documentation/Tool Based Training

## Module 1: Capacity Max Review

* Objectives
* Section 1: Hardware and Software Requirements
* Section 2: Supported Call Types
* Section 3: Capacity MAX Call Processing

## Module 2: System Planning Consideration and Design

* Objectives:
  + Develop an awareness of regulatory licensing requirements.
  + Review Motorola Solutions licensing for the Capacity MAX products
  + Be able to successfully use the MOTOTRBO System Designer Tool as part of the design process for a Capacity MAX system.
  + Identify the appropriate system topology.
  + Complete a basic fleetmap.
  + ~~Describe the infrastructure device ID map.~~

## Module 3: Frequency Planning and RFDS

* Develop a channel plan.
* Identify the RFDS components on sites.

## Module 4: Network Requirements

* Identify the networking equipment requirements for a Capacity MAX system.
* Describe deploying Capacity MAX on a Virtual Private Network (VPN).
* Describe deploying Capacity MAX without VPN and using a Customized IP Plan.
* Identify networking considerations that are common to deployments with and without a VPN.

## Module 5: RM Planning

* RM Overview and Planning.

## Module 6: Dispatcher Solution

Objectives:

## Capacity Max Dispatcher Solution Overview

* MNIS VRC Voice Solution
  + Calculation of number of VRC Licence
  + Calculation of number of talkpath licenses per VRC
  + Topology
* MNIS Data Gateway Solution
  + CAI
  + Calculate Data Gateway License
  + Topology

Third-Party Solution Examples

* SmartPTT
* TRBONET Plus
* Avtec (Scout)

## Module 7: Workshop (Design a system)

* System Design Tool Overview
  + Define practical task

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# MOTOTRBO Capacity Max System Deployment and Configuration (Course 2)

## Course Objectives:

* Deploy a simple Capacity Max system.
* Describe Capacity Max Physical System Installation.
* Deploy Router and Switch Configuration to provision Capacity Max IP Network.
* Use the Radio Management tool to demonstrate radios and infrastructure equipment configuration flow.
* Demonstrate the MNIS VRC functions and configuration.
* Demonstrate the MNIS Data gateway functions and configuration.
* Describe System Advisor configuration and functions.

## Introduction

* Welcome and Introductions
* Prerequisites- General, PCT1047, PCT1046, PCT1032, and PCT2031
* Course Objectives
* Documentation/Tool Based Training
* Lab

## Module 1: Capacity Max Pre-deployment

* Objectives
* Section 1: Brief Cap Max Overview
* Section 2: Predeployment Checklist
* Section 3: Deployment Roadmap
  + Responsibility Matrix

## Module 2: Physical System Installation

* Objectives
* Section 1: Hardware Installation
* Section 2: Software Installation
* Section 3: Upgrade Overview (versions of server, radios, etc.)
* Section 4: R56 lite

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## Module 3: Capacity Max IP Networking

* Objectives:
  + Review the IP Plan.
  + Identify networking considerations that are common to deployments with and without a VPN.
  + Explain the IP address of a specific Capacity MAX component by using the Standard IP map.
  + Review the standard Capacity MAX Subnet Mapping scheme.
  + Identify the network configuration for transport devices
* Section 1: IP Plan Review
* Section 2: Network Considerations Common to all Capacity Max Deployments
* Section 3: Deploy Network Devices
  + Review Template (network transport template)
  + Deploy Configuration
    - Review of Juniper and HP.
  + Verify IP Network

## Module 4: Radio Management

* Objectives:
  + Describe the concept of a Set and a Configuration.
  + Recognize how Sets are used to build Configurations.
  + Explain the methods by which devices are programmed using RM.
  + Deploy and configure all in one RM machine.
* Section 1: Installation and Configuration
  + Install All in one RM machine
  + Configure RM Server Utility settings
  + Configure Job processor
  + Configure Device Monitor Settings
* Section 2: RM Database
  + Review Configuration Client: Radio View, System View, and Job View
  + Describe Set and Configuration

## Module 5: Capacity Max Configuration

* Section 1: Configure System Set Parameters
* Section 2: Configure Repeaters
* Section 3: Configure Capacity Max Subscribers
* Section 4: Configure CMSS
* Section 5: Configure VRC Gateway
* Section 6: Configure System Advisor Client
* Section 7: Configure MNIS Data Gateway

## Module 6: VRC Gateway Setup

* Section 1: MNIS VRC configuration database (Talkgroup, Private, Telephone, and Recording)
* Section 2: Adding dispatch solution (AVTech, TRBONet and SmartPTT)
* Section 3: Verifying Voice Dispatcher Operation
* Section 4: Redundant VRC gateway. (gateway configuration, how it works, and what to expect)

## Module 7: MNIS Data Gateway Setup

* Section 1: MNIS Data configuration database.
* Section 2: Installing and Configure MNIS data Gateway
* Section 3: Verify MNIS data Function
* Section 4: OTAP Operation
* Section 5: Redundant MNIS gateway. (gateway configuration, how it works, and what to expect)

## Module 8: System Advisor Setup

* Objectives
  + Conduct a configuration of the System advisor.
  + Configuring system advisor user accounts.
  + Practice the monitor and managing events and alarm activity in the Capacity MAX system.
  + Perform administrative tasks within the System Advisor.
  + Apply forward System Advisor traps to SSC (Solution Support Center).
* SA Overview
* Setting up SA Client PC (Java Installation)
* Configuring System Advisor for Capacity Max
  + Operation (working right?)
* System Advisor Security Operations
* Management Options
* Configuring Northbound (NBI) Interface

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# MOTOTRBO Capacity Max Maintenance and Administration (Course 3)

## Course Objectives:

* Use System Advisor, to learn the fundamentals of troubleshooting and maintaining a Capacity Max system.
* Execute Radio Management database backup and restore.
* Describe the fundamentals of how to optimize a Capacity Max system.

## Introduction

* Welcome and Introductions
* Prerequisites- General, PCT1047, PCT1046, and PCT1032
* Course Objectives
* Documentation/Tool Based Training

## Module 1: Overview

* System Overview
* RM Overview

## Module 2: Capacity Max Administration

* Section 1: Adding Radios to the system
* Section 2: Adding Talk Groups
* Section 3: Modifying Frequency Plans
* Section 4: Adding a new site
* Section 5: Adding a new repeater
* Section 6: Adding a console dispatcher
* Section 7: Configuring Features? (How far to take it?)

## Module 3: System Monitoring and Reporting

* Overview
* System Advisor Fault Management
  + Navigation
  + Network Events
  + System Alarms
  + Additional Alarm Activities
  + Network Database
  + System View
  + Call Monitoring
  + Grid View
  + Raw Webpage View
  + Performance Management
* System Advisor Security Operations
* Audit Trail Operations
* Management Options

## Module 4: Upgrading

* Prereq Upgrade Planning
* When to Upgrade (Radios, Repeaters)
* Server Upgrade
* Upgrade Checks

## Module 5: System Maintenance and Troubleshooting

* Objectives
* Section 1: Powering Up/down the server
* Section 2: Network Transport Maintenance and Troubleshooting: HPE Examples
* Section 2: Network Transport Maintenance and Troubleshooting: Juniper Examples
* Section 3: Radio Management Database Backup and Restore
  + RM Cleanup (optimization RM database, for example: remove unused firmware, etc.)
* Section 4: Optimization