Training Proposal for IMS Project

HUAWEI

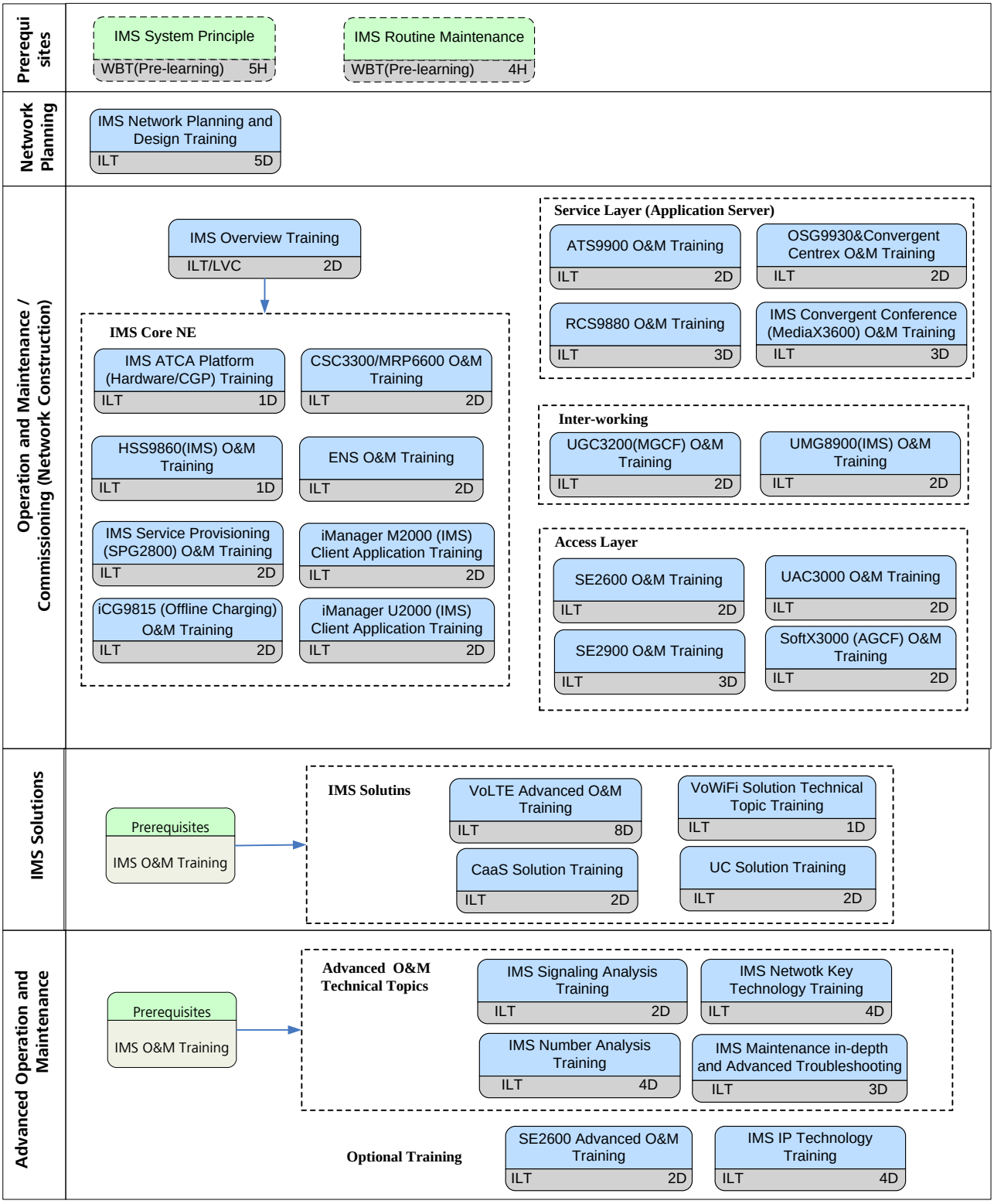
HUAWEI Learning Service

2015

CONTENTS

1 Training Solution

1.1 IMS Training Path



Remark:

- **IMS Overview Training:** suit for all technical personnel and new employee.
- **IMS Operation and Maintenance Training** (include IMS products and functional modules): suit for O&M engineers (2nd line maintenance) of IMS Core equipment maintenance and network management center.
- **IMS Solution Operation and Maintenance Training** (include convergent conference, VoLTE, etc)
- **IMS Advanced Operation and Maintenance Training** (advanced technical topics): suit for senior O&M engineers (3nd line maintenance or specialist) of IMS core equipment maintenance and network management center.
- **IMS Network Planning and Design Training:** suit for IMS network design engineers.

For further details about the training programs and courses designed, please refer the program description and course description in the training catalog.

2 Required Training Programs

IMS For this project, the whole training solution is designed into the following programs. List of Training Program(s) for IMS Project：

Training Programs	Level	Duration (working days)	Training Location	Class Size
Managers				
IMS System Overview Training	Ⅰ	0.5		6 ~ 12
Core Network Technology Evolution Training	Ⅱ	1		6 ~ 12
IMS O&M Training				
IMS Overview Training	Ⅰ	2		6 ~ 12
IMS ATCA Platform (Hardware/CGP) Training	Ⅱ	1		6 ~ 12
CSC3300/MRP6600 Operation and Maintenance Training	Ⅱ	2		6 ~ 12
HSS9860 (IMS) Operation and Maintenance Training	Ⅱ	1		6 ~ 12
ENS Operation and Maintenance Training	Ⅱ	2		6 ~ 12
IMS Service Provisioning (SPG2800) Operation and Maintenance Training	Ⅱ	2		6 ~ 12
iCG9815 (offline charging) Operation and Maintenance Training	Ⅱ	2		6 ~ 12

UGC3200 (MGCF) Operation and Maintenance Training	II	2		6 ~ 12
UMG8900(IMS) Operation and Maintenance Training	II	2		6 ~ 12
ATS9900 Operation and Maintenance Training	II	2		6 ~ 12
OSG9930&Convergent Centrex Operation and Maintenance Training	II	2		6 ~ 12
SE2600 Operation and Maintenance Training	II	2		6 ~ 12
SE2900 Operation and Maintenance Training	II	3		6 ~ 12
SoftX3000 (AGCF) Operation and Maintenance Training	II	2		6 ~ 12
UAC3000 Operation and Maintenance Training	II	2		6 ~ 12
iManager M2000 (IMS) Client Application Operation and Maintenance Training	II	2		6 ~ 12
iManager U2000 (IMS) Client Application Operation and Maintenance Training	II	2		6 ~ 12
IMS Solution Maintenance Engineers				
IMS Convergent Conference Operation and Maintenance(MediaX3600) Training	II	3		6 ~ 12
RCS9880 Operation and Maintenance Training	II	3		6 ~ 12
VoWiFi Solution (IMS) Technical Training	II	1		6
UC Solution Operation and Maintenance Training	III	2		6
CaaS Solution Operation and Maintenance Training	III	2		6
VoLTE Solution (IMS) Advanced Operation and Maintenance Training	IV	8		6 ~ 12
IMS Advanced O&M Training for System Maintenance Engineers				
IMS Signaling Analysis Training	III	2		6 ~ 12
IMS Number Analysis Training	III	4		6 ~ 12
IMS Network Key Technology Training	III	4		6 ~ 12
IMS Maintenance in-depth and Advanced Troubleshooting Training	III	3		6 ~ 12
SE2600 Advanced Operation and Maintenance Training	III	2		6 ~ 12
IMS IP Technology Training	III	4		6 ~ 12
Network Planning and Design Engineers				

IMS Network Planning and Design Training	Ⅳ	5		6 ~ 12
WBT				
IMS System Principle (WBT)	Ⅰ	5 h		No limit
IMS Routine Maintenance (WBT)	Ⅱ	4 h		No limit
VoLTE Solution Introduction (WBT)	Ⅱ	2 h		No limit
M-learning				
VoLTE Solution Introduction (M-learning)	Ⅱ	1.5 h		No limit

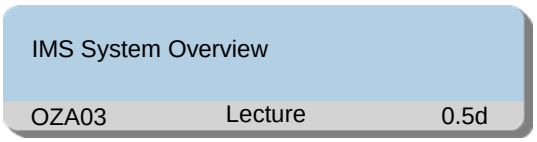
Level Description: Ⅰ: Basic Course Ⅱ: Intermediate Course Ⅲ: Advanced Course Ⅳ: Expert Course

3 IMS Training Programs

3.1 IMS Product Training

3.1.1 IMS System Overview Training

Training Path



Target Audience

Telecom Managers

Prerequisites

- A general understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will be able to:

- Describe the basic concepts, advantages, system architecture of IMS
- Describe the functions of the IMS network elements
- Describe the number and address planning in IMS network
- Describe the basic register and session flow of IMS

Training Content

OZA03 IMS System Overview

- IMS System Overview
  - IMS structure and features
  - The functions of IMS network elements
  - The interfaces and the protocols in the IMS network
  - The number and the address format which are used in IMS network
  - The basic signaling procedures
  - Huawei IMS solution introduction

Duration

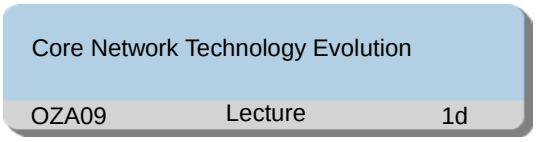
0.5 working day

Class Size

Min 6, Max 12

3.1.2 Core Network Technology Evolution Training

Training Path



Target Audience

Technical support personnel, technical specialist

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments

Objectives

On completion of this program, the participants will be able to:

- Describe the current technology application status of core network, including the basic function, networking, and application
- Describe the technology evolution and development direction of the fixed network and mobile network
- Describe the core network evolution

Training Content

OZA09 Core Network Technology Evolution

- Core Network Technology Evolution
  - Communication network overview
  - PSTN fixed telephone network evolution
  - PLMN mobile phone network evolution
  - PS mobile data network evolution
  - IMS fixed and mobile convergence networks
  - The overall evolution of the core network

Duration

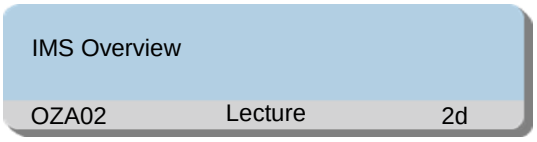
1 working day

Class Size

Min 6, Max 12

3.1.3 IMS Overview Training

Training Path



Target Audience

All technical personnel

Prerequisites

- A general understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will be able to:

- Describe the basic concepts, advantages, system architecture of IMS
- Describe the functions of the IMS network elements
- Describe the number and address planning in IMS network
- Describe the IMS register flow and session flow
- Describe the SIP protocol used in IMS domain, including SIP messages types, structure
- Describe the SIP header fields and typical signaling flows
- Outline the key features of Huawei IMS solution in hardware system, network, services, etc

Training Content

OZA02 IMS Overview

- IMS System Overview (Engineer version)
  - IMS structure and features
  - The functions of IMS network elements
  - The interfaces and the protocols in the IMS network
  - The number and the address format which are used in IMS network
  - The basic signaling procedures
  - Huawei IMS solution introduction
- IMS Basic Signaling Procedure
  - The typical procedures in IMS system, including register and session procedure
- SIP Protocol Introduction
  - SIP protocol used in IMS domain, including SIP messages types, structure
  - SIP header fields
  - SIP typical signaling flows

Duration

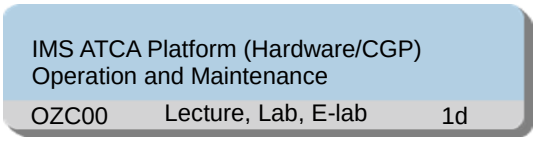
2 working days

Class Size

Min 6, Max 12

3.1.4 IMS ATCA Platform (Hardware/CGP) Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of IMS Overview training

Objectives

On completion of this program, the participants will be able to:

- Describe the hardware structure, the power system and the board functions of ATCA platform, as well as the monitor system
- Perform the basic operation and maintenance, the performance and alarm management by the CGP client

Training Content

OZC00 IMS ATCA Platform (Hardware/CGP) Operation and Maintenance

- Huawei ATCA Hardware Platform Introduction
  - IMS hardware structure
  - Power system of ATCA platform
  - Monitor system
  - Board functions of ATCA platform
- CGP Product Introduction
  - CGP product location
  - CGP interfaces
  - CGP function and features
  - CGP system structure
- IMS Core General Operation and Maintenance
  - CGP operation
  - ATCA hardware maintenance
  - Software maintenance
  - NE maintenance via CGP

Duration

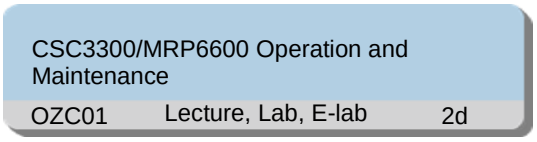
1 working day

Class Size

Min 6, Max 12

3.1.5 CSC3300/MRP6600 Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Describe the location, interfaces, main functions and basic features of CSC3300/MRP6600
- Describe the data configuration procedure and method
- Complete the service data configuration
- Complete the routine maintenance tasks of CSC3300/MRP6600

Training Content

OZC01 CSC3300/MRP6600 Operation and Maintenance

- CSC3300 Product Introduction
  - CSC3300 product location
  - CSC3300 interfaces
  - Main functions and basic features of CSC3300
- CSC3300 Data Configuration
  - Data configuration flow
  - CSC3300 basic data configuration
  - CSC3300 domain data configuration
  - CSC3300 interworking data configuration
- CSC3300 Operation and Maintenance
  - CSC3300 operation and maintenance (hardware/NE status check, IP connection status check, access network data check, charging data check, user management)
- MRP6600 Product Introduction
  - Product location, interfaces, system structure, functions and service flow of MRP6600
- MRP6600 Data Configuration
  - MRFC data configuration

- MRP6600 hardware data configuration
- MRP6600 NE/module and local data configuration
- MRP6600 resource and interworking data configuration
- MRP6600 special feature data configuration

- MRP6600 Operation and Maintenance
  - MRP6600 operation and maintenance (board and process status checking, link status and resource status maintenance, signaling tracing)

Duration

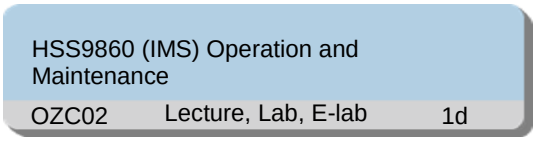
2 working days

Class Size

Min 6, Max 12

3.1.6 HSS9860 (IMS) Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Describe the location, interfaces, main functions and basic features of HSS9860 in IMS network
- Describe the data configuration procedure and method
- Complete the data configuration of HSS9860 FE
- Complete the routine maintenance tasks of HSS9860 FE

Training Content

OZC02 HSS9860 (IMS) Operation and Maintenance

- HSS9860 Product Introduction
  - Product location, interfaces, main functions and basic features of HSS9860
- HSS9860 Data Configuration
  - HSS9860 data configuration flow
  - HSS9860 basic data configuration
  - HSS9860 interworking data configuration
- HSS9860 Operation and Maintenance
  - HSS9860 operation and maintenance (office information management, user management, etc)

Duration

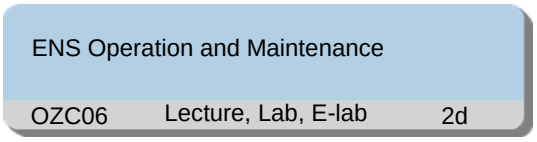
1 working day

Class Size

Min 6, Max 12

3.1.7 ENS Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Explain the working principle of ENUM and DNS server
- Describe the system architecture of ENS
- Accomplish the data configuration in ENS for ENUM and DNS function
- Perform the routine operation and maintenance tasks of ENS

Training Content

OZC06 ENS Operation and Maintenance

- DNS/ENUM Principle Introduction
  - DNS/ENUM processing flow in IMS
  - DNS function and principle
  - ENUM function and principle
  - Application of DNS/ENUM
- ENS Product Introduction
  - ENS product introduction
  - ENS network structure
  - ENS functions
  - ENS application in IMS
- ENS Data Configuration
  - ENS data management system
  - SPG introduction
  - PGW Web LMT introduction
  - Service data configuration
  - Service data provisioning

- ENS Operation and Maintenance
  - ENS routine operation and maintenance
  - Restart service(MML command)
  - Performance statistics
  - ENS data backup and restoration

Duration

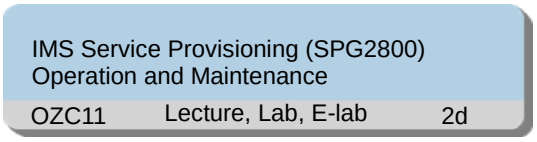
2 working days

Class Size

Min 6, Max 12

3.1.8 IMS Service Provisioning (SPG2800) Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Describe basic concepts of IMS subscription (IMPI and IMPU, iFC, Trigger Point, etc)
- Describe the service provisioning principle, procedure and operation by SPG2800
- Complete the service provisioning by SPG2800 to HSS9860
- Perform the basic service test and verification

Training Content

OZC11 IMS Service Provisioning (SPG2800) Operation and Maintenance

- SPG2800 Operation and Maintenance
  - SPG2800 system structure, main functions
  - System management, service configuration, service provisioning, batch management in the SPG portal
- IMS Subscription Data Provisioning
  - Basic concepts of IMS subscription(IMPI and IMPU, iFC, Trigger Point, etc)
  - SPG portal operation
  - SPG2800 provision flow and subscription provisioning
  - Template management
  - SPG2800 user status query

Duration

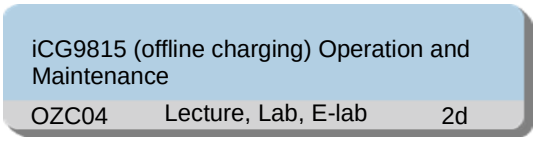
2 working days

Class Size

Min 6, Max 12

3.1.9 iCG9815 (offline charging) Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Describe charging principle of IMS
- Describe the network location of iCG9815
- Describe the system functions and specification of iCG9815
- Use iCG9815 CDR console to query the CDRs
- Perform the routine operation and maintenance tasks (daily, weekly and monthly)
- Perform the related data configuration
- Describe the data configuration flow and validity of subscription

Training Content

OZC04 iCG9815 (offline charging) Operation and Maintenance

- IMS Offline Charging Principle
  - Basic concepts of offline charging
  - SIP message analysis related to offline charging
  - CDR format
- iCG9815 Product Introduction
  - Product location, interfaces, system structure, functions and service flow of iCG9815
- iCG9815 Data Configuration
  - iCG9815 local data configuration
  - iCG9815 interworking data configuration
- iCG9815 Operation and Maintenance
  - CDR Console operation
  - iCG9815 operation and maintenance (board and process status checking, link status)

Duration

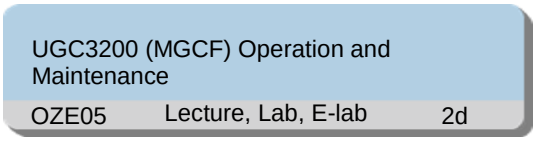
2 working days

Class Size

Min 6, Max 12

3.1.10 UGC3200 (MGCF) Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Describe product location, interfaces, function/features and system structure of UGC3200 (MGCF) Product
- Describe UGC3200 (MGCF) system processing flows, including signaling process, route process and number process
- Perform the data configuration of UGC3200 (MGCF), including local office data configuration, interconnection data configuration, signaling data configuration, charging data configuration and basic number analysis data configuration
- Execute the routine operation and maintenance tasks, including devices status check and alarm check, etc
- Perform the basic troubleshooting

Training Content

OZE05 UGC3200 (MGCF) Operation and Maintenance

- UGC3200 Product Introduction(MGCF)
  - Hardware structure, main function, product location and working flow of UGC3200
- UGC3200 Basic and Interworking Data Configuration(MGCF)
  - UGC3200(MGCF) NE/module and local data configuration
  - Interworking data configuration with MGW, IMS Core and the legacy network
- UGC3200 Operation and Maintenance(MGCF)
  - UGC3200 operation and maintenance (hardware/NE status check, IP connection status check, interconnection data check, charging data check)

Duration

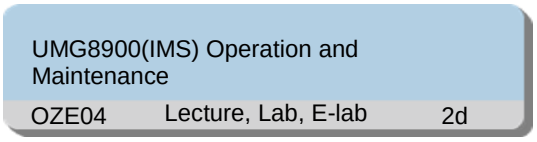
2 working days

Class Size

Min 6, Max 12

3.1.11 UMG8900(IMS) Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and UGC3200(MGCF) Operation and Maintenance Training

Objectives

On completion of this program, the participants will be able to:

- Describe the network topology, services, functions, system structure, board functions, board indicators, networking, applications and technical specifications of UMG8900
- Outline the service data configuration steps of UMG8900
- Perform the common service data configuration
- Perform the routine operation and maintenance of UMG8900 (database backup, alarm management, device management, protocol tracing, service management)

Training Content

OZE04 UMG8900(IMS) Operation and Maintenance

- UMG8900(IMS) Hardware Introduction
  - System functions of UMG8900
  - UMG8900 hardware structure
  - Function, indicators, ports and working mode of each board
- UMG8900(IMS) Data Configuration
  - MGW and H248 interface data configuration
  - IP bearer data configuration
  - Trunk data(interworking data) configuration to MSC and PSTN
  - Signaling data configuration
- UMG8900(IMS) Operation and Maintenance
  - UMG8900 OMU principle
  - UMG8900 client operation
  - UMG8900 routine maintenance task

Duration

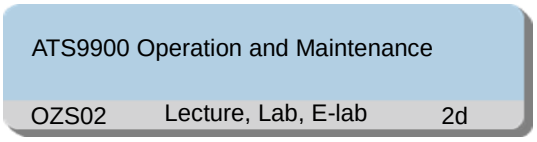
2 working days

Class Size

Min 6, Max 12

3.1.12 ATS9900 Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Describe the location, interfaces, main functions and basic features of ATS9900
- Describe the data configuration procedure and method
- Complete ATS9900 number analysis configuration
- Complete ATS9900 interworking data configuration
- List the major services supported by ATS9900
- Perform the service test and verification
- Complete the routine maintenance tasks

Training Content

OZS02 ATS9900 Operation and Maintenance

- ATS9900 Product Introduction
  - Product location, interfaces, main functions and basic features of ATS990
- ATS9900 Basic Data Configuration
  - ATS9900 hardware data configuration
  - ATS9900 NE and module data configuration
  - Number analysis configuration of ATS9900
  - ATS9900 interworking data configuration
- ATS9900 Service Provisioning
  - Service definition
  - Service provisioning steps of ATS9900
  - Examples of the ATS9900 service provisioning

Duration

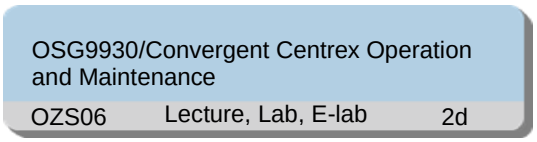
2 working days

Class Size

Min 6, Max 12

3.1.13 OSG9930＆Convergent Centrex Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and ATS9900 Operation and Maintenance Training

Objectives

On completion of this program, the participants will be able to:

- List the major Convergent Centrex services of ATS9900
- Describe the definition and signaling flow of the Centrex services
- Perform the data configuration of Convergent Centrex
- Perform the Centrex services provision via the SPG2800 or OSG9930
- Perform the Centrex service verification
- Perform the operation and maintenance of OSG9930 and U-Path

Training Content

OZS06 OSG9930/Convergent Centrex Operation and Maintenance

- Convergent Centrex Product Introduction
  - IMS Convergent Centrex solution (relate to ATS9900, OSG9930 and U-Path)
  - System structure, interfaces, functions and features of Convergent Centrex
- Convergent Centrex Data Configuration
  - Convergent Centrex data configuration of ATS9900
- Convergent Centrex Operation and Maintenance
  - Main services provided by Centrex
  - Basic concepts and steps of Centrex service provisioning, relate to ATS9900, SPG2800 and OSG9930
  - Centrex Service Provisioning Examples
- OSG9930＆U-Path Production Introduction
  - Networking Schemes of the OSG9930
  - Interfaces and Links of the OSG9930
  - OSG9930 Networking

- U-Path Introduction
- OSG9930 and U-Path data configuration and Introduction
  - Overview of OSG9930 Basic Data Configuration
  - ME, Module, and Local Data Configuration
  - Interworking Data Configuration
- Operation and Maintenance of the U-Path
  - U-Path Configuration
  - Common Operation and Maintenance of U-Path
  - Common Troubleshooting of U-Path

Duration

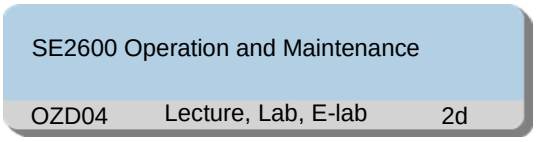
2 working days

Class Size

Min 6, Max 12

3.1.14 SE2600 Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of IMS Overview training

Objectives

On completion of this program, the participants will be able to:

- Describe related concepts of SBC, working principle of full proxy
- Describe main functions and features of SE2600 in IMS network
- Describe call flow analysis
- Describe hardware structure of SE2600
- Perform interconnection data configuration
- Perform service data configuration
- Perform maintenance tasks for SE2600
- Perform SE2600 troubleshooting

Training Content

OZD04 SE2600 Operation and Maintenance

- SE2600 Product Introduction
  - Related concepts of SBC, working principle of all proxy
  - Main functions of SE2600 in IMS
  - Call flow analysis
  - Hardware structure of SE2600
  - SE2600 product features
- SE2600 Data Configuration
  - SE2600 hardware configuration
  - SE2600 service configuration
  - Configuration example of SE2600
- SE2600 Operation and Maintenance
  - Establishment of configuration environment
  - Maintain the main functions of SE2600

- Basic maintenance commands

Duration

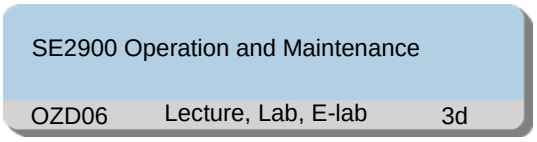
2 working days

Class Size

Min 6, Max 12

3.1.15 SE2900 Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of IMS Overview training

Objectives

On completion of this program, the participants will be able to:

- Describe related concepts of SBC, working principle of full proxy
- Describe main functions and features of SE2900 in IMS network
- Describe SBC related signaling flow
- Describe hardware structure of SE2900
- Perform interconnection data configuration
- Perform service data configuration
- Perform maintenance tasks for SE2900

Training Content

OZD06 SE2900 Operation and Maintenance

- SE2900 Product Introduction
  - Related concepts of SBC, working principle of all proxy
  - Main functions of SE2900 in IMS
  - Signaling flow analysis
  - Hardware structure of SE2900
  - SE2900 product features
- SE2900 Data Configuration
  - SE2900 hardware configuration
  - SE2900 full proxy function configuration (A-SBC and I-SBC)
  - Configuration example of SE2900
- SE2900 Operation and Maintenance
  - Establishment of configuration environment
  - Maintain the main functions of SE2900
  - Basic maintenance commands

- SE2900 Feature Introduction and Data Configuration
  - Security feature of SE2900
  - Redundancy of Core Network
  - Flexible Routing
  - SIP Header Manipulation
  - Media Bypass
  - Other features: such as QoS, CAC, ATCF/ATGW(only in A-SBC scenario)

Duration

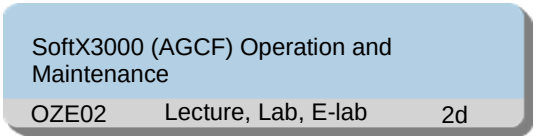
3 working days

Class Size

Min 6, Max 12

3.1.16 SoftX3000 (AGCF) Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of IMS Overview training

Objectives

On completion of this program, the participants will be able to:

- Describe the AGCF functions of SoftX3000
- Describe the SoftX3000(AGCF) hardware structure
- Explain AGCF registration process and basic call flow
- Describe the SoftX3000(AGCF) data configuration method and procedure
- Complete the data configuration and verify the system status
- Perform the routine operation and maintenance tasks

Training Content

OZE02 SoftX3000 (AGCF) Operation and Maintenance

- SoftX3000(AGCF) Product Introduction
  - AGCF product location
  - SoftX3000 hardware and system structure
  - AGCF Characteristics of SoftX3000
  - Service flow of the product
- SoftX3000(AGCF) Data Configuration
  - SoftX3000(AGCF) hardware data configuration
  - SoftX3000(AGCF) subscriber data configuration
  - SoftX3000(AGCF) interworking data configuration
- SoftX3000(AGCF) Operation and Maintenance
  - Overview of GUI
  - SoftX3000(AGCF) system menu
  - Authority operation
  - Alarm operation
  - Basic operation of database of SoftX3000(AGCF)

Duration

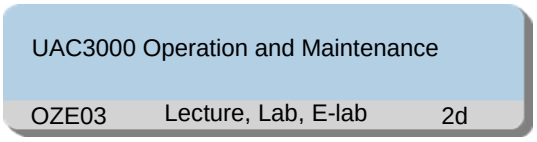
2 working days

Class Size

Min 6, Max 12

3.1.17 UAC3000 Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Describe the network location, product function and features, network structure, system structure
- Describe the signaling procession procedures of UAC3000
- Configure the hardware, network element and module data
- Configure the system data
- Configure the interworking data
- Configure the subscriber data
- Perform the routine maintenance

Training Content

OZE03 UAC3000 Operation and Maintenance

- UAC3000 Product Introduction
  - UAC3000 product location
  - Main functions and basic features of UAC3000
  - Signaling procession procedure of UAC3000
- UAC3000 Data Configuration
  - Data configuration flow
  - UAC3000 hardware, network element and module data configuration
  - UAC3000 system data configuration
  - UAC3000 interworking data configuration
  - UAC3000 subscriber data configuration
- UAC3000 Operation and Maintenance
  - UAC3000 routine operation and maintenance

Duration

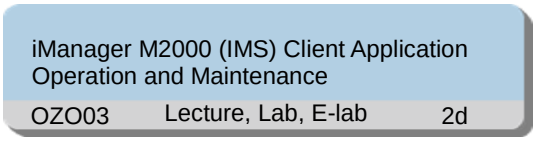
2 working days

Class Size

Min 6, Max 12

3.1.18 iManager M2000 (IMS) Client Application Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of IMS Overview training

Objectives

On completion of this program, the participants will be able to:

- Outline the product location, services and functions of iManager M2000 in IMS
- Describe the hardware configuration and software configuration of iManager M2000(IMS)
- Create accounts and set the authority for system operator
- Add IMS elements and build up the network topology
- Monitor the running status of IMS elements
- Perform alarm browsing and processing
- Perform log browsing and dumping
- Execute M2000 database backing up and restoring
- Execute the IMS routine maintenance tasks via M2000 client

Training Content

OZO03 iManager M2000 (IMS) Client Application Operation and Maintenance

- iManager M2000 (IMS) Product Introduction
  - M2000 product network structure, main features and typical configuration in IMS network
  - SNMP protocol introduction
- iManager M2000 (IMS) Client Application Operation and Maintenance
  - M2000 user right management
  - M2000 topology management for IMS network
  - Fault management
  - Performance management
  - System monitor
  - M2000 Database backup and restore
  - M2000 IMS signaling trace

- M2000 service management

Duration

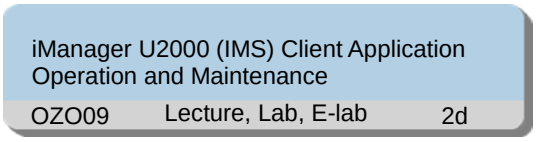
2 working days

Class Size

Min 6, Max 12

3.1.19 iManager U2000 (IMS) Client Application Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of IMS Overview training

Objectives

On completion of this program, the participants will be able to:

- Outline the product location, services and functions of iManager U2000 in IMS
- Describe the hardware configuration and software configuration of iManager U2000(IMS)
- Create accounts and set the authority for system operator
- Add IMS elements and build up the network topology
- Monitor the running status of IMS elements
- Perform alarm browsing and processing
- Perform log browsing and dumping
- Execute U2000 database backing up and restoring
- Execute the IMS routine maintenance tasks via U2000 client

Training Content

OZO09 iManager U2000 (IMS) Client Application Operation and Maintenance

- iManager U2000 (IMS) Product Introduction
  - U2000 product network structure, main features and typical configuration in IMS network
  - SNMP protocol introduction
- iManager U2000 (IMS) Client Application Operation and Maintenance
  - U2000 user right management
  - topology management for IMS network
  - Fault management
  - Performance management
  - System monitor
  - U2000 Database backup and restore
  - U2000 IMS signaling trace

- U2000 service management

Duration

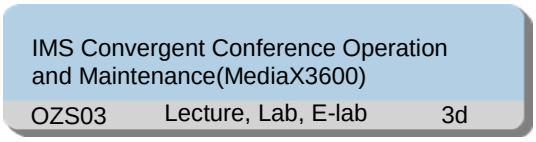
2 working days

Class Size

Min 6, Max 12

3.1.20 IMS Convergent Conference Operation and Maintenance(MediaX3600) Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training and IMS ATCA Platform (Hardware/CGP) Training

Objectives

On completion of this program, the participants will be able to:

- Explain the principles and the related concepts about multimedia conference
- Describe the typical multimedia conference working flow
- Explain the product location, networking, features and functions of MediaX3600
- Perform the local office and interconnection office data configuration
- Perform the routine operation and maintenance tasks of MediaX3600
- Describe the troubleshooting method for the typical cases

Training Content

OZS03 IMS Convergent Conference Operation and Maintenance(MediaX3600)

- IMS Convergent Conference Solution Introduction
  - Convergent Conference Solution Structure
  - Interfaces and Protocols Introduction
  - Key network element
  - Key service and function
  - Interworking with other system
  - Typical service process flow
- MediaX3600 Product Introduction
  - Product location, interfaces, functions, features, system structure and work flows of MediaX3600
- MediaX3600 Data Configuration
  - MediaX360 module data configuration
  - MediaX360 system data configuration, including charging and MRS data configuration,

etc

- MediaX3600 Service Provisioning and OAM
  - MediaX3600 operation and maintenance (check the running status, start and stop service, etc)
  - MediaX3600 Web interface operation
- IMS Convergent Conference related NE Introduction
  - Record and play server introduction
  - Interworking between MediaX3600 and MCU

Duration

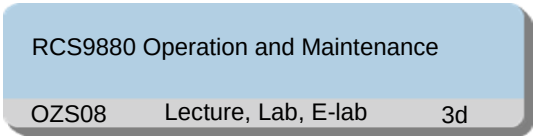
3 working days

Class Size

Min 6, Max 12

3.1.21 RCS9880 Operation and Maintenance Training

Training Path



Target Audience

Operation and maintenance personnel, NMC operator, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Overview Training

Objectives

On completion of this program, the participants will be able to:

- Describe RCS Solution, Explain the product location, networking, features and functions of RCS9880.
- Describe the typical RCS services and processing flow.
- Perform the RCS9880 data configuration.
- Perform the routine operation and maintenance tasks of RCS9880.
- Describe the troubleshooting method of RCS9880.

Training Content

OZS08 RCS9880 Operation and Maintenance

- Introduction to the RCS Solution
  - RCS Development Trend
  - RCS Solution Overview
  - Key Technologies of the RCS Solution
  - Relationships Between the RCS Solution and Other Solutions
- Service Processing Flow of Huawei RCS Solution
  - Basic Service Description
  - IM Flow and File Transfer Flow
  - Image and Video Sharing Flow
  - IP SMS Flow
  - Push Message Delivery Flow
  - NAB Flow and Presence Flow
  - Buddy Discovery Flow
  - VoIP Flow
  - Offline Charging Flow, Online Charging Flow

- RCS9880 Overview
  - RCS9880 Overview
  - BMSuite Introduction
  - RMC/ Presence/ CAB Introduction
  - Report and RBI Introduction
  - NMS
  - Typical Configuration
- RCS Service Provisioning and Registration Processes
  - Self-help service provisioning
  - Service provisioning through the SPG2800 web portal
  - Service provisioning through the BSS
  - Registration Processes
- RCS9880 Data Configuration
  - RCS9880 Data Configuration Overview
  - Connecting the RCS9880 to I2000
  - RCS9880 Interworking Data Configuration
- RCS9880 Operation and Maintenance
  - I2000 Maintenance and Operation
  - RCS9880 Maintenance Tools
- RCS Troubleshooting
  - Basic Troubleshooting Process
  - RCS Information Collection
  - RCS Problem Identification Procedure
  - Typical Cases
  - RCS Emergency Handling

Duration

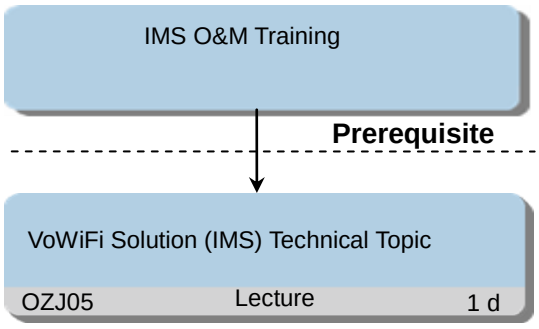
3 working days

Class Size

Min 6, Max 12

3.1.22 VoWiFi Solution (IMS) Technical Training

Training Path



Target Audience

VoWiFi Solution Operation and maintenance personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Operation and Maintenance Training

Objectives

On completion of this program, the participants will be able to:

- Describe the VoWiFi solution and networking.
- Describe VoWiFi solution signaling processing flow, including network attachment, IMS register and call flow.
- Perform the VoWiFi solution data configuration in IMS network.

Training Content

OZJ05 VoWiFi Solution (IMS) Technical Topic

- VoWiFi Solution Introduction
  - VoWiFi Solution overview
  - VoWiFi signaling processing flow
  - VoWiFi Key Technologies
  - VoWiFi network deployment
- VoWiFi Solution Data Configuration in IMS Network
  - VoWiFi Solution data configuration procedure in IMS network
  - VoWiFi Solution data configuration in IMS network

Duration

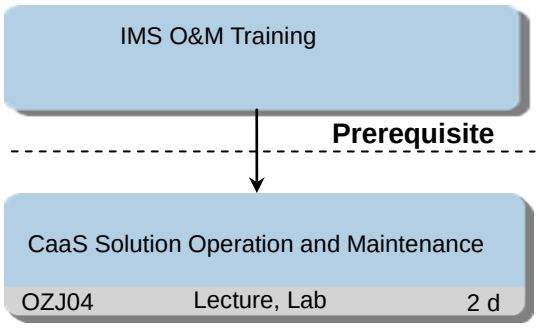
1 working day

Class Size

Min 6, max 12

3.1.23 CaaS Solution Operation and Maintenance Training

Training Path



Target Audience

CaaS Solution Operation and maintenance personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Operation and Maintenance Training, including RCS and Mediax3600

Objectives

On completion of this program, the participants will be able to:

- Explain CaaS solution, describe the product location, hardware, networking, services and features of CaaS.
- Describe the typical CaaS service and service processing flow.
- Perform the interconnection data configuration, service data configuration.
- Perform the operation and maintenance tasks of CaaS features..
- Perform the routine operation and maintenance tasks of CaaS.
- Describe the troubleshooting method for the typical cases of CaaS.

Training Content

OZJ04 CaaS Solution Operation and Maintenance Training

- CaaS Solution Introduction
  - CaaS Development Trend and Background
  - Huawei CaaS Solution
  - Key Technologies Used in Huawei CaaS Solution
- OMP9360 Product Introduction
  - OMP9360 Product Overview
  - OMP9360 Portal Introduction
  - OMP9360 Server Introduction
  - Typical Deployment

- Tropo Product Introduction
  - Tropo Product Overview
  - Deployment of Tropo application
  - O&M Network Management System
  - Typical Deployment
- CaaS Data Configuration
  - Tropo Hardware Data Configuration
  - Tropo Software Data Configuration
  - Tropo System Commissioning
  - CaaS Data Configuration

Duration

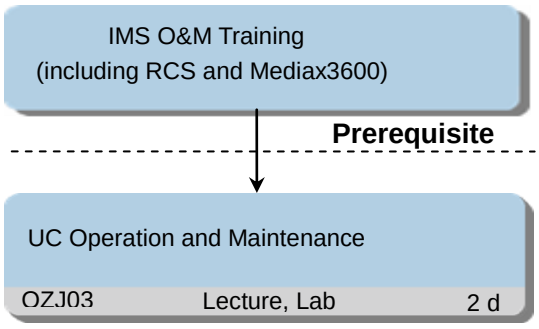
2 working days

Class Size

Min 6, max 12

3.1.24 UC Operation and Maintenance Training

Training Path



Target Audience

UC Solution Operation and maintenance personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS Operation and Maintenance Training, including RCS and Mediax3600

Objectives

On completion of this program, the participants will be able to:

- Explain UC solution, describe the product location, hardware, networking, services and features of UC.
- Describe the typical UC service and service processing flow.
- Perform the interconnection data configuration, service data configuration.
- Perform the operation and maintenance tasks of UC features..
- Perform the routine operation and maintenance tasks of UC.
- Describe the troubleshooting method for the typical cases of UC.

Training Content

OZJ03 UC Operation and Maintenance

- UC Solution Introduction
  - UC Development Trend and Background
  - Huawei UC Solution
  - Key Technologies Used in Huawei UC Solution
- UC Service Processing Flow
  - Voice Service Processing Flow
  - PGM Service Processing Flow
  - Conference Service Processing Flow
- UPortal2800 Product Introduction

- Introduction to the UPortal2800
- Deployment of UPortal2800 Processes
- Key Features of the UPortal2800

- UC Data Configuration
  - Data Configuration Objectives and Procedure
  - Configuring Core Layer and Access Layer Data
  - Configuring Business Support Layer Data
  - Configuring Security Data
  - Configuring Service Data
- Service Provisioning in UC Solution
  - UC Service Provisioning
  - Basic Operations on the SPG2800
  - Examples of UC Service Provisioning on the SPG2800

Duration

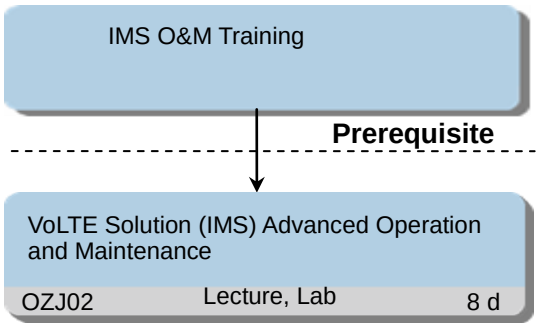
2 working days

Class Size

Min 6, max 12

3.1.25 VoLTE Solution (IMS) Advanced Operation and Maintenance Training

Training Path



Target Audience

VoLTE Operation and maintenance personnel, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments
- Successful completion of the IMS O&M training
- Familiar with network structure and signaling process flow of CS/EPC

Objectives

On completion of this program, the participants will be able to:

- Describe the network structure of VoLTE solution
- Describe the principles and networking of VoLTE basic calls
- Describe the eSRVCC principles, networking and deployment
- Describe the basic procedure of VoLTE service provisioning
- Perform the VoLTE basic call data configuration
- Perform the eSRVCC data configuration
- Describe the E2E QoS solution in VoLTE
- Perform the QoS data configuration
- Describe the principles of IP short messages in the VoLTE solution
- Describe the main flow of IP SM in the VoLTE solution
- Perform VoLTE Troubleshooting

Training Content

OZJ02 VoLTE Solution (IMS) Advanced Operation and Maintenance

- VoLTE Solution Introduction
  - VoLTE solution network structure, network element, interfaces
  - VoLTE network evolution architecture

- VoLTE Basic Signaling Process
  - Principles and networking of VoLTE basic calls
  - Typical VoLTE processes of EPC attachment, IMS register, basic call, UE access domain selection
  - Principle of anchor processing flow
  - Deployment of VoLTE basic calls
  - VoLTE basic calls configuration flow
- VoLTE eSRVCC Process Flow
  - eSRVCC principles and networking
  - Typical eSRVCC processes
  - eSRVCC deployment
- VoLTE Solution Service Provisioning
  - Network architecture for service provisioning
  - Service provisioning flow, including user model
  - Convergent HSS, ATS, ENS, UPCC service provisioning
  - iFC data configuration
- VoLTE E2E QoS
  - Related concepts of QoS
  - VoLTE E2E QoS solution introduction
  - VoLTE E2E QoS Data Configuration
- VoLTE IP-SM-GW Process Flow
  - VoLTE short message interworking solution
  - VoLTE short message process flow and principle
- VoLTE basic Data Configuration
  - VoLTE basic practice guide, including: fundamental configuration, call configuration, eSRVCC and service provisioning
- VoLTE Troubleshooting
  - VoLTE Registration Failure Troubleshooting
  - VoLTE Basic Call Failure Troubleshooting
  - VoLTE eSRVCC Failure Troubleshooting
  - VoLTE Provisioning/Announcement Failure Troubleshooting

Duration

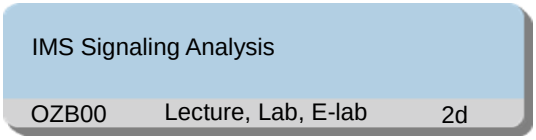
8 working days

Class Size

Min 6, Max 12

3.1.26 IMS Signaling Analysis Training

Training Path



Target Audience

Technical support personnel, senior NMC operation personnel, technical specialist

Prerequisites

- Successful completion of the IMS Operation and Maintenance Training
- At least three years experience in the operation and maintenance of telecommunication equipments
- At least one year experience in the operation and maintenance of HUAWEI IMS equipments

Objectives

On completion of this program, the participants will be able to:

- Describe the major SIP headers function and change in IMS registration and session flow
- Describe the AVPs content in the Diameter messages in IMS registration flow
- Describe the signaling routing principle of the IMS session flow
- Perform the troubleshooting of IMS registration and session

Training Content

OZB00 IMS Signaling Analysis

- IMS Registration Flow Analysis in-depth
  - IMS registration principle
  - Detailed analysis of registration, de-registration, implicit registration flow with the headers in SIP message
  - IMS typical fault analysis
- IMS Session Flow Analysis in-depth
  - Session flow overview
  - SIP header related to session route analysis
  - B2BUA principle and AS session processing
  - IMS whole signaling analysis

Duration

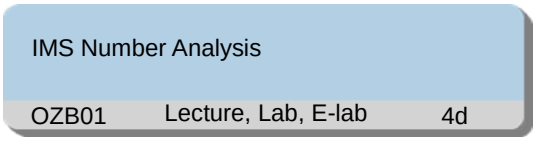
2 working days

Class Size

Min 6, Max 12

3.1.27 IMS Number Analysis Training

Training Path



Target Audience

Technical support personnel, senior NMC operation personnel, technical specialist

Prerequisites

- Successful completion of the IMS Operation and Maintenance Training
- At least three years experience in the operation and maintenance of telecommunication equipments
- At least one year experience in the operation and maintenance of HUAWEI IMS equipments

Objectives

On completion of this program, the participants will be able to:

- Perform number analysis of CSC3300 and ATS9900
- Perform number analysis of UGC3200 (MGCF)
- Describe number change function and execute related configuration in CSC3300 and ATS9900
- Execute IMS Call Barring configuration

Training Content

OZB01 IMS Number Analysis

- CSC3300/ATS9900 Call Number Analysis
  - Detailed analysis of the transformation of request-URI and other SIP headers related to calling/called party identities in IMS End-to-End session flow
  - CSC3300/ATS9900 number analysis scenario and procedure
  - CSC3300/ATS9900 number analysis data configuration
- UGC3200(MGCF) Call Number Analysis
  - Basic concepts of number analysis of UGC3200(MGCF)
  - UGC3200(MGCF) number analysis scenario and procedure
  - UGC3200(MGCF) number analysis data configuration
- IMS Number Change
  - Caller and called number change function in CSC3300, including:
  - number normalization
  - number conversion
  - Number change function in ATS9900, including:
  - basic concepts of number change
  - special called number change
  - special prefix processing data

- failure processing data

- IMS Call Barring
  - Related concepts of Call Barring(Call Barring group/black and white list/regulation Call Barring service)
  - IMS Call Barring function, including: caller and callee sides processing
  - IMS Call Barring data configuration

Duration

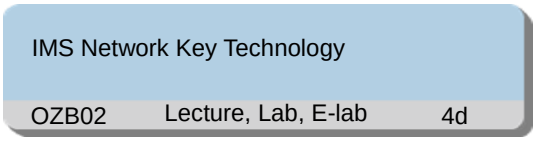
4 working days

Class Size

Min 6, Max 12

3.1.28 IMS Network Key Technology Training

Training Path



Target Audience

Technical support personnel, senior NMC operation personnel, technical specialist

Prerequisites

- Successful completion of the IMS Operation and Maintenance Training
- At least three years experience in the operation and maintenance of telecommunication equipments
- At least one year experience in the operation and maintenance of HUAWEI IMS equipments

Objectives

On completion of this program, the participants will be able to:

- Describe IMS geography redundancy solution (architecture, signaling flow and data configuration)
- Describe Business Trunk concept and perform the related data configuration
- Describe Emergency Call solution and perform the related data configuration
- Describe IMS access network solution
- Describe iFC principle

Training Content

OZB02 IMS Network Key Technology

- IMS Geography Redundancy
  - IMS geography redundancy solution (architecture, signaling flow and data configuration), including redundancy solution of CSC3300,HSS9860,ATS9900,SPG2800 and UGC3200, etc
- IMS Business Trunk
  - Business trunk solution introduction，including：TDM-PBX access, IP-PBX access and Virtual PBX
- IMS Emergency Call
  - IMS Emergency Call principle
  - Emergency Call data configuration
  - Emergency Call troubleshooting
- IMS Access Network
  - IMS access network introduction, including：xDSL/xPON/LAN access, AGCF access and Cable access
- IMS iFC

- IMS Service Profile Introduction
- iFC principle
- iFC data configuration and example

Duration

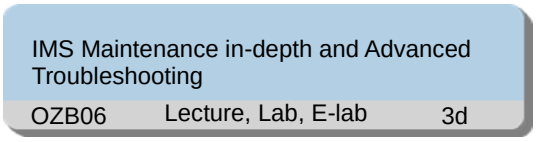
4 working days

Class Size

Min 6, Max 12

3.1.29 IMS Maintenance in-depth and Advanced Troubleshooting Training

Training Path



Target Audience

Technical support personnel, senior NMC operation personnel, technical specialist

Prerequisites

- Successful completion of the IMS Operation and Maintenance Training
- At least three years experience in the operation and maintenance of telecommunication equipments
- At least one year experience in the operation and maintenance of HUAWEI IMS equipments

Objectives

On completion of this program, the participants will be able to:

- Perform IMS advanced maintenance tasks (CGP system administration, obtain and query Log file, software patch operation and MRP6600 system administration)
- Perform database backup and restoration
- Perform IMS Performance Management operation
- Describe the general troubleshooting principle and procedure
- Perform the IMS registration and session management troubleshooting
- Perform the IMS service troubleshooting

Training Content

OZB06 IMS Maintenance in-depth and Advanced Troubleshooting

- IMS OAM in-depth
  - CGP system administration
  - CGP High Availability (HA)
  - Obtain and query Log file
  - Software patch principle
  - IMS software patch operation
- IMS Database backup and restoration
  - IMS database backup and restoration solution introduction
  - IMS database backup and restoration operation guide
- IMS Performance Management
  - Performance Management Overview
  - Measurement Task Management
  - Querying Measurement results
  - Exporting Measurement results

- IMS Advanced Troubleshooting
  - Troubleshooting method and procedure
  - IMS hardware and NE troubleshooting
  - Integrated troubleshooting case analysis
  - IMS troubleshooting practice in-lab

Duration

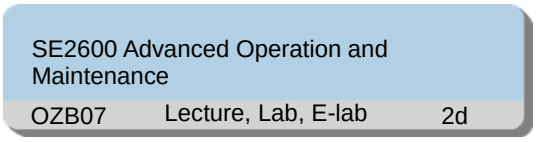
3 working days

Class Size

Min 6, Max 12

3.1.30 SE2600 Advanced Operation and Maintenance Training

Training Path



Target Audience

SE2600 Technical support personnel, senior NMC operation personnel, technical specialist

Prerequisites

- Successful completion of the SE2600 Operation and Maintenance Training
- At least three years experience in the operation and maintenance of telecommunication equipments
- At least one year experience in the operation and maintenance of HUAWEI IMS equipments

Objectives

On completion of this program, the participants will be able to:

- Configure the security and reliability feature of SE2600.
- Configure the QoS control feature of SE2600.
- Configure the protocol process features of SE2600.
- Describe the troubleshooting method of SE2600.
- Analyze and locate the typical trouble of SE2600.

Training Content

OZB07 SE2600 Advanced Operation and Maintenance

- SE2600 Advanced Features and Data Configuration
  - Security and reliability features, including IP Layer Attack Defense and Signaling Attack Defense, IPSec Tunnel Interworking, Dual Homing, Dual-System Hot Backup
  - QoS control features, including QoS and CAC
  - Protocol process features, including SIP Header Manipulation Rule, SIP protocol interworking, SIP Signaling Compression, SIP over TCP, SIP over TLS
  - Other features, including Local PDF, SIP PBX
- SE2600 Advanced Troubleshooting
  - Troubleshooting process flow
  - Service troubleshooting cases
  - System troubleshooting cases

Duration

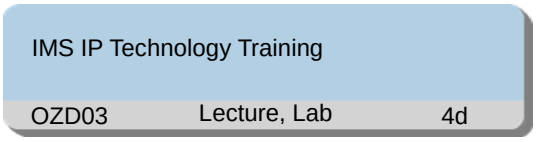
2 working days

Class Size

Min 6, Max 12

3.1.31 IMS IP Technology Training

Training Path



Target Audience

Core network commissioning engineers, Operation and maintenance engineers

Prerequisites

- At least one years experience of operation and maintenance of IMS equipments

Objectives

On completion of this program, the participants will be able to:

- Outline the structure of IP Bear network and the main protocols used
- Outline the IP fundamental knowledge and the application in IMS
- Describe the IP networking inside IMS
- Describe the hardware of DATACOM equipments used in IMS
- Perform the operation and maintenance of the DATACOM equipments used in IMS
- Describe the IP reliability solutions in IMS
- Perform the data configuration of the IP reliability solutions
- Outline the QoS requirements for IP bear network
- Apply the QoS methods in IMS
- When there happens the IP related trouble, basically complete trouble location and recover the service

Training Content

OZD03 IMS IP Technology Training

- Datacom Fundamental(IMS)
  - The fundamental IP knowledge and the application in IMS
- IMS IP Bear Network Overview
  - The structure of IP bear network and the main protocols used
- VLAN Principle and Configuration(IMS)
  - VLAN principle and the application in IMS
  - The related data configuration in IMS
- IMS internal IP Networking
  - The internal IP networking in IMS
- Datacom Equipment Hardware Introduction(IMS)
  - The hardware of DATACOM equipments used for IMS
- Datacom Equipment OAM(IMS)
  - The operation and maintenance of DATACOM equipments used in IMS

- IMS IP Reliability
  - The principle and data configuration of reliability solutions, such as SCTP multihoming, BFD and VRRP
- IMS IP QOS
  - The QoS requirement to IP bear Network
  - The QoS technical methods in IMS
- IMS IP Troubleshooting
  - The IP troubleshooting methods, steps and typical cases in IMS

Duration

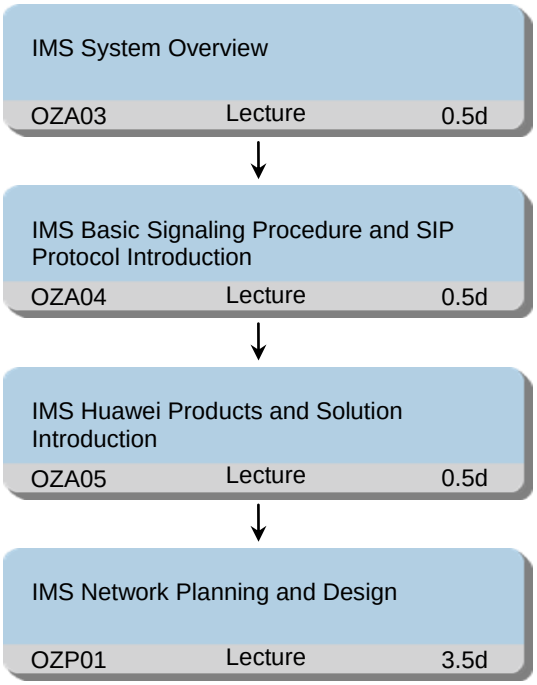
4 working days

Class Size

Min 6, Max 12

3.1.32 IMS Network Planning and Design Training

Training Path



Target Audience

Telecom Managers, IMS Network Planning and Design personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments

Objectives

On completion of this program, the participants will be able to:

- Describe the basic concepts, advantages, system architecture of IMS
- Describe the functions of the IMS network elements
- Describe the number and address planning in IMS network
- Describe the basic register and session flow of IMS
- Describe the typical register and session procedures in IMS system
- Describe the SIP protocol used in IMS domain, including SIP messages types, structure
- Describe the SIP typical signaling flows
- Describe the ATCA Hardware of IMS
- Describe the function, feature and system structure of Huawei IMS products
- Describe Huawei IMS solutions
- Describe IMS network planning and designing Overview
- Describe IMS networking structure design

- Describe IMS network IP interconnection
- Describe IMS interconnection with PSTN/PLMN
- Describe IMS access network design
- Describe IMS bandwidth calculation
- Describe IMS support system interconnection (NMS and charging system)

Training Content

OZA03 IMS System Overview

- IMS System Overview
  - IMS structure and features
  - The functions of IMS network elements
  - The interfaces and the protocols in the IMS network
  - The number and the address format which are used in IMS network
  - The basic signaling procedures
  - Huawei IMS solution introduction

OZA04 IMS Basic Signaling Procedure and SIP Protocol Introduction

- IMS Basic Signaling Procedure and SIP Protocol Introduction
  - The typical procedures in IMS system, including register and session procedure
  - SIP protocol used in IMS domain, including SIP messages types, structure
  - SIP header fields
  - SIP typical signaling flows

OZA05 IMS Huawei Products and Solution Introduction

- IMS Huawei Products and Solution Introduction
  - IMS OSTA hardware platform
  - Introduction of Huawei IMS Products Series, including Product location, Interfaces, Function and System Structure: CSC3300: Call Session Control Function; HSS9860: Home Subscriber Server; CGP: Operation and Maintenance Server; SPG2800: Service Provisioning Function; MRP6600: Multimedia Resource Function Processor; iCG9815: Charging Collection Function; UGC3200: Media Gateway Control Function; ATS9900: Telephony Application Server; MediaX3600: Conference Server; SE2600: Border Gateway Function; ENS: DNS/ENUM Server
  - Huawei IMS Solutions

OZP01 IMS Network Planning and Design

- IMS Network Planning and Designing Overview
  - Information collection
  - IMS network designing overview
- IMS Networking Structure Design
  - IMS network topology structure design
  - Interface and protocol design
  - IMS networking structure design cases
- IMS Network IP interconnection
  - IP interconnection design and route reliability design
  - VPN requirement

- Interface requirement
- QoS design
- IP interconnection design cases

- IMS interconnection with PSTN/PLMN
  - Naming and ID design
  - Registration Flow
  - Interconnection design with PSTN/PLMN
- IMS Access Network Design
  - IMS access network topology structure
  - Subscriber access types
  - IMS resource requirement
- IMS Bandwidth Calculation
  - Bandwidth calculation overview
  - IMS bandwidth calculation principle
  - IMS bandwidth calculation template introduction
- Support System interconnection
  - IMS service provisioning interconnection design
  - Charging interconnection design
  - IMS network management interconnection design

Duration

5 working days

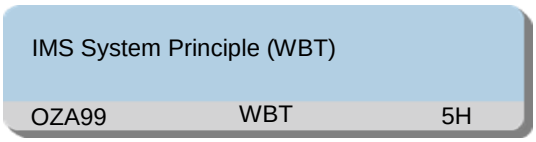
Class Size

Min 6, Max 12

3.2 WBT

3.2.1 IMS System Principle (WBT)

Training Path



Target Audience

Operation and maintenance personnel, NMC operator

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments

Objectives

On completion of this program, the participants will be able to:

- Describe the basic concept and principle of IMS
- Describe the SIP protocol stack and signaling procession flow
- Describe the Diameter protocol stack and signaling procession flow
- Describe the basic working principle of SBC
- Describe the basic working principle of DNS/ENUM
- Describe the offline charging principle of IMS

Training Content

OZA99 IMS System Principle (WBT)

- IMS System Overview(WBT)
  - History of IMS
  - IMS network architecture and function of the network elements
  - IMS user access Solution
  - IMS network features and network evolution
  - HUAWEI IMS solution introduction
- SIP Protocol Overview(WBT)
  - SIP Overview
  - Function and workflow of SIP protocol
  - Message structure and Header fields in IMS
  - SIP Application in IMS
- Diameter Protocol(WBT)
  - Diameter Protocol Overview and protocol structure
  - The procedure of the Diameter application

- IMS Charging Principle(WBT)
  - Basic concepts of Offline Charging
  - The offline charging architecture and procedure
  - SIP message analysis related to Offline Charging
  - CDR format
- SBC Principle(WBT)
  - Basic concepts and functions of the SBC
  - SBC Usage Scenarios
  - A-SBC Work Process
  - I-SBC Work Process
- IMS DNS and ENUM Principle(WBT)
  - Functions and Principles of the DNS/ENUM
  - The procedures for DNS and ENUM query
  - Application of the DNS/ENUM in IMS network

Duration

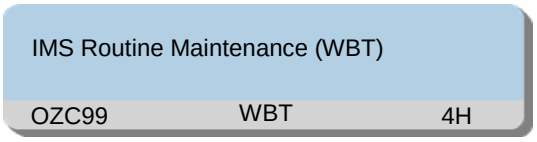
5 hours

Class Size

No limit

3.2.2 IMS Routine Maintenance (WBT)

Training Path



Target Audience

Operation and maintenance personnel, NMC operator

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments

Objectives

On completion of this program, the participants will be able to:

- Perform the common operation and maintenance of IMS
- Perform the subscriber service provision of IMS
- Complete the routine maintenance tasks of CSC3300/HSS9860
- Complete the routine maintenance tasks of ENS
- Complete the routine maintenance tasks of iCG9815
- Complete the routine maintenance tasks of SE2600

Training Content

OZC99 IMS Routine Maintenance (WBT)

- IMS General Operation and Maintenance_LMT Operation(WBT)
  - Operations on the LMT
  - Installing LMT software
  - Logging in to the LMT
  - Batch Command Operation
  - Exporting NEs Configuration File
  - Exporting the Log File
- IMS General Operation and Maintenance_OSTA Hardware Operation and Maintenance(WBT)
  - Hardware Maintenance On the LMT
  - KVM over IP
  - SOL Operations
- IMS General Operation and Maintenance_Software Operation and Maintenance(WBT)
  - Maintain the software
  - Version Management
  - License Management

- Patch Management

- IMS General Operation and Maintenance_Network Element Operation and Maintenance(WBT)
  - Maintenance for the MEs
  - Alarm Management
  - Log Management
  - Monitoring Management
  - Signaling Trace
  - Performance Management
- IMS Subscription Data Provisioning(WBT)
  - The basic concepts of IMS subscription
  - SPG introduction
  - Template management
  - Subscriber provisioning and typical configuration case
  - Query subscriber status
- ATS9900 Service Provisioning (WBT)
  - The main services provided by ATS9900
  - The ATS service provisioning
  - The ATS service operation case, including:
  - Call Forwarding
  - Calling Line Identification
  - Multi-Ringing service
  - Do Not Disturb
- CSC3300/HSS9860 Operation and Maintenance(WBT)
  - CSC3300 and HSS9860 routine maintenance, including:
  - Site Maintenance
  - IP Connection Maintenance
  - CSC3300 Access Network Maintenance
  - CSC3300 Charging Maintenance
  - Subscriber Data Management
- ENS Operation and Maintenance (WBT)
  - ENS configuration provision interface introduction
  - ENS basic data configuration step
  - ENS basic data planning
  - ENS service data configuration and provisioning case
- iCG9815 Operation and Maintenance (WBT)
  - Console Introduction
  - Log in/out operation
  - CCF customize the system setting
  - CCF operation, including CDR management, performance management, Log management, Auxiliary Upgrade
  - Debug Console Introduction

- SE2600 Operation and Maintenance (WBT)
  - Establish configuration environment
  - The Main maintenance functions Of SE2600
  - Basic Maintenance Commands

Duration

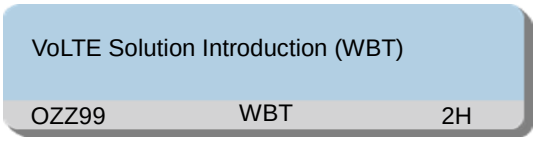
4 hours

Class Size

No limit

3.2.3 VoLTE Solution Introduction (WBT)

Training Path



Target Audience

VoLTE Operation and maintenance personnel, technical support personnel

Prerequisites

- A general understanding of telecommunication and data communication
- At least one year experience in the operation and maintenance of telecommunication equipments

Objectives

On completion of this program, the participants will be able to:

- Describe related concepts of VoLTE
- Describe the network structure and Network Evolution
- Describe the basic flows of VoLTE (registration and call)
- Describe the eSRVCC Handover Procedure

Training Content

OZZ99 VoLTE Solution Introduction (WBT)

- VoLTE Solution Introduction (WBT)
  - Related Concepts of VoLTE
  - Solution Architecture and Network Evolution
  - Basic flows of VoLTE (registration and call)
  - eSRVCC Handover Procedure

Duration

2 hours

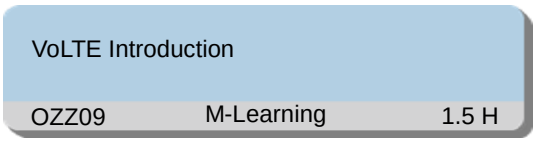
Class Size

No limit

3.3 M-Learning

3.3.1 VoLTE Introduction (M-Learning)

Training Path



Target Audience

Core network monitoring engineers

Prerequisites

- At least one year experience of operation and maintenance of Core Network equipments

Objectives

On completion of this program, the participants will be able to:

- Describe related concepts, network structure, service flow, key technology of VoLTE solution

Training Content

- VoLTE Introduction
  - Voice solution in LTE era
  - CSFB solution
  - VoLTE basic registration signaling flow
  - Terminating access domain selection (T-ADS)
  - VoLTE basic call signaling flow
  - SRVCC and eSRVCC technology
  - eSRVCC network structure and interfaces
  - ID Number involved with ATCF
  - eSRVCC handover flow
  - Anchor process flow
  - ICS access
  - IP short-message gateway (IP-SM-GW）
  - E2E QoS solution
  - VoLTE Subscribers Data Model and Service Provisioning
  - Typical network deployment of Huawei VoLTE solution

Duration

1.5 hour

Class Size

No limit