

Customer Training Catalog Course Descriptions Mobile Softswitch(GSM/UMTS)



HUAWEI
HUAWEI Learning Service
2015



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1.1 Training Course Descriptions

Mobile Softswitch(GSM/UMTS) Training Courses are designed as follows:

Code	Training Courses	Level	Duration (working days)	Training Location	Class Size
WCDMA-CS Training Courses					
OWA02	Mobile SoftSwitch Fundamental	I	1		6 ~ 12
OWG01	GSM/UMTS Softswitch Products Overview	I	1		6 ~ 12
OWG10	MSOFTX3000 (CPCI) Hardware System	I	1		6 ~ 12
OWG21	MSOFTX3000(CPCI) data configuration	II	6		6 ~ 12
OWG23	MSOFTX3000 (CPCI) Operation and Maintenance	II	3		6 ~ 12
OWG11	MSOFTX3000 (ATCA) Hardware System	II	1		6 ~ 12
OWG22	MSOFTX3000(ATCA) data configuration	II	6		6 ~ 12
OWG24	MSOFTX3000 (ATCA) Operation and Maintenance	II	3		6 ~ 12
OWG31	MSS Service Provision	IV	5		6 ~ 12
OWH10	GU UMG8900 Hardware System	I	1		6 ~ 12
OWH23	GU UMG8900 Operation and Maintenance Training	II	2		6 ~ 12
OWH22	GU UMG8900 Data Configuration Training	III	2		6 ~ 12
OWA03	GSM/UMTS Typical Signaling Flow Training	III	3		6 ~ 12
OWA04	MSS Signaling Analysis Training	III	5		6 ~ 12
OWG41	Number Translation Training	III	2		6 ~ 12
OWG53	GSM/UMTS SoftSwitch Core Network Design Training	IV	3		6 ~ 12
OWG54	GSM/UMTS SoftSwitch Core Network Evaluation and Optimization Training	IV	3		6 ~ 12
OWG62	MSC POOL Training	III	5		6 ~ 12
OWG33	MSS XPTU Configuration Training (ETSI)	II	1		6 ~ 12
OWG61	2G/3G Core Network Sharing Training	III	1		6 ~ 12
OWI71	IP fundamental	III	1		6 ~ 12
OWI72	CN internal IP Networking	III	0.5		6 ~ 12

OWI73	Datacom Equipments in CN	III	1		6 ~ 12
OWI74	CN IP Reliability and QOS	III	1		6 ~ 12
OWI75	CN IP Troubleshooting	III	1.5		6 ~ 12
OWG38	MSOFTX3000 Troubleshooting Training	IV	3		6 ~ 12
OWH36	GU UMG8900 Troubleshooting Training	IV	2		6 ~ 12
OWG77	AoIP Training	III	2		6 ~ 12
OWG78	MSS Common Emergency Operation Training	III	2		2 ~ 6
OWG86	CSFB Training	III	2		6 ~ 12
OWG63	eSRVCC feature	III	0.5		6 ~ 12
OWG64	mAGCF feature	III	0.5		6 ~ 12
OWG66	VoLTE Solution (CS) Advanced Operation and Maintenance Training	IV	2		6 ~ 12
GSM-R Training Courses					
OMH20	GTSOFTX3000 Hardware System	II	0.5		6 ~ 12
OMH22	GTSOFTX3000 Data Configuration	II	6		6 ~ 12
OMH21	GTSOFTX3000 Operation and Maintenance	II	3.5		6 ~ 12
OMH30	GSM-R UMG8900 Hardware System	II	1		6 ~ 12
OMH31	GSM-R UMG8900 Operation and Maintenance	II	2		6 ~ 12
OMH32	GSM-R UMG8900 Data Configuration	II	2		6 ~ 12
OMH01	GSM-R Overview	I	0.5		6 ~ 12
OMH40	GSM-R Feature Training	II	4.5		6 ~ 12
UGC Training Courses					
OZC10	OMS2600 (UGC) Operation and Maintenance	I	1		6 ~ 12
OZE08	UGC3200(CGO) Operation and Maintenance	II	4		6 ~ 12
OZE04	UMG8900(CGO) Operation and Maintenance	II	2		6 ~ 12
OZO05	iManager NMS (CGO) Operation and Maintenance	I	1		6 ~ 12
SmartCare Training Courses					
OSE01	SEQ Analyst and Probe Administrator Training	II	2		6 ~ 12
OSE02	SmartCare Voice Service Quality Improvement Training	IV	2		6 ~ 12

OSE03	SmartCare IMS Service Quality Improvement Training	IV	2		6 ~ 12
WBT Training Courses					
OWG79	MSS Signaling Analysis(WBT)	II	2.5h		No limit
OWG80	GSM and UMTS Softswitch Core Network Principle(WBT)	II	0.5h		No limit
OWG81	MSC POOL Principle(WBT)	II	1h		No limit
OWG82	UMG8900 System Overview(WBT)	II	1h		No limit
OWG83	MSOFTX3000(ATCA) System and Principle(WBT)	II	2h		No limit
OWG84	GU CS Core Network Design Overview(WBT)	II	0.5h		No limit
OWG85	AoIP Networking and Principle(WBT)	II	0.5h		No limit
OWG88	CSFB Solution Introduction(WBT)	III	1h		No limit
M-Learning Training Courses					
OSE12	CSFB	I	1 h		No limit

1.2 WCDMA-CS Training Course Descriptions

1.2.1 OWA02 Mobile SoftSwitch Fundamental



Objectives

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

- Describe architecture of UMTS R4 system
- Describe interfaces in UMTS R4
- Describe protocols in Circuit Switch domain of R4
- Describe call procedure in Circuit Switch domain of R4
- Describe Features of Core Network

Target Audience

All Technical and non-Technical Personnel

Prerequisites

- None

Content

- Architecture of UMTS R4 system
- Interfaces in UMTS R4
- Protocols in Circuit Switch domain of R4
- Call procedure in Circuit Switch domain of R4
- Features of Core Network

Training Methods

Lectures, LVC

Duration

1 working day

Class Size

Min 6, max 12

1.2.2 OWG01 GSM/UMTS Softswitch Products Overview



Objectives

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

- Describe system structure of MSOFTX3000 and UMG8900
- Describe functions and services provided by MSOFTX3000 and UMG8900
- Describe typical networking and application of MSOFTX3000 and UMG8900

Target Audience

All Technical and non-Technical Personnel

Prerequisites

- A basic knowledge of mobile communication

Content

- MSOFTX3000 introduction
- System structure of MSOFTX3000

- Functions and services provided by MSOFTX3000
- Typical networking and application of MSOFTX3000
- UMG8900 introduction
- System structure of UMG8900
- Functions and services provided by UMG8900
- Typical networking and application of UMG8900

Training Methods

Lectures, LVC

Duration

1 working day

Class Size

Min 6, max 12

1.2.3 OWG10 MSOFTX3000 (CPCI) Hardware System



Objectives

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

- Describe logical structures of MSOFTX3000
- Describe the board functions of MSOFTX3000
- Describe the internal connection and cables of MSOFTX3000

Target Audience

Core network monitor engineers
Installation engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication

Content

- MSOFTX3000 system structure
- MSOFTX3000 board function
- Internal connection and cables

Training Methods

Lectures, LVC

Duration

1 working day

Class Size

Min 6, max 12

1.2.4 OWG21 MSOFTX3000(CPCI) data configuration



Objectives

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

- Describe configuration flow of local office integration
- Perform hardware configuration of MSOFTX3000
- Perform physical port configuration of MSOFTX3000
- Perform the interconnection between MSOFTX3000 and UMG8900
- Perform the local office information (SPC, MCC, MNC, MSRN) configuration
- Perform interworking configuration between MSOFTX3000 and HLR (MTP-based networking mode, M3UA-based non-peer-to-peer networking mode, M3UA-based peer-to-peer networking mode, STP-transferred networking mode)
- Perform interworking configuration between MSOFTX3000 and BSC (MTP-based networking mode, M2UA-based networking mode, M3UA-based non-peer-to-peer networking mode, Mini-A-Flex networking mode, IP-based A interface)
- Perform interworking configuration MSOFTX3000 and PSTN (networking mode based on M2UA, M3UA)
- Perform interworking configuration MSOFTX3000 and RNC (M3UA Non-Peer-to-Peer, lu-Flex, IP-Based lu Interface)
- Perform interworking configuration MSOFTX3000 and MSC Server (BICC over M3UA, SIP over SCTP)
- Verify the configuration result

Target Audience

Core network commissioning engineers

Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication
- Successful completion of "MSOFTX3000(CPCI) Hardware System Training"

Content

- Configuration flow of hardware data
- Equipment components configuration
- Physical port parameters configuration
- Clock synchronization mode configuration
- Query hardware data
- Mc interface introduction
- H.248 protocol introduction
- Data configuration based on different scenario (Single MGW, Multi-MGW IP networking, Multi-MGW TDM networking, Multi-MGW IP and TDM networking)
- Verification of configuration
- Configure the local signaling point
- Configure the mobile local office information
- Configure the MAP function
- Add the VLR configuration
- Configure the SCCP GT data
- Configure the call source data
- Configure the MSRN/HON prefixes
- Configure the MSRN/HON suffixes
- Add the mapping between MSC numbers and the MSRNs/HONs
- Verification of configuration
- Networking scenario between MSOFTX3000 and HLR (MTP-based networking mode, M3UA-based non-peer-to-peer networking mode, M3UA-based peer-to-peer networking mode, STP-transferred networking mode)
- Interconnection configuration based on different scenario

- Verification of configuration
- Networking scenario between MSOFTX3000 and BSC (MTP-based networking mode, M2UA-based networking mode, M3UA-based non-peer-to-peer networking mode, Mini-A-Flex networking mode, IP-based A interface)
- Signaling and Speech configuration to BSC based on different scenario
- Location Area configuration
- Verification of configuration
- Networking scenario between MSOFTX3000 and PSTN (networking mode based on M2UA, networking mode based on M3UA)
- Signaling and Speech configuration to PSTN based on different scenario
- Verification of configuration
- Networking scenario between MSOFTX3000 and RNC (M3UA Non-Peer-to-Peer, lu-Flex, IP-Based lu Interface)
- Signaling and Speech configuration to RNC based on different scenario
- Location Area configuration
- Verification of configuration
- Networking scenario between MSOFTX3000 and MSC Server(BICC over M3UA, SIP-I)
- Signaling and Speech configuration to MSC Server based on different scenario
- Verification of configuration
- Concepts introduction(call source, route selection source name, route selection name, call prefix)
- Basic Called Number configuration

- Basic Routing configuration
- Concepts introduction(call source, route selection source name, route selection name, call prefix)
- Basic Called Number configuration
- Basic Routing configuration
- MSOFTX3000(CPCI) Hardware Data Configuration
- MSOFTX3000(CPCI) Mc interface Data Configuration
- MSOFTX3000(CPCI) Local Office Data Configuration
- MSOFTX3000(CPCI) Interworking with HLR Data Configuration
- MSOFTX3000(CPCI) Interworking with BSC Data Configuration
- MSOFTX3000(CPCI) Interworking with PSTN-MSC Data Configuration
- MSOFTX3000(CPCI) Interworking With RNC Data Configuration
- MSOFTX3000(CPCI) Interworking with MSC Server Data Configuration
- MSOFTX3000(CPCI) Number Analysis Configuration

Training Methods

Lectures, Hands-on Exercise, E-lab

Duration

6 working days

Class Size

Min 6, max 12

1.2.5 OWG23 MSOFTX3000 (CPCI) Operation and Maintenance



Objectives

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

- Operate BAM process and manager
- Check BAM status
- Backup and restore system
- Perform alarm management (browsing alarms, querying alarms, printing alarms, dumping alarm logs)
- Perform performance management (creating performance measurement tasks, customizing performance entity, dumping the result of measurement)
- Perform iGWB operation(checking status of processes, browsing CDR, checking hard disk space, iGWB switchover)
- Query equipment status
- Query resource information
- Query the service status
- Replace board or cable

Target Audience

Core network monitor engineers

Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication
- Successful completion of "MSOFTX3000(CPCI) Hardware System Training"

Content

- BAM software structure
- BAM processes operation
- BAM manager operation
- Check BAM status
- BAM harddisk operation
- Manually backing up databases
- Checking the Automatic backup of the

database

- Restoring the SQL Server database
- Restoring the password of the SQL Server database
- System Backup
- System Recovery
- Browsing alarms
- Querying alarms
- Printing alarms
- Dump alarm logs
- Alarm box operation
- Process alarm information follow the alarm help
- Create performance measurement task
- Query performance measurement task
- Dump the result of measurement
- Customize performance entity
- iGWB system structure
- iGWB operation(Checking status of processes, browsing CDR, Checking harddisk space, iGWB switchover)
- Major alarm information related to iGWB
- Query equipment status
- Query resource information
- Perform backup
- Query the service status
- Browse alarm information
- Browse the performance task
- User authority operation
- Replace board
- Loopback operation
- Trace operation
- CDR operation
- Dialing test
- License operation
- Log operation
- List Patch
- Display patch

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- Loading patch
 - Activate patch
 - Confirm patch
 - Rollback patch

Training Methods

Lectures, Hands-on Exercise, E-lab

Duration

3 working days

Class Size

Min 6, max 12

1.2.6 OWG11 MSOFTX3000 (ATCA) Hardware System



Objectives

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

- Describe MSOFTX3000 boards and its functions
- Describe MSOFTX3000 peripherals and other components
- Describe MSOFTX3000 internal connection and external connection
- Describe logical system architecture of MSOFTX3000
- Describe the signaling processing flow, service processing flow, maintenance processing flow, alarm management flow of MSOFTX3000

Target Audience

Core network monitor engineers
Installation engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication

Content

- MSOFTX3000 system architecture
- MSOFTX3000 service processing subsystem
- MSOFTX3000 maintenance management subsystem
- MSOFTX3000 environment monitoring subsystem
- MSOFTX3000 alarm management system
- MSOFTX3000 cabinet
- MSOFTX3000 boards
- MSOFTX3000 peripherals and other Components
- MSOFTX3000 connection and Cables

Training Methods

Lectures, LVC

Duration

1 working day

Class Size

Min 6, max 12

1.2.7 OWG22 MSOFTX3000(ATCA) data configuration



Objectives

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

- Install the host software and local maintenance software after MGC and MGW hardware installation
- Describe configuration flow of local office integration
- Perform hardware configuration of MSOFTX3000
- Perform physical port configuration of MSOFTX3000
- Perform the interconnection between MSOFTX3000 and UMG8900
- Perform the local office information (SPC, MCC, MNC, MSRN) configuration
- Perform interworking configuration between MSOFTX3000 and HLR (MTP-based networking mode, M3UA-based non-peer-to-peer networking mode, M3UA-based peer-to-peer networking mode, STP-transferred networking mode)
- Perform interworking configuration between MSOFTX3000 and BSC (MTP-based networking mode, M2UA-based networking mode, M3UA-based non-peer-to-peer networking mode, Mini-A-Flex networking mode, IP-based A interface)
- Perform interworking configuration MSOFTX3000 and PSTN (networking mode based on M2UA, M3UA)
- Perform interworking configuration MSOFTX3000 and RNC (M3UA Non-Peer-to-Peer, lu-Flex, IP-Based lu Interface)
- Perform interworking configuration MSOFTX3000 and MSC Server (BICC over M3UA, SIP over SCTP)
- Verify the configuration result

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication
- Successful completion of "MSOFTX3000(ATCA) Hardware System Training"

Content

- Describe the procedure of configuration
- Perform the configuration of hardware
- Perform the configuration of module
- Describe the procedure of configuration
- Perform the configuration of hardware
- Perform the configuration of module
- Configure the local signaling point
- Configure the mobile local office information
- Configure the MAP function
- Add the VLR configuration
- Configure the SCCP GT data
- Configure the call source data
- Configure the MSRN/HON prefixes
- Configure the MSRN/HON suffixes
- Add the mapping between MSC numbers and the MSRNs/HONs
- Verification of configuration
- Mc interface introduction
- H.248 protocol introduction
- Data configuration based on different scenario (Single MGW, Multi-MGW IP networking, Multi-MGW TDM networking, Multi-MGW IP and TDM networking)
- Verification of configuration
- Networking scenario between MSOFTX3000 and HLR (MTP-based networking mode, M3UA-based non-peer-to-peer networking mode, M3UA-based peer-to-peer networking

- mode, STP-transferred networking mode)
- Interconnection configuration based on different scenario
- Verification of configuration
- Networking scenario between MSOFTX3000 and BSC (MTP-based networking mode, M2UA-based networking mode, M3UA-based non-peer-to-peer networking mode, Mini-A-Flex networking mode, IP-based A interface)
- Signaling and Speech configuration to BSC based on different scenario
- Location Area configuration
- Verification of configuration
- Networking scenario between MSOFTX3000 and PSTN (networking mode based on M2UA, networking mode based on M3UA)
- Signaling and Speech configuration to PSTN based on different scenario
- Verification of configuration
- Networking scenario between MSOFTX3000 and RNC (M3UA Non-Peer-to-Peer, lu-Flex, IP-Based lu Interface)
- Signaling and Speech configuration to RNC based on different scenario
- Location Area configuration
- Verification of configuration
- Networking scenario between MSOFTX3000 and MSC Server(BICC over M3UA, SIP-I)
- Signaling and Speech configuration to MSC Server based on different scenario
- Verification of configuration

- Concepts introduction(call source, route selection source name, route selection name, call prefix)
- Basic Called Number configuration
- Basic Routing configuration
- MSOFTX3000(ATCA) Hardware and Module Configuration
- MSOFTX3000(ATCA) Local Office Data Configuration
- MSOFTX3000(ATCA) Mc interface Data Configuration
- MSOFTX3000(ATCA) Interworking with HLR Data Configuration
- MSOFTX3000(ATCA) Interworking with BSC Data Configuration
- MSOFTX3000(ATCA) Interworking with PSTN-MSC Data Configuration
- MSOFTX3000(ATCA) Interworking With RNC Data Configuration
- MSOFTX3000(ATCA) Interworking with MSC Server Data Configuration
- MSOFTX3000(ATCA) Number Analysis Configuration

Training Methods

Lectures, Hands-on Exercise, E-lab

Duration

6 working days

Class Size

Min 6, max 12

1.2.8 OWG24 MSOFTX3000 (ATCA) Operation and Maintenance



Objectives

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

- Perform the device management
- Perform the tracing task
- Perform the alarm operation
- Querying Logs
- Perform security management
- Perform the OMU status checking
- Perform the License management
- Perform the Oracle processes starting and stopping
- Perform the system backup and recovery
- Perform the service checking
- Perform the replacing boards
- Perform the iGWB configuration and maintenance

Target Audience

Core network monitor engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication
- Successful completion of "MSOFTX3000(ATCA) Hardware System Training"

Content

- OMU Server Operation and Maintenance
- Service Operation Status Check

- Parts Replacement
- Rollback
- Describe the iGWB functions
- Describe the hardware structure of iGWB
- Describe the software structure of iGWB
- Perform the iGWB configuration
- Perform the iGWB maintenance
- Introduction to Performance Management
- Performance Management Routine Operation
- Basic KPI
- Equipment Status Check
- System Resource Check
- Data Consistency Check
- Log Management
- MSOFTX3000 Database Overview
- Database Backup and Restoration Policy
- Database Backup and Restoration Procedure
- Introduction to Alarm Management
- Alarm Collection and Management
- Alarm Handling

Training Methods

Lectures, Hands-on Exercise, E-lab

Duration

3 working days

Class Size

Min 6, max 12

1.2.9 OWG31 MSS Service Provision



Objectives

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

- Configure roaming restriction
- Configure call service, USSD service
- Change the resource of VLR
- Set authentication configuration and cipher configuration
- Configure roaming data in MSC Server
- Configure IN service in MSC Server
- Adjust the load among SS7 trunk routes
- Adjust the load among M3UA or MTP3 signaling links
- Makeup tone file
- Set announcement configuration
- Add an MSISDN number segment
- Modify a route in an office direction
- Routing configuration based on TDM and IP bearer
- Normal call configuration (MOC and MTC)
- Call barring provision
- Call failure provision
- Emergency call provision
- CLIP
- Supplementary service provision
- USSD service provision
- Location Area Provision
- Location update setting
- User data management in VLR
- 2G Authentication Setting
- 3G Authentication Setting
- Cipher Setting
- Roaming user configuration
- Roaming restriction configuration
- VLR resource management
- Module adjustment and management
- Links adjustment and management
- Circuit adjustment and management
- Routing adjustment and management
- New National Access Code adding
- Change GT data
- Make up tone file
- Upload tone file
- Configure tone file
- Set the tone file playing mode

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication
- Successful completion of "MSOFTX3000 Data Configuration" and "UMG8900 Data Configuration"

Content

- IN service trigger configuration based on different scenarios(triggered by CSI, triggered by specified called number, triggered by number segment)
- Emergency service trigger configuration
- Number change configuration when IN service trigger
- General routing(on priority, load-sharing, time) principle and configuration

Training Methods

Lectures, Hands-on Exercise

Duration

5 working days

Class Size

Min 6, max 12

1.2.10 OWH10 GU UMG8900 Hardware System



Objectives

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

- Describe UMG8900 hardware structure
- Describe UMG8900 logical architecture
- Describe UMG8900 software architecture
- Describe UMG8900 Cascading System
- Describe main boards' functions of UMG8900
- Describe Internal message processing flow

Target Audience

Core network monitor engineers
Installation engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication

Content

- UMG8900 hardware structure
- UMG8900 logical architecture
- UMG8900 software architecture
- UMG8900 cascading system
- Main boards' functions of UMG8900
- Internal message flow

Training Methods

Lectures, LVC

Duration

1 working day

Class Size

Min 6, max 12

1.2.11 OWH23 GU UMG8900 Operation and Maintenance Training



Objectives

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

- Query equipment status
- Query resource information
- Operate performance task
- Perform system backup and recovery
- Query the service status
- Replace the hardware boards
- Replace the cable
- UMG8900 System recovery operation
- User authority operation
- Replace board
- Loopback operation
- Trace operation
- CDR operation
- Dialing test
- License operation
- Log operation
- Recording
- Tone file makeup and upload
- UMG8900 Routine Operation and Maintenance
- UMG8900 Common Operation
- Browse alarm
- Manage alarm
- Handle alarm follow the alarm help
- Create performance tasks
- Dump performance report
- Customize performance entity
- Set alarm prompt for poor performance

Target Audience

Core network monitor engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication
- Successful completion of "GU UMG8900 Hardware System Training"

Content

- Query equipment status
- Query resource information
- Perform backup
- Query the service status
- Browse alarm information
- Browse the performance task
- UMG8900 System backup preparation
- UMG8900 System backup operation

Training Methods

Lectures, Hands-on Exercise, E-lab

Duration

2 working days

Class Size

Min 6, max 12

1.2.12 OWH22 GU UMG8900 Data Configuration Training



Objectives

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

- Perform hardware and hardware interface configuration
- Perform bearer(IP, TDM, ATM) configuration on UMG8900
- Perform UMG8900 interworking with BSC
- Perform UMG8900 interworking with MSC/PSTN
- Perform UMG8900 interworking with RNC

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication
- Successful completion of "GU UMG8900 Hardware System Training"

Content

- Configuring system time
- Configuring frames and boards
- Configuring the clock
- Configuring MGW data
- Configuring the Link
- Activating the VMGW
- UMG8900 IP bearer configuration
- UMG8900 ATM bearer configuration
- UMG8900 TDM bearer configuration
- Interworking with BSC based on different scenarios
- Interworking with MSC/PSTN based on

different networking

- Interworking with MGW based on different networking
- Detailed configuration commands and key parameters
- Interworking with MGW based on different networking
- Detailed configuration commands and key parameters
- Interworking with RNC based on different scenarios
- Protocol stack interworking with RNC
- Detailed configuration commands and key parameters
- UMG8900 Basic Data Configuration(SSM256)
- UMG8900 Basic Data Configuration(SSM32)
- UMG8900 Basic Data Configuration (SSM160)
- UMG8900 Mc Interface Configuration
- UMG8900 Bearer Data Configuration
- UMG8900 interworking with BSC-MSC-PSTN Data Configuration
- UMG8900 interworking with MGW Data Configuration
- UMG8900 interworking with RNC Data Configuration

Training Methods

Lectures, Hands-on Exercise, E-lab

Duration

2 working days

Class Size

Min 6, max 12

1.2.13 OWA03 GSM/UMTS Typical Signaling Flow Training



Objectives

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

- Describe the different types of location update
- Describe the flow procedure of location update
- Describe the data configuration of location update
- Describe the 2G\3G security architecture
- Describe the Generating quintuple
- Describe the principle for key transmission within a system and between systems
- Describe the basic call signaling flow
- Describe the signaling flow messages and associated IEs
- Describe the call related routing flow
- Describe the BICC call related data configuration
- Describe SMS function and classification
- Describe SMMO flow and messages
- Describe SMMT flow and messages
- Describe short message notification flow

Target Audience

Core network commissioning engineers
Operation and maintenance engineers
Optimization engineers

Prerequisites

- At least one year experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of mobile communication

Content

- Location update flow analysis
- Configuration related location update
- Key parameters description in location update
- Authentication and encryption flow analysis

- Configuration related authentication and encryption
- Key parameters description in authentication and encryption
- Basic call flow analysis
- Configuration related basic call
- Key parameters description in basic call
- SMS flow analysis
- Configuration related SMS
- Key parameters description in SMS
- Basic Concepts
- Location Update Procedures
- Table Lookup during Location Update
- Data Configuration
- MAP Related Signaling Flows
- GSM Authentication
- UMTS Authentication
- TMSI Reallocation
- Related Data Configuration
- Voice Services Classification
- Intra-MSC Call Flow
- Inter-MSC Call Flow
- Bearer Establishment and Release Flow
- SMS Overview
- SMMO Flow
- SMMT Flow
- Short Message Notification

Training Methods

Lectures, Hands-on Exercise

Duration

3 working days

Class Size

Min 6, max 12

1.2.14 OWA04 MSS Signaling Analysis Training



Objectives

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

- Describe BSSAP protocol stack and function
- Analysis main procedures of BSSAP(Paging, Initial MS Message, Cipher Mode Control, Assignment, Handover, Release, DTAP Message)
- Describe lu interface protocol stack and function
- Describe classification of RANAP messages
- Analysis lu connection Management, RAB assignment, SRNS Relocation, CS Domain MM, CC procedures in lu Interfaces
- Perform protocol stack and main functions of SIGTRAN
- Analysis SCTP association establishment and close flows
- Explain UA concepts (AS, SG, IPSP, Entity, Routing key)
- Perform messages analysis of SCTP, M2UA, M3UA
- Describe H248 Protocol stack and functions
- Perform message analysis of H248 based on scenario
- Describe BICC protocol stack and functions
- Analysis key parameters of BICC
- Analysis BICC message

Target Audience

Core network commissioning engineers
Operation and maintenance engineers
Optimization engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of mobile communication

and soft switch principle

Content

- SCTP concepts introduction
- SCTP functions and messages
- SCTP basic signaling flows
- SCTP Multi-Homing principles
- M3UA Overview and Basic Concepts
- M3UA Principles
- Applications of M3UA on the MSOFTX300
- M3UA concepts, messages structure and flows
- Applications of M3UA on the MSOFTX3000
- lu interface protocol stack and function
- Classification of RANAP messages
- lu connection Management, RAB assignment, SRNS Relocation
- CS Domain MM, CC procedures in lu Interfaces
- Key parameters description in RANAP messages
- BSSAP protocol stack and function
- Main procedure description of BSSAP(Paging, Initial MS Message, Cipher Mode Control, Assignment, Handover, Release, DTAP Message)
- Key parameters description in BSSAP messages
- H.248 Protocol stack and functions
- Concepts introduction (Context, Termination and Stream) in H.248
- Descriptors and commands defined by H.248 applied in Mobile Core Network
- Message analysis of H.248 based on scenario
- BICC Protocol stack and functions
- BICC call model (SN, CMN)
- Bearer establishment procedure
- Key parameter description of BICC
- BICC message analysis
- SIP application and functions

-
- Concepts of SIP
 - SIP message analysis and description

Training Methods

Lectures, Hands-on Exercise

Duration

5 working days

Class Size

Min 6, max 12

1.2.15 OWG41 Number Translation Training



Objectives

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

- Describe number translation flow
- Perform number change
- Perform failure process
- Perform call barring
- Perform typical number translation based on scenarios
- Perform general routing configuration on request of priority, load-sharing and time schedule
- Perform routing configuration based on TDM and IP bearer

Target Audience

Core network commissioning engineers
Operation and maintenance engineers
Optimization engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of mobile communication

Content

- Simplified Number Analysis
- Number Normalization Analysis
- Call Analysis
- Handover Analysis
- Call Restriction Analysis

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.16 OWG53 GSM/UMTS SoftSwitch Core Network Design Training



Objectives

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

- Describe GSM/UMTS softswitch network planning procedure and rules
- Calculate broadband signaling interfaces in core network
- Perform signaling network design
- Perform traffic network design
- Perform access network interconnection design
- Perform service network interconnection design
- Perform billing system interconnection design
- Perform EMS interconnection design

Target Audience

Core network operation and maintenance engineers

Core network design engineers

Prerequisites

- At least one year experience of core network design
- A basic knowledge of core network design

Content

- Importance of Network Design
- Overview of Network Design
- Information Collection Introduction

- Naming and Numbering
- Network Solution Design
- Signaling Network Design
- Traffic Network Design
- Access Network Interconnection Design
- EMS Interconnection design
- Billing Interconnection design
- Time Synchronization Interconnection Design
- Clock Synchronization Interconnection Design
- IP Interconnection Design
- Bandwidth Calculation Overview
- Signaling Bandwidth Calculation Principle
- Traffic Bandwidth Calculation Principle
- O&M, Billing Bandwidth Calculation Principle
- MSRN and HON Number Quantity Calculation
- Signaling Networking Design Practice
- Traffic Networking Design Practice
- Signaling IP Interconnection Design Practice
- Traffic IP Interconnection Design Practice
- 2G/3G Network Bandwidth Calculation Practice

Training Methods

Lectures, Hands-on Exercise

Duration

3 working days

Class Size

Min 6, max 12

1.2.17 OWG54 GSM/UMTS SoftSwitch Core Network Evaluation and Optimization Training



Objectives

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

- Describe procedure for evaluating resources of V/G office
- Perform evaluation and optimization of the hardware resource, logical resource, signaling resource, TC/EC resource, trunk resource, traffic resource
- Perform paging success rate analysis and optimization
- Perform SMS success rate analysis and optimization
- Perform assignment success rate analysis and optimization
- Perform handover success rate analysis and optimization
- Perform MO/MT call completion rate analysis and optimization

Target Audience

Core network operation and maintenance engineers
Optimization engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of core network optimization

Content

- Assessment and Optimization of MSOFTX3000 Capacity
- Assessment and Optimization of UMG8900 Capacity
- Assessment and Optimization of Traffic Resource

- Assessment and Optimization of Signaling Link Resource
- MSOFTX3000 ATCA Platform
- MSOFTX3000 Performance Assessment System
- MSOFTX3000 Resource Capacity Counters Classification and Definition
- MSOFTX3000 Existing Network Assessment Procedure
- Definition of Location Update Success Rate
- Analysis of Location Update Success Rate
- Operation Guide to Signaling Analysis
- Definition of Mobile Originated Call Completion Rate
- Analysis of Mobile Originated Call Completion Rate
- Definition of Mobile Terminated Call Completion Rate
- Analysis of Mobile Terminated Call Completion Rate
- Definition of Paging Success Rate
- Analysis of Paging Success Rate
- Evaluation on Assignment Success Rate
- Analysis of Assignment Failure Causes
- Summary of Analysis Conclusions
- Operation Guide to Signaling Analysis
- Evaluation on Handover Success Rate
- Analysis of Failure Causes
- Definition of Short Message Origination Success Rate
- Analysis of Short Message Origination Success Rate
- Definition of Short Message Termination Success Rate
- Analysis of Short Message Termination Success Rate
- Analysis of Call Flow

-
- Signaling Flow on the A/Iu Interface
 - Baseline of Call Delay in Each Phase
 - Overall Idea
 - Delay Analysis Before Optimization
 - Conclusion
 - Optimization Suggestions

Training Methods

Lectures, Hands-on Exercise

Duration

3 working days

Class Size

Min 6, max 12

1.2.18 OWG62 MSC POOL Training



Objectives

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

- Describe MSC Pool networking
- Describe principles related to the MSC Pool features (The load balancing of MSC Pool, Handover in MSC Pool, Disaster tolerance in MSC Pool, Subscriber migration in MSC Pool, A-Flex by the MGW, Managing A-Interface Circuits on the MGW, Charging based on Virtual MSC IDs or Location Areas)
- Describe MSC Pool configuration flow overview
- Perform MSC Pool feature configuration in MSC Server and MGW
- Perform MSC Pool configuration based on different scenarios(NNSF implemented by RNC, NNSF implemented by MGW, Restructure MSC Pool based on current network)
- Monitor MSC Pool Load in real time
- Operate performance report of the MSC Pool
- Perform migration of subscribers
- Perform MSC Pool configuration synchronization between NE and M2000
- Perform end-to-end tracing of calls on the MSC Pool
- Understand the measurement units, measurement entities, and related calculation formulas for the MSC Pool
- Understand how to analyze the operating status of networks before and after an MSC Pool reconstruction

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other

telecommunication equipments

- A basic knowledge of mobile communication

Content

- MSC Pool networking
- Principles related to the MSC Pool feature
- The load balancing of MSC Pool
- Handover in MSC Pool
- Disaster tolerance in MSC Pool
- Subscriber migration in MSC Pool
- A-Flex by the MGW
- Managing A-Interface Circuits on the MGW
- Charging based on Virtual MSC IDs or Location Areas
- MSC Pool Networking and Data collection
- MSC Pool configuration flow overview
- MSC Pool feature configuration in MSC Server and MGW
- MSC Pool configuration based on different scenarios(NNSF implemented by RNC, NNSF implemented by MGW, Restructure MSC Pool based on current network)
- Querying MSC Pool configuration
- Monitoring MSC Pool Load in Real Time
- Operate Performance Report of the MSC Pool
- Manual Migration of Subscribers
- MSC Pool configuration synchronization between NE and M2000
- End-to-end tracing of calls on the MSC Pool
- Measurement entities for MSC Pool
- Examples of MSC Pool performance measurement
- Configuration Guide for Setting up an MSC Pool in the CN
- Configuration Guide for Setting up a Pool in the AN
- Verification Results
- Managing the MSC Pool on the M2000
- MSC Pool Performance Measurement

-
- Location update internal pool
 - MO call internal pool
 - MSC within a fault, and the users location update of the home MSC
 - protocol subscriber migration
 - Authority be achieved between the port E to redirect Subscriber Migration

Training Methods

Lectures, Hands-on Exercise

Duration

5 working days

Class Size

Min 6, max 12

1.2.19 OWG33 MSS XPTU Configuration Training (ETSI)



Objectives

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

- Describe Structure of the ETSI lawful interception system
- Outline MSC Server Function in LI system
- Outline function of X1 , X2 interface in LI system
- Outline function of X3 interface in LI system
- Describe the XPTU Configuration in the MSC Server
- Perform the XPTU interworking with LIG

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments

- A basic knowledge of mobile communication

Content

- Describe structure of the ETSI lawful interception system
- Outline MSC Server function in LI system
- Outline function of X1 , X2 interface in LI system
- Outline function of X3 interface in LI system
- Describe the XPTU configuration in the MSC Server
- Perform the XPTU interworking with LIG

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.20 OWG61 2G/3G Core Network Sharing Training



Objectives

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

- Describe GSM security mechanism(authentication and encryption)
- Describe UMTS Security mechanism(authentication and encryption)
- Perform GSM security mode setting
- Perform UMTS security mode setting
- Describe GSM to UMTS inter-system handover operation
- Describe UMTS to GSM inter-system handover operation
- Describe lu interface protocol stack and function
- Describe key parameters of RANAP messages(
- lu connection Management, RAB assignment, SRNS Relocation, CS Domain MM, CC procedures in lu Interfaces)

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other

telecommunication equipments

- A basic knowledge of mobile communication

Content

- GSM Security mechanism(authentication and encryption)
- UMTS Security mechanism(authentication and encryption)
- GSM security mode setting
- UMTS security mode setting
- GSM Authentication
- UMTS Authentication
- TMSI Reallocation
- Related Data Configuration
- Handover procedure
- Handover data configuration
- Common faults and troubleshooting
- GSM to UMTS inter-system handover
- UMTS to GSM inter-system handover

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.21 OWI71 IP fundamental



Objectives

On completion of this course, 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 CN

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8900 equipments

Content

- The fundamental IP knowledge and the application in CN
- The structure of IP bear Network and the main protocols used

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.22 OWI72 CN internal IP Networking



Objectives

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

- Describe the IP networking inside CN

Target Audience

Core network commissioning engineers

Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8900 equipments

Content

- VLAN principle and the application in CN
- the related data configuration in CN
- The internal IP networking in CN, such as MSoftX3000 and UMG8900

Training Methods

Lectures, Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.23 OWI73 Datacom Equipments in CN



Objectives

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

- Describe the hardware of datacom equipments used in CN
- Perform the O&M of the datacom equipments used in CN

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8900

equipments

Content

- The hardware of datacom equipments used for CN
- The O&M of datacom equipments used in CN

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.24 OWI74 CN IP Reliability and QOS



Objectives

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

- Describe the IP reliability solutions in CN
- Perform the data configuration of the IP reliability solutions
- Outline the QOS requirements for IP bear network
- Apply the QOS methods in CN

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8900

equipments

Content

- The principle and data configuration of reliability solutions, such as SCTP multihoming, BFD, PG, Route Backup and VRRP
- The QOS requirement to IP bear Network;
- The QOS technical methods in CN

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.25 OWI75 CN IP Troubleshooting



Objectives

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

- When there happens the IP related trouble, perform basic analysis of the trouble location and recover the service

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8900

equipments

Content

- The IP troubleshooting methods, steps and typical cases in CN

Training Methods

Lectures, Hands-on Exercise

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.26 OWG38 MSOFTX3000 Troubleshooting Training



Objectives

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

- Perform tracer, CSIS of MSOFTX3000 to fault finding and locating
- Perform MSOFTX3000 signaling troubleshooting
- Perform MSOFTX3000 service troubleshooting and case analysis (Call fault, Data service fault, SMS fault, Location Update fault, announcement playing)

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of Huawei MSOFTX3000

Content

- General troubleshooting methods
- MSOFTX3000: CSIS
- UMG8900: IP Trace, Call Trace and Loopback
- Call flow
- Troubleshooting methods and notes of call fault
- Cases analysis of call fault

- System structure of wireless IN
- Mobile IN networking
- Trigger principle of IN service
- Principle of Playing Tone of IN service
- Troubleshooting methods of IN fault
- Introduction of the trunk circuit knowledge
- Introduction and reason of the state of ISUP circuit
- Troubleshooting methods for the fault of ISUP circuit and BICC circuit
- Troubleshooting methods for signaling fault
- Cases analysis for MTP, SCCP and TCAP layers fault
- Cases analysis for SCTP, M2UA and M3UA layers fault
- Location Update Flow Introduction
- Location Update Failure Processing Method
- Location Update Cases Analysis

Training Methods

Lectures, Hands-on Exercise

Duration

3 working days

Class Size

Min 6, max 12

1.2.27 OWH36 GU UMG8900 Troubleshooting Training



Objectives

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

- Perform tracer, loopback, voice recorder for fault finding and troubleshooting
- Perform signaling troubleshooting
- Perform the bearer troubleshooting

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of Huawei UMG8900

Content

- Troubleshooting methods for tone

fault(One-way Audio, Call Accompanied by Echoes and Noise) of the UMG8900

- Troubleshooting methods for bearer fault(IP, TDM and ATM) of the UMG8900
- Troubleshooting methods for signaling fault
- Cases analysis for MTP, SCCP and TCAP layers fault
- Cases analysis for SCTP, M2UA and M3UA layers fault

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.28 OWG77 AoIP Training



Objectives

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

- Outline the Modifications from AoTDM to AoIP
- Describe the function of each network element on AoIP
- Describe AoIP codec selecting policy
- Describe the difference of signaling flow between AoIP and AoTDM
- Describe the principle of QoS and IP domain on AoIP
- Configure AoIP data on MSC Server and MGW
- Analyze and handle faults related to core network AoIP
- Complete analysis and handling of common faults

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of mobile communication

Content

- Background
- Networking
- Modification from AoTDM to AoIP
- Codec selection policy
- AoIP Call Flow
- QoS Control
- IP Domain Control
- Data configuration for direct connection mode between MSC Server and BSC
- Data configuration for MGW connection mode between MSC server and BSC(M3UA forward)
- Introduction to AoIP software parameter of MSC Server
- asdfghj
- Core network AoIP troubleshooting methods
- Common fault handling

Training Methods

Lectures, Hands-on Exercise, E-lab

Duration

2 working days

Class Size

Min 6, max 12

1.2.29 OWG78 MSS Common Emergency Operation Training



Objectives

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

- Describe MSS emergency scenarios
- Recover MSOFTX3000 O&M communication
- Handle MSOFTX3000 hardware fault
- Handle the fault caused by misoperation of MSOFTX3000
- Perform fault prevention for heavy traffic during holidays
- Clear high risky alarms of MSOFTX3000
- Recover MSOFTX3000 emergency in different scenario, including C/D interface congestion, interworking failure with SCP and OCS, CPU overload, calls fail because of abnormal circuit state and so on
- Recover UMG8900 O&M communication
- Handle UMG8900 hardware fault
- Handle UMG8900 link fault
- Handle resource usage exceeds the threshold of UMG8900
- Handle bearer network fault
- Reset the device of UMG8900
- Solve the A interface, C/D interface congestion problem
- Implement the database recovery operation
- Replace WCCU board
- Replace the BAM by the EWS
- Export Content of CDR Pool
- Switch the iGWB Nodes
- Backup and recover the system configuration manually
- Replacing OMU board

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of mobile communication

Content

- MSS emergency scenarios
- MSOFTX3000 O&M communication fault
- MSOFTX3000 hardware fault
- Fault caused by misoperation of MSOFTX3000
- Fault prevention for heavy traffic during holidays
- High risky alarms of MSOFTX3000
- MSOFTX3000 emergency in different scenario, including C/D interface congestion, interworking failure with SCP and OCS, CPU overload, calls fail because of abnormal circuit state and so on
- UMG8900 O&M communication fault
- UMG8900 hardware fault
- UMG8900 link fault
- Handle resource usage exceeds the threshold of UMG8900
- Bearer network fault
- Reset the device of UMG8900
- Solve the A interface, C/D interface congestion problem
- Implement the database recovery operation
- Replace WCCU board
- Replace the BAM by the EWS
- Export Content of CDR Pool
- Switch the iGWB Nodes
- Backup and recover the system configuration manually
- Replacing OMU board

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.30 OWG86 CSFB Training



Objectives

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

- Describe the fundamental of the CSFB
- Describe the key procedures of the CSFB
- Describe the SGs interface and protocol
- Describe the network deployment of the CSFB
- Describe the main service procedure of CSFB
- Describe CSFB signaling message and main information element
- Analyze CSFB signaling message and service status
- Describe data configuration procedure of CSFB
- Perform CSFB interworking and service commissioning
- Describe measurement units and alarms about CSFB

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other

telecommunication equipments

- A basic knowledge of mobile communication

Content

- CSFB Fundamentals
- CSFB Key Procedures
- SGs Interface and Protocol
- CSFB Redundancy Solution
- Call Delay Analysis
- CSFB Network Deployment
- SGsAP Interface Protocol Overview
- CSFB Main Signaling Procedure Analysis
- Networking Overview
- Data Configuration
- System Commissioning
- Operation and Maintenance
- Configuration Example

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.31 OWG63 eSRVCC feature



Objectives

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

- Describe the feature of the service
- Perform the related data configuration

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8900 equipments

Content

- Feature overview
- Service Processing Flow
-
- Data configuration overview
- Interworking with MME
- Interworking with CSCF

Training Methods

Lectures, Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.32 OWG64 mAGCF feature



Objectives

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

- Describe the feature of the service
- Perform the related data configuration

Target Audience

Core network commissioning engineers

Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8901 equipments

Content

- Feature overview
- Service Processing Flow
-
- Data configuration overview
- mAGCF service configuration

Training Methods

Lectures, Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.33 OWG66 VoLTE Solution (CS) Advanced Operation and Maintenance Training



Objectives

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

- Describe VoLTE Solution Basic Concepts
- Describe eSRVCC Logical Architecture
- Describe eSRVCC Service Procedure
- Describe MSOFTX3000 eSRVCC Charging
- Describe MSOFTX3000 eSRVCC Codec Negotiation
- Describe MSOFTX3000 eSRVCC reconstruction methods
- Describe MSOFTX3000 eSRVCC data configuration procedures
- Perform MSOFTX3000 eSRVCC data configuration
- Describe GTPv2-C Protocol stack
- Describe function of key messages and IEs on Sv interface
- Describe MGCF Logical Architecture
- Describe MGCF voice service procedure
- Perform MSOFTX3000 MGCF data configuration

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8900 equipments
- Finish Operation and Maintenance Training of

MSOFTX3000 and UMG8900

Content

- Commercial LTE Voice Solutions
- Key Technologies Involved in VoLTE
- eSRVCC Logical Architecture
- eSRVCC Service Procedure
- eSRVCC Charging
- eSRVCC Codec Negotiation
- Reconstruction Method
- MSS Data configuration
- System Commissioning
- Operation and Maintenance
- GTPv2-C Protocol Introduce
- Key Messages and IEs Introduce
- Case Analysis
- MGCF Logical Architecture
- Interface and Protocol
- Voice Service Procedure
- MGCF Codec Negotiation
- MSS Data configuration
- System Commissioning
- Operation and Maintenance

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.3 GSM-R Training Course Descriptions

1.3.1 OMH20 GTSOFTX3000 Hardware System



Objectives

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

- Describe the MSOFTX3000 hardware structures
- Describe the MSOFTX3000 cascade structures
- Describe the function, indicators, ports and working mode of each board
- Explain the types and applications of different fibers and cables

Target Audience

GSM-R core network monitor engineers
Installation engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication

Content

- Describe the MSOFTX3000 hardware structures
- Describe the MSOFTX3000 cascade structures
- Describe the function, indicators, ports and working mode of each board
- Explain the types and applications of different fibers and cables

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.3.2 OMH22 GTSOFTX3000 Data Configuration



Objectives

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

- Describe the concept of Hardware Configuration
- Perform hardware configuration
- Know how to verify hardware configuration
- Perform the connection between GTSOFTX3000 and MGW
- Perform GTSOFTX3000 Office information configuration
- Perform data configuration between GTSOFTX3000 to HLR
- Perform data configuration between GTSOFTX3000 and BSC (M2UA based, M3UA based)
- Perform the data configuration from GTSOFTX3000 to RNC based on IP and ATM
- Perform data configuration between GTSOFTX3000 and PSTN/MSB in different mode
- Protocol stack between GTSOFTX3000 and MGW
- Configuration flow
- Configuration commands and key parameters
- Verification of configuration
- GTSOFTX3000 Office information configuration and query
- Acknowledge relative basic concepts of MAP and functions of C/D interface.
- Perform data configuration from MSOFTX3000 to HLR
- Understand the relative concepts
- Master the relationship between commands
- Perform data configuration for interworking with BSC (M2UA based)
- Understand networking solutions between MSOFTX3000 and PSTN/MSB
- Perform data configuration interconnect MSOFTX3000 with PSTN/MSB in different mode
- Describe M3UA correlative concept
- Perform the M3UA data configuration between MSOFTX3000 and MGW
- Perform the data configuration from MSOFTX3000 to RNC based on IP and ATM
- Basic concepts of number analysis
- The flow of number analysis
- Key commands and functions for number analysis tables
- Typical case for number analysis

Target Audience

GSM-R core network commissioning engineers, operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication
- Successful completion of "GTSOFTX3000 Hardware System"

Content

- Understand the concept of Hardware Configuration
- Grasp the process and method of Hardware Configuration
- Grasp the relations of the parameters in commands
- Grasp how to check the results of hardware configuration

Training Methods

Lectures, Hands-on Exercise

Duration

6 working days

Class Size

Min 6, max 12

1.3.3 OMH21 GTSOFTX3000 Operation and Maintenance



Objectives

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

- Manage equipments, for example: checking board status and version
- Manage data, for example: backup system data, executing MML commands
- Manage logs, for example: querying logs, saving logs
- Manage tracing tasks, for example: creating a tracing task, checking tracing result, saving result
- Perform the routine operation and maintenance tasks (daily, weekly and monthly)
- Operation of replace the hardware board
- Operation of change the cable
- Cautions of replacement
- Operation of system backup
- Operation of system recovery
- Cautions of backup and recovery
- BAM function
- BAM components
- Start and stop the process of BAM
- Key information and its directory of BAM
- Browsing Alarms
- Querying Alarms
- Printing Alarms
- Dump Alarm logs
- Alarm Box Operation
- Creating performance tasks
- Checking status of performance tasks
- Customized performance tasks
- Suspending performance tasks
- Delete performance tasks
- Dumping the measurement result
- Create performance tasks
- Checking status of performance tasks
- Customized performance tasks
- Dump the measurement result
- Start and stop the process of BAM
- Point out key information and its directory of BAM

Target Audience

GSM-R core network monitor engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication
- Successful completion of "GTSOFTX3000 Hardware System"

Content

- Manage equipments, for example: checking board status and version

Training Methods

Lectures, Hands-on Exercise

Duration

3.5 working days

Class Size

Min 6, max 12

1.3.4 OMH30 GSM-R UMG8900 Hardware System



Objectives

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

- Describe UMG8900 hardware structure
- Describe UMG8900 logical architecture
- Describe UMG8900 software architecture
- Describe UMG8900 Cascading System
- Describe main boards' functions of UMG8900
- Describe Internal message flow of UMG8900

Target Audience

GSM-R core network monitor engineers
Installation engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication

Content

- UMG8900 hardware structure
- UMG8900 logical architecture
- UMG8900 software architecture
- UMG8900 Cascading System
- Main boards' functions of UMG8900
- Internal message flow

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.3.5 OMH31 GSM-R UMG8900 Operation and Maintenance



Objectives

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

- Describe function of SIWF
- Configure SIWF
- Perform operation and maintenance of SIWF
- Query equipment status
- Query resource information
- Perform backup and recovery of UMG8900
- Query the service status
- Browse alarm information
- Browse the performance task

Target Audience

GSM-R core network monitor engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication
- Successful completion of "GSM-R UMG8900 Hardware System"

Content

- Function of SIWF
- Configuration of SIWF
- Operation and maintenance of SIWF
- SIWF application in GSM-R
- Query equipment status
- Query resource information
- Perform backup
- Query the service status
- Browse alarm information
- Browse the performance task
- System backup preparation
- System backup operation
- System recovery operation

Training Methods

Lectures, Hands-on Exercise

Duration

2working days

Class Size

Min 6, max 12

1.3.6 OMH32 GSM-R UMG8900 Data Configuration



Objectives

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

- Configure System Parameters
- Configure System Time
- Configure Frames and Boards
- Configure the Clock
- Configure the NMS Interface
- Configure the MGW Control Interface and SIGTRAN Interface
- Configure ATM bearer, IP bearer, TDM bearer
- Configure signaling transfer
- Configure MGW data
- Configure the link
- Perform interworking with MGW based on different networking
- Perform interworking with BSC based on different scenarios
- Perform interworking with MSC/PSTN based on different networking

Target Audience

GSM-R core network commissioning engineers, operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication
- Successful completion of "GSM-R UMG8900 Hardware System"

Content

- Configuring System Parameters
- Configuring System Time
- Configuring Frames and Boards
- Configuring the Clock
- Configuring the NMS Interface
- Configuring the MGW Control Interface and SIGTRAN Interface
- ATM bearer configuration
- IP bearer configuration
- TDM bearer configuration
- Signaling Transfer configuration
- Configuring MGW data
- Configuring the Link
- Activating the VMGW
- Interworking with BSC based on different scenarios
- Interworking with MSC/PSTN based on different networking
- Interworking with MGW based on different networking

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.3.7 OMH01 GSM-R Overview



Objectives

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

- Describe the fundamental of GSM-R
- Describe the architecture of GSM-R system
- Describe the service and function of GSM-R system

Target Audience

GSM-R core network telecommunication engineers

Prerequisites

- A basic knowledge of railway telecommunication system

Content

- Describe the fundamental of GSM-R.
- Describe the architecture of GSM-R system.
- Describe the service and function of GSM-R system.

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.3.8 OMH40 GSM-R Feature Training



Objectives

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

- Configure and verify eMLPP service
- Configure and verify USS1 service
- Configure and verify VBS service
- Configure and verify VGCS service
- Configure and verify Multiple-Engine service
- Configure and verify functional addressing
- Configure and verify call area restriction
- Configure and verify location dependent addressing service
- Configure and verify SMC integration service
- Configure and verify access matrix service
- Configure and verify break-in and force release service
- Configure and verify missed call SMS prompt service
- Configure and verify priority cell service
- Perform AC (Acknowledgement Center) server software installation and uninstallation
- Configure AC in BAM
- Operate GMS(Group Management Server) installation

Target Audience

GSM-R core network commissioning engineers

Operation and maintenance engineers

Prerequisites

- A basic knowledge of railway telecommunication system

Content

- eMLPP Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- USS1 Service Configuration, principle, service flow, service verification, troubleshooting and

case analysis

- VBS Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- VGCS Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Multiple-Engine Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Functional Addressing Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Call Area Restriction Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Location Dependent Addressing Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- SMC Integration Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Access Matrix Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Break-in and Force release Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Missed call SMS prompt Service Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Priority Cell Configuration, principle, service flow, service verification, troubleshooting and case analysis
- Functions of AC(Acknowledge Center)
- AC software installation and uninstallation
- Configuring AC in BAM
- AC operation
- GMS(Group Management Server) networking

and functions

- GMS installation

Training Methods

Lectures, Hands-on Exercise

Duration

4.5 working days

Class Size

Min 6, max 12

1.4 UGC Training Course Descriptions

1.4.1 OZC10 OMS2600 (UGC) Operation and Maintenance



Objectives

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

- Introduce the hardware structure, the power system and the board functions of ATCA platform, as well as the monitor system
- Describe function and features of OMS2600
- Perform OMS2600 hardware operation(replacing boards, checking running status)
- Perform software O&M(checking process status and so on)

Target Audience

Convergency Gateway Office monitor engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication

Content

- Introduce the hardware structure, the power system and the board functions of ATCA platform, as well as the monitor system
- Product Orientation of OMS2600
- Interfaces
- Function and Features
- System Structure
- OMS2600 Operation
- OSTA Hardware O&M
- Software O&M
- NE O&M

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.4.2 OZE08 UGC3200(CGO) Operation and Maintenance



Objectives

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

- Introduce the UGC3200 hardware structure
- Introduce the function, location and working flow of UGC3200
- Perform number analysis configuration
- Perform the local office data and the data configuration related to H248 and SIP
- Perform the interworking data with MGW, PSTN, GSM, CDMA, etc.
- Perform device and service status check
- Perform iGWB operation and maintenance

Target Audience

Convergency Gateway Office monitor engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication

Content

- Introduce the UGC3200 hardware structure

- Introduce the function, location and working flow of UGC3200
- Basic Concept and Basic call flow
- Procedure and Configuration
- Number Analysis Configuration Example
- Introduce the local office data and the data configuration related to H.248 and SIP
- Introduce the interworking data with MGW,PSTN, GSM, CDMA, etc
- Operator Guide
- Administrator Guide
- Device and Service status Check
- iGWB function introduction
- iGWB data configuration
- iGWB operation and maintenance

Training Methods

Lectures, Hands-on Exercise

Duration

4 working days

Class Size

Min 6, max 12

1.4.3 OZE04 UMG8900(CGO) Operation and Maintenance



Objectives

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

- Introduce the system functions of UMG8900
- Introduce the UMG8900 hardware structure
- Introduce the function, indicators, ports and working mode of each board
- Perform UMG8900 Mn(H248) interface configuration
- Perform UMG8900 interworking with MSC-PSTN-MGW data configuration
- Operate GUI
- Perform routine maintenance

Target Audience

Convergency Gateway Office monitor engineers
Commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication

Content

- Introduce the system functions of UMG8900
- Introduce the UMG8900 hardware structure
- Introduce the function, indicators, ports and working mode of each board
- UMG8900 Mc (H248) Interface Configuration
- UMG8900 Interworking with MSC-PSTN-MGW Data Configuration
- OMU Principle
- GUI Operation Introduction
- Routine Maintenance

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.4.4 OZO05 iManager NMS (CGO) Operation and Maintenance



Objectives

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

- Describe the NMS structure
- Perform system login
- Operate user right management
- Operate topology management
- Operate fault management
- Operate performance management
- Perform system monitor
- Backup database

Target Audience

Convergency Gateway Office monitor engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of telecommunication

Content

- Product network structure, main features and Typical Configuration in IMS

- SNMP Protocol introduction
- Northband interface
- System Login
- User Right Management
- Topology Management
- Fault Management
- Performance Management
- System Monitor
- Database Backup

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.5 SmartCare Training Course Descriptions

1.5.1 OSE01 SEQ Analyst and Probe Administrator Training



Objectives

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

- Describe position, feature, function, interface protocol and structure of SEQ Analyst
- Describe hardware structure and function of different parts of SEQ Analyst
- Describe software structure and function of different software sub-system of SEQ Analyst
- Configure server, module group, local service IP and service data of SEQ Analyst
- Monitor network
- Analysis KPIs
- Handle equipment fault
- Describe network design principles
- Describe IP address and VLAN configuration principles
- Design time synchronization
- Describe transmission and security requirements
- Describe configuration principles

Target Audience

Core network monitoring engineers

Prerequisites

- At least one year experience of operation and maintenance of CS and PS equipments

Content

- Product Description
- Application Scenarios
- Product Architecture
- Interfaces and Protocols
- Technical Specifications
- Hardware structure

- Function of different hardware parts
- Cable Connection
- IP Address and VLAN Configuration
- Time Synchronization Design
- Transmission Requirements
- Probe Networking Principle
- Probe Access Modes
- Probe Network Design Guide
- Probe Networking Principle
- Probe Access Modes
- Probe Network Design Guide
- General Configuration Procedure
- Security Configuration
- Data Collection System Interworking Configuration
- Database Synchronization Configuration
- CS Network Configuration
- PS Network Configuration
- O&M Configuration
- Service Data Configuration
- Commissioning
- General Configuration Process
- Basic Function Configuration
- Interconnection Configuration
- Configuring CS NEs
- Carrier Network Configuration
- Commissioning
- Configuring Data for Interworking with the SEQ Analyst
- Configuring Devices
- Configuring Interface Record Reporting
- Maintenance system structure
- Hardware management
- Installation management
- Software management

-
- Alarm management
 - Log management
 - Service troubleshooting
 - Query basic data
 - Query NEs to be monitored
 - Query service data
 - Data Verification
 - One-Click Information Collection
 - Routine Maintenance

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.5.2 OSE02 SmartCare Voice Service Quality Improvement Training



Objectives

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

- Describe voice signaling flow
- Describe voice service modeling method
- Describe voice KQI system
- Describe relationship between the voice KQI and each PI
- Describe SMS signaling flow
- Describe SMS service modeling method
- Describe SMS KQI system
- Describe relationship between the SMS KQI and each PI
- Perform CS network real-time monitor
- Perform Location Update, Call Service, SMS, Call Forwarding, Handover, Paging, and MAP Operation Analysis
- Perform Pingpong Handover, Short/Repeated Call, 2G/3G Interoperability, Paging Blackhole, Call Loss, General Delay, Service Analysis by Region and Number Normality Analysis
- Describe SmartCare SQM function
- Perform voice quality monitoring
- Perform voice service quality analysis
- Describe SmartCare CEM function
- Perform VVIP/VIP group monitoring
- Perform Customer/Customer group analysis
- Perform VAP/VAC/Device analysis
- Describe voice KQI analysis flow
- Detect voice KQI problems
- Assess and demarcate voice KQI problems

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other

telecommunication equipments

- A basic knowledge of mobile communication

Content

- Voice E2E signaling flow
- Voice service modeling method
- Voice KQI system
- Relationship between the voice KQI and each PI
- SMS E2E signaling flow
- SMS service modeling method
- SMS KQI system
- relationship between the SMS KQI and each PI
- Real-Time Monitoring
- CS Network Quality Analysis
- CS Network Thematic Analysis
- Record Query
- SQM Function Overview
- Voice Service Quality Monitoring
- Voice Service Quality Analysis
- CEM Overview
- VVIP/VIP Group Monitoring
- Customer/Customer Group Analysis
- VAP Analysis
- VAC Analysis
- Device Analysis
- Roaming Analysis
- Compliant Handling
- KPI Analysis(Location Update, Call Service Handover, Paging etc)
- KQI Analysis(Perceived Call Success Rate, Call Connection Delay, Call drop)
- Voice KQI System Introduction
- Voice KQI Assessment Method
- Voice KQI Optimization Method
- Case Analysis

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.5.3 OSE03 SmartCare IMS Service Quality Improvement Training



Objectives

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

- Perform IMS network performance analysis
- Perform IMS KPIs real-time Monitoring
- Perform IMS service quality analysis

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of IMS or other telecommunication equipments
- A basic knowledge of mobile communication

Content

- IMS network performance analysis
- IMS KPIs real-time Monitoring
- IMS xDR query
- IMS service quality analysis

Training Methods

Lectures, Hands-on Exercise

Duration

2 working days

Class Size

Min 6, max 12

1.6 WBT Training Course Descriptions

1.6.1 OWG79 MSS Signaling Analysis(WBT)



Objectives

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

- Describe BICC protocol stack and functions
- Describe the Bearer Independent Call Control model
- Describe BICC message structure
- Describe the similarities and differences between BICC and ISUP, and the main difference between BICC CS1 and CS2
- Describe basic BICC call procedures
- Describe the functions of SIGTRAN
- Describe SIGTRAN protocol structure, message and signaling flow
- Describe SCTP functions
- Describe the signaling message and procedures of SCTP
- Describe the functions of SIGTRAN UA layers
- Describe the procedures and implementation of M2UA
- Describe the procedures and implementation of M3UA
- Describe H248 protocol function
- Describe H248 message structure
- Describe the function of H248 commands
- Describe H248 signaling procedure

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of mobile communication and soft switch principle

Content

- Introduction of BICC
- BICC Node Model
- BICC Protocol Model
- Features of BICC Protocol
- BICC Message Structure
- Main BICC Messages
- BICC Specific Information Elements
- Call Setup Procedure
- Codec Negotiation Procedure
- Call Release Procedure
- SIGTRAN Overview
- SCTP Introduction
- SCTP Terms
- SCTP Functions
- SCTP Message Format
- SCTP Signaling Procedures
- Introduction of UA Layers
- UA Common Terminologies
- M2UA Function and Protocol Stack
- Terminologies of M2UA
- M2UASignaling Flow
- M3UA Function and Protocol Stack
- Terminologies of M3UA
- M3UA and MTP3 Mapping of Messages
- M3UA Signaling Flow
- H.248 Protocol Structure and Function
- Connection model
- Descriptors and Packages
- H.248 Message Structure
- H.248 Commands
- Signaling Procedure

Training Methods

Multi-media

Duration

2.5 hours

Class Size

No limit

1.6.2 OWG80 GSM and UMTS Softswitch Core Network Principle(WBT)



Objectives

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

- Write down the Softswitch core network structure
- Describe the Softswitch core network technical features
- Describe interfaces and protocol in softswitch
- Write down the call flow in Softswitch core network

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- All Technical and non-Technical Personnel

Content

- Softswitch Core Network Structure
- Softswitch Interface and Protocol
- Call Flow in Softswitch Core Network
- Features in Softswitch

Training Methods

Multi-media

Duration

0.5 hour

Class Size

No limit

1.6.3 OWG81 MSC POOL Principle(WBT)



Objectives

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

- Describe MSC Pool networking
- Describe principles related to the MSC Pool features (The load balancing of MSC Pool, Handover in MSC Pool, Disaster tolerance in MSC Pool, Subscriber migration in MSC Pool, A-Flex by the MGW, Managing A-Interface Circuits on the MGW, Charging based on Virtual MSC IDs or Location Areas)

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least two years experience of operation and maintenance of GSM NSS/UMTS CS or other telecommunication equipments
- A basic knowledge of mobile

Content

- MSC Pool networking
- Principles related to the MSC Pool feature
- The load balancing of MSC Pool
- Handover in MSC Pool
- Disaster tolerance in MSC Pool
- Subscriber migration in MSC Pool
- A-Flex by the MGW
- Managing A-Interface Circuits on the MGW
- Charging based on Virtual MSC IDs or Location Areas

Training Methods

Multi-media

Duration

1 hour

Class Size

No limit

1.6.4 OWG82 UMG8900 System Overview(WBT)



Objectives

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

- Describe UMG8900 product orientation
- Describe product feature
- Describe system architecture
- Describe service and networking applications

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication

Content

- UMG8900 Product Orientation
- Product Feature
- System Architecture
- Service and Networking Applications
- Technical Specification

Training Methods

Multi-media

Duration

1 hour

Class Size

No limit

1.6.5 OWG83 MSOFTX3000(ATCA) System and Principle(WBT)



Objectives

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

- Describe the orientation of MSOFTX3000 in the network
- Describe MSOFTX3000 system structure
- Describe the networking and application of MSOFTX3000
- Describe the interfaces and protocols
- Describe MSOFTX3000 physical structure
- Describe MSOFTX3000 logical system architecture
- Describe Signaling internal processing flows

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- A basic knowledge of mobile communication

Content

- MSOFTX3000 Orientation and Networking
- MSOFTX3000 Protocol Interfaces
- Supporting Services and Features
- MSOFTX3000 System Architecture
- MSOFTX3000 Service Processing Subsystem
- MSOFTX3000 Maintenance Management Subsystem
- MSOFTX3000 Environment Monitoring Subsystem
- MSOFTX3000 Alarm Management System

Training Methods

Multi-media

Duration

2 hours

Class Size

No limit

1.6.6 OWG84 GU CS Core Network Design Overview(WBT)



Objectives

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

- Describe the importance of network design
- Describe the main contents of network design

Target Audience

Core network operation and maintenance engineers

Core network design engineers

Prerequisites

- At least one year experience of core network design

Content

- Importance of network design
- Overview of network design

Training Methods

Multi-media

Duration

0.5 hour

Class Size

No limit

1.6.7 OWG85 AoIP Networking and Principle(WBT)



Objectives

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

- Outline the Modifications from AoTDM to AoIP
- Describe the function of each network element on AoIP
- Describe AoIP codec selecting policy
- Describe the signaling flow difference between AoIP and AoTDM
- Describe the principle of QoS and IP domain on AoIP

Target Audience

Core network operation and maintenance engineers

Core network design engineers

Prerequisites

- At least one year experience of core network

design

Content

- The Modifications of networking from AoTDM to AoIP
- The function of each network element on AoIP
- AoIP codec selecting policy
- The signaling flows difference between AoIP and AoTDM
- The principle of QoS and IP domain on AoIP

Training Methods

Multi-media

Duration

0.5 hour

Class Size

No limit

1.6.8 OWG88 CSFB Solution Introduction(WBT)



Objectives

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

- Describe the fundamental of the CSFB
- Describe the key procedures of the CSFB
- Describe the SGs interface and protocol
- Describe the network deployment of the CSFB
- Describe the main service procedure of CSFB
- Describe CSFB signaling message and main information element
- Analyze CSFB signaling message and service status
- Describe data configuration procedure of CSFB
- Perform CSFB interworking and service commissioning
- Describe measurement units and alarms about CSFB

Target Audience

Core network commissioning engineers
Operation and maintenance engineers

Prerequisites

- At least one year experience of operation and maintenance of MsoftX3000 and UMG8903 equipments

Content

- CSFB Fundamentals
- CSFB Key Procedures
- SGs Interface and Protocol
- CSFB Redundancy Solution
- Call Delay Analysis
- CSFB Network Deployment

Training Methods

Multi-media

Duration

1 working day

Class Size

Min 0, max 0

1.7 M-Learning Training Course Descriptions

1.7.1 OSE12 CSFB



Objectives

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

- Describe principle of CSFB

Target Audience

Core network monitoring engineers

Prerequisites

- At least one year experience of operation and maintenance of CS and PS equipments

Content

- Introduce the hardware structure, the power system and the board functions of ATCA platform, as well as the monitor system
- CSFB Networking

- CSFB Location Update Flow
- CSFB SMS MO Signaling Flow
- CSFB SMS MT Signaling Flow
- CSFB Mobile Originated Call Signaling Flow
- CSFB Mobile Terminated Call Signaling Flow
- CSFB Call Delay Analysis
- CSFB MTRR and MTRF Signaling Flow

Training Methods

M-Learning

Duration

1 hour

Class Size

No limit

