

# Annexure H

## Training Plan

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## 1 Overview

Altech Alcom Matomo in conjunction with Huawei Technologies Africa (PTY) Ltd is delighted to provide this training proposal, which outlines the required training programs and courses necessary for customer to attain sufficient competence to manage the products and network offered by Huawei. Training pertaining Fibre Optic Cable and construction principles is covered in Appendix G - Economic, Skills and Development Plan.

In each training program, target audience, prerequisites, training courses and training duration are described. More details and information of other services can be provided upon request.

## 2 Required Training Program(s)

### 2.1 Background Introduction

Training will be held at South Africa Training Center. And the training language will be ENGLISH.

### 2.2 Required Training Programs

For this project, the whole training solution is designed into the following programs.

List of Training Programs

Training Program	Program Level	Duration (working days)	Class Size	Training Location
<b>Network System Training</b>				
Box Switches (S57) Installation and Commissioning Training	II	1	6-12	SA Training Center
Box Switches (S57) Basic Operation and Maintenance Training	II	2	6-12	SA Training Center
Chassis Switches (S97) Installation and Commissioning Training	II	1	6-12	SA Training Center
Chassis Switches (S97) Basic Operation and Maintenance Training	II	2	6-12	SA Training Center

NE Routers Installation and Commissioning Training	II	1	6-12	SA Training Center
NE Routers Basic Operation and Maintenance Training	II	2	6-12	SA Training Center
AR Routers Installation and Commissioning Training	II	1	6-12	SA Training Center
AR Routers Basic Operation and Maintenance Training	II	2	6-12	SA Training Center
USG9500 High-end Firewall Operation and Maintenance Training(include USG9500 High-end Firewall Installation and Commissioning Training)	II	5	6-12	SA Training Center
iManager U2000 Monitoring Training (Transmission Network only)	II	2	6-12	SA Training Center
OptiX OSN 8800 Commissioning Training	II	9	6-12	SA Training Center
OptiX OSN 8800 1st Line Maintenance Training	II	2	6-12	SA Training Center
iManager N2510 Software Test Operation Training	II	3	6-12	SA Training Center
iManager N2510 Hardware Test Operation Training	II	3	6-12	SA Training Center
<b>IMS System Training</b>				
iManager M2000 (IMS) Client Application Operation and Maintenance Training	II	2	6-12	SA Training Center
iManager U2000 (IMS) Client Application Operation and Maintenance Training	II	2	6-12	SA Training Center
IMS Overview Training	II	2	6-12	SA Training Center
IMS ATCA Platform (Hardware/CGP) Training	II	1	6-12	SA Training Center
iCG9815 (offline charging) Operation and Maintenance Training	II	2	6-12	SA Training Center
IMS Convergent Conference Operation and Maintenance (MediaX3600) Training	II	3	6-12	SA Training Center
UMG8900 (IMS) Operation and Maintenance Training	II	2	6-12	SA Training Center
HSS9860 (IMS) Operation and Maintenance Training	II	1	6-12	SA Training Center

CSC3300/MRP6600 Operation and Maintenance Training	II	2	6-12	SA Training Center
IMS Service Provisioning (SPG2800) Operation and Maintenance Training	II	2	6-12	SA Training Center
ATS9900 Operation and Maintenance Training	II	2	6-12	SA Training Center
SE2900 Operation and Maintenance Training	II	3	6-12	SA Training Center
UAC3000 Operation and Maintenance Training	II	2	6-12	SA Training Center
<b>Administrator Training for OSS system</b>				
IT System Administration Training	II	2	6-12	SA Training Center
Database Administration Training	II	1	6-12	SA Training Center
System Configuration and Administration Training	II	1	6-12	SA Training Center
API Training	II	2	6-12	SA Training Center
<b>End User Training for OSS system</b>				
UAT Training For OM	II	1	6-12	SA Training Center
UAT Training For IM	II	2	6-12	SA Training Center
UAT Training For AM	II	1	6-12	SA Training Center
End Users Training For OM	II	3	6-12	SA Training Center
End Users Training For IM	II	4	6-12	SA Training Center
End Users Training For AM	II	2	6-12	SA Training Center

Level Description:

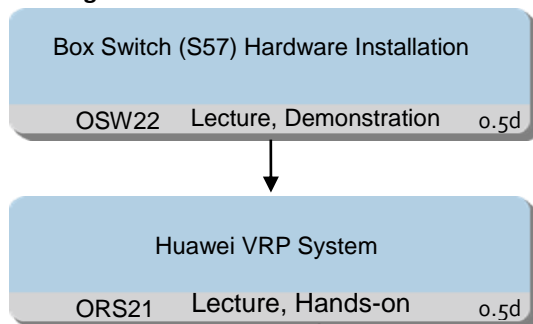
I : Basic Course II : Intermediate Course III: Advanced Course IV: Expert Course

## 2.3 Training Programs Description

### 2.3.1 Network System Training

#### 2.3.1.1 Box Switches (S57) Installation and Commissioning Training

##### Training Path



##### Target Audience

- Installers and Commissioning Staffs
- Operators and Maintainers

##### Prerequisites

- A general familiarity with PC operation system
- A basic understanding of computer technology

##### Objectives

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

- Describe Huawei box switch installation process
- List precautions when install Huawei box switch
- Install Huawei box switch
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center
- Perform VRP operate files
- Operate VRP upgrade software

##### Training Content

###### OSW22 Box Switches (S57) Hardware Installation

- Huawei Box Switches(S57)Hardware Installation
  - Huawei box switch overview
  - Huawei box switch installation precautions
  - Huawei box switch installation steps

###### ORS21 Huawei VRP System

- VRP System Architecture
  - VRP overview

- VRP Basic Configuration
  - VRP Basic Configuration
  - VRP Information Center
  - VRP file operation
  - VRP software upgrade
- Hands-on Exercise Guide to Huawei VRP Configuration Basics
  - VRP basic operation configuration
  - Remote device management
  - Terminal information output control
  - File system management
  - FTP operation

**Duration**

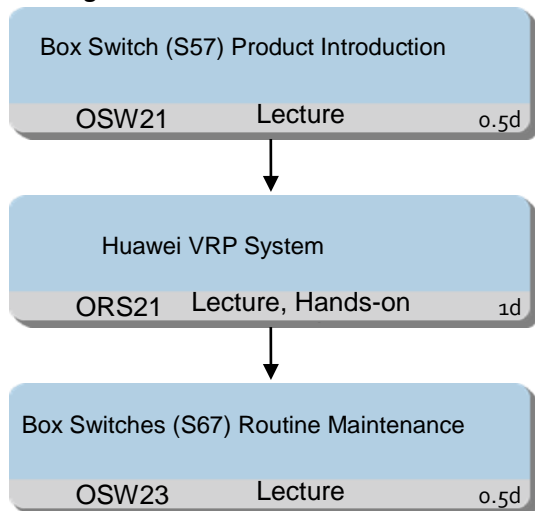
1 working day

**Class Size**

Min 6, Max 12

**2.3.1.2 Box Switches (S57) Basic Operation and Maintenance Training**

**Training Path**



**Target Audience**

- Monitoring Staffs
- Operators and Maintainers
- Administrators

**Prerequisites**

- A general familiarity with PC operation system
- A basic understanding of computer technology
- A basic understanding of IP network

## Objectives

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

- Describe Huawei box switch product positioning
- Describe Huawei box switch hardware architecture
- Describe Huawei box switch cards and modules
- Describe Huawei box switch data forwarding flows
- List Huawei box switch characteristic function
- List Huawei box switch software features
- Describe Huawei box switch application scenarios
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center
- Perform VRP operate files
- Operate VRP upgrade software
- Describe the contents and methods of routine maintenance to Huawei box switches
- List the notices of routine maintenance to box switches
- Perform the routine maintenance of Huawei box switches
- Describe the methods and procedures of replacing Huawei box switches components
- Lists the matters needing attention of replacing Huawei box switches components
- Perform the replacing of Huawei box switches components

## Training Content

OSW21 Box Switches (S57) Product Introduction

- Huawei Box Switches(S57) Hardware Introduction
  - Huawei box switch product positioning
  - Huawei box switch hardware architecture
  - Huawei box switch cards and modules
  - Huawei box switch data forwarding flows
  - Huawei box switch characteristic function
  - Huawei box switch application scenarios
- Huawei Box Switches(S57)Software Features Introduction
  - Huawei box switch software architecture
  - Ethernet features
  - IP routing features
  - High-reliability features
  - QoS features
  - IP service features
  - Multicast features
  - Security features



- Management features
- ORS21 Huawei VRP System
- VRP System Architecture
    - VRP overview
  - VRP Basic Configuration
    - VRP Basic Configuration
    - VRP Information Center
    - VRP file operation
    - VRP software upgrade
  - Hands-on Exercise Guide to Huawei VRP Configuration Basics
    - VRP basic operation configuration
    - Remote device management
    - Terminal information output control
    - File system management
    - FTP operation
- OSW23 Box Switches (S57) Routine Maintenance
- Huawei Box Switches(S57) Routine Maintenance
    - Routine maintenance overview
    - Projects of routine maintenance
    - Risks of routine maintenance
    - Common maintenance commands
    - Box switches components replacing

**Duration**

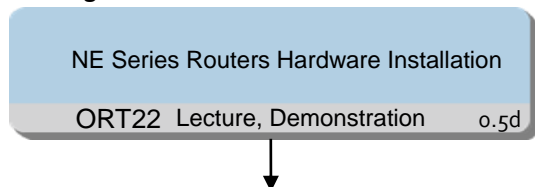
2 working days

**Class Size**

Min 6, Max 12

**2.3.1.3 NE Routers Installation and Commissioning Training**

**Training Path**



## Huawei VRP System

ORS21 Lecture, Hands-on 0.5d

### Target Audience

- Installers and Commissioning Staffs
- Operators and Maintainers

### Prerequisites

- A general familiarity with PC operation system
- A basic understanding of computer technology

### Objectives

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

- Describe NE series routers installation process
- List precautions when install NE series routers
- Install NE series routers
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center
- Perform VRP operate files
- Operate VRP upgrade software

### Training Content

#### ORT22 NE Series Routers Hardware Installation

- NE Series Routers Hardware Installation
  - NE Series Routers overview
  - NE Series Routers installation precautions
  - NE Series Routers installation steps

#### ORS21 Huawei VRP System

- VRP System Architecture
  - VRP overview
- VRP Basic Configuration
  - VRP Basic Configuration
  - VRP Information Center
  - VRP file operation
  - VRP software upgrade
- Hands-on Exercise Guide to Huawei VRP Configuration Basics
  - VRP basic operation configuration
  - Remote device management
  - Terminal information output control
  - File system management

- FTP operation

**Duration**

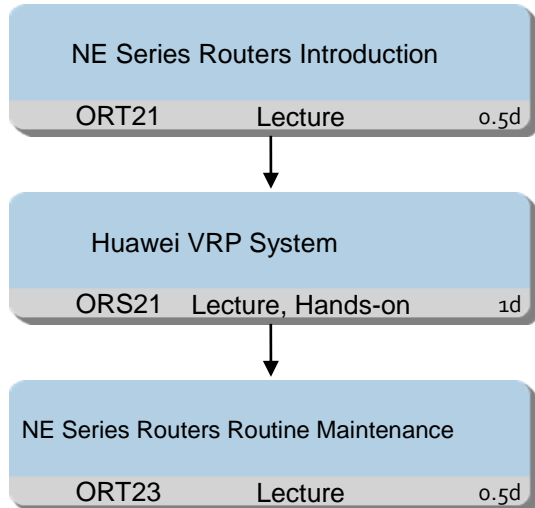
1 working day

**Class Size**

Min 6, Max 12

**2.3.1.4 NE Routers Basic Operation and Maintenance Training**

**Training Path**



**Target Audience**

- Installers and Commissioning Staffs
- Operators and Maintainers

**Prerequisites**

- A general familiarity with PC operation system
- A basic understanding of computer technology

**Objectives**

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

- Describe NE series routers hardware structure
- Describe NE series routers board types and functions
- Identify NE series routers board
- Judge NE series routers board indicators and functions
- Describe NE series routers positioning and application scenarios
- Describe NE series routers features Overview
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center
- Perform VRP operate files

- Operate VRP upgrade software
- List precautions for NE series routers routine maintenance
- Perform NE series routers routine maintenance

### **Training Content**

#### ORT21 NE Series Routers Introduction

- NE40E-X Product Hardware Introduction
  - NE40E-X routers hardware architecture
  - NE40E-X routers board types
  - NE40E-X routes board functions and specifications features
- NE5000E/80E/40E Products Features Description
  - NE5000E/80E/40E product positioning and application scenarios
  - NE5000E/80E/40E route features
  - NE5000E/80E/40E service features
  - NE5000E/80E/40E QoS features
  - NE5000E/80E/40E HA features
  - NE5000E/80E/40E IPv6 features

#### ORS21 Huawei VRP System

- VRP System Architecture
  - VRP overview
- VRP Basic Configuration
  - VRP Basic Configuration
  - VRP Information Center
  - VRP file operation
  - VRP software upgrade
- Hands-on Exercise Guide to Huawei VRP Configuration Basics
  - VRP basic operation configuration
  - Remote device management
  - Terminal information output control
  - File system management
  - FTP operation

#### ORT23 NE Series Routers Routine Maintenance

- NE Series Routers Routine Maintenance
  - NE series routers routine maintenance items introduction
  - NE series routers routine maintenance operation direction

### **Duration**

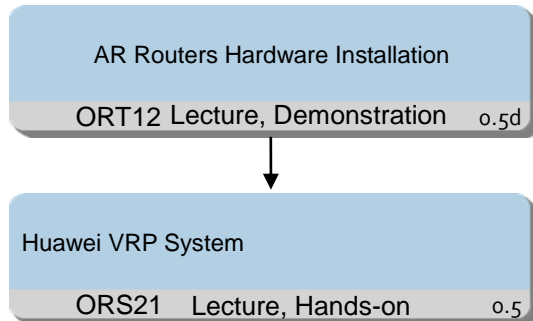
2 working days

### **Class Size**

Min 6, Max 12

### 2.3.1.5 AR Routers Installation and Commissioning Training

#### Training Path



#### Target Audience

- Operators and Maintainers

#### Prerequisites

- A general familiarity with PC operation system
- A basic understanding of computer technology

#### Objectives

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

- Describe AR router installation process
- List precautions when install AR routers
- Install AR routers
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center
- Perform VRP operate files
- Operate VRP upgrade software

#### Training Content

##### ORT12 AR Routers Hardware Installation

- AR Routers Hardware Installation
  - AR routers overview
  - AR routers installation precautions
  - AR routers installation steps

##### ORS21 Huawei VRP System

- VRP System Architecture
  - VRP overview
- VRP Basic Configuration
  - VRP Basic Configuration

- VRP Information Center
- VRP file operation
- VRP software upgrade
- Hands-on Exercise Guide to Huawei VRP Configuration Basics
  - VRP basic operation configuration
  - Remote device management
  - Terminal information output control
  - File system management
  - FTP operation

**Duration**

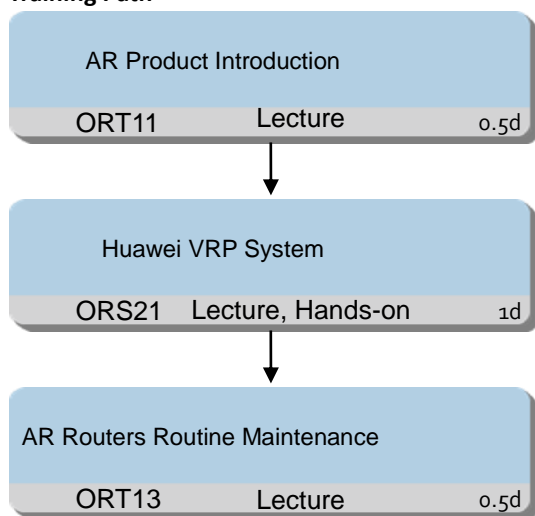
1 working day

**Class Size**

Min 6, Max 12

**2.3.1.6 AR Routers Basic Operation and Maintenance Training**

**Training Path**



**Target Audience**

- Operators and Maintainers

**Prerequisites**

- A general familiarity with PC operation system
- A basic understanding of computer technology
- A basic understanding of IP network

## Objectives

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

- Describe AR product positioning
- Describe AR hardware architecture
- Describe AR data forwarding flows
- List AR cards and modules
- List AR software features
- Describe AR application scenarios
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center
- Perform VRP operate files
- Operate VRP upgrade software
- Describe the procedure and method for AR router routine maintenance
- List precautions for AR router routine maintenance
- Perform AR router routine maintenance

## Training Content

ORT11 AR Product Introduction

- AR Router Hardware Introduction
  - AR router product positioning
  - AR router hardware architecture
  - AR router cards and modules
  - AR router data forwarding flows
  - AR router characteristics
  - AR router typical networking AR
- AR Router Software Features Introduction
  - AR router software architecture
  - LAN / WAN features
  - IP service features
  - IP routing features
  - MPLS features
  - Multicast features
  - QoS features
  - Security features
  - VPN features
  - High-reliability features
  - Management features
  - Voice features

ORS21 Huawei VRP System

- VRP System Architecture
  - VRP overview
- VRP Basic Configuration
  - VRP Basic Configuration
  - VRP Information Center
  - VRP file operation
  - VRP software upgrade
- Hands-on Exercise Guide to Huawei VRP Configuration Basics
  - VRP basic operation configuration
  - Remote device management
  - Terminal information output control
  - File system management
  - FTP operation

ORT13 AR Routers Routine Maintenance

- AR Routers Routine Maintenance
  - AR router routine maintenance overview
  - AR router routine maintenance items
  - AR router routine maintenance risks
  - AR router maintenance commands
  - AR router parts replacement

**Duration**

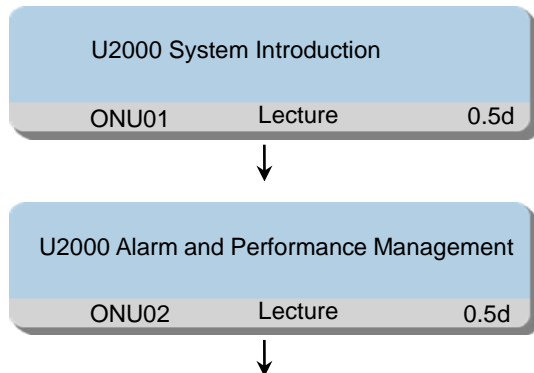
2 working days

**Class Size**

Min 6, Max 12

**2.3.1.7 iManager U2000 Monitoring Training (Transmission Network only)**

**Training Path**





Transmission Network Device Introduction

ONU07

Lecture

1d

**Target Audience**

- U2000 operator and maintainer

**Prerequisites**

- Having the basic knowledge of network management
- Having the basic principle and equipment knowledge of Transmission network

**Objectives**

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

- Describe the architecture and main features of U2000
- Describe the directory structure of U2000
- Describe the main functions of U2000
- Describe the basic concepts in alarm and performance management of U2000
- Perform the browse and setting operation for alarm
- Perform the basic response operation for common alarm events
- Perform the browse and setting operation for performance events
- Explain the networking and application of Huawei Transmission network equipment
- Describe the functions of Huawei network products
- Describe the capacity and features of Huawei network products
- Locate the alarm in the network

**Training Content**

ONU01 U2000 System Introduction

- iManager U2000-T System Introduction
  - Telecommunications Management Network Concept
  - Network Management Layer of U2000
  - U2000 System Architecture
  - Interfaces of U2000
  - Managed Equipment of U2000
  - Hardware and Software Requirement
  - The User Interface of U2000
  - Processes of U2000
  - NMS Maintenance Suite: MSuite
  - License Introduction
  - Directory Structure of U2000

ONU02 U2000 Alarm and Performance Management

- iManager U2000-T Alarm and Performance
  - Alarm Severity and Category

- Alarm Status
- Alarm Viewing and Operations
- Alarm Template
- Alarm Setting Operations
- Alarm Dumping
- Performance Events Type
- Performance Monitoring Setting
- Performance Viewing Operations
- Performance Data Dumping

**ONU07 Transmission Network Device Introduction**

- OptiX NG SDH & OCS System Description
  - OptiX NG SDH & OCS Product Introduction
  - Cabinet, Sub-rack, Boards
  - Equipment Features

**Duration**

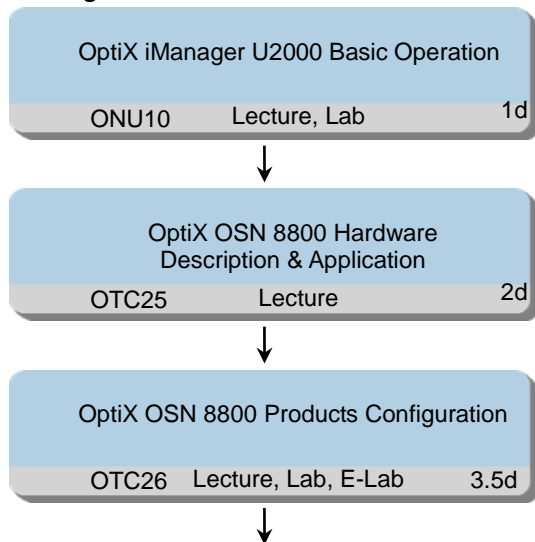
2 working days

**Class Size**

Min 6, Max 16

**2.3.1.8 OptiX OSN 8800 Commissioning Training**

**Training Path**



## OptiX NG WDM Commissioning

OTC28 Lecture, Lab, E-Lab 2.5d

### Target Audience

- OptiX NG WDM commissioning engineer

### Prerequisites

- Having working experience in the optical transport network
- Be familiar with Windows operating system

### Objectives

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

- Describe the system structure and features of OptiX OSN 8800 systems
- Describe the main functions of the boards
- Outline the system protection modes of OptiX OSN 8800 systems
- List the common network topologies and network elements of OptiX OSN 8800 systems
- Describe the network applications of OptiX OSN 8800 systems
- Describe the architecture and main features of U2000
- Describe the directory structure of U2000
- Describe the main functions of U2000
- Describe the advantages of OTN
- Describe the OTN frame structure and list the different components' function
- Describe the main features of the optical layer grooming and electrical layer grooming
- Describe OptiX OSN 8800 system signal flow and fiber connection, which include OTM, OLA, OADM, etc.
- Outline the supervisory channel signal flow in different network elements
- Describe the functions, architecture and the menus of iManager U2000
- Implement iManager U2000 basic operations, OptiX OSN 8800 data configuration and system management
- Configure OptiX OSN 3800/6800/8800(OTN) products through iManager U2000
- Configure the typical protection for the equipment
- Check the data configuration correctness and validity
- Check the equipment running condition such as power connections, fiber connections, mounted boards, etc.
- Outline and perform the commissioning procedure for OptiX OSN 8800 equipment
- Perform the single station commissioning of OptiX OSN 8800 equipment
- Perform the commissioning of supervisory channel
- Perform the main path commissioning of OptiX OSN 8800 equipment
- Perform indices testing during the commissioning process
- Eliminate the fault occurring during the commissioning process

## Training Content

### ONU10 OptiX iManager U2000 Basic Operation

- iManager U2000-T System Introduction
  - Telecommunications Management Network Concept
  - Network Management Layer of U2000
  - U2000 System Architecture
  - Interfaces of U2000
  - Managed Equipment of U2000
  - Hardware and Software Requirement
  - The User Interface of U2000
  - Processes of U2000
  - NMS Maintenance Suite: MSuite
  - License Introduction
  - Directory Structure of U2000

- iManager U2000 Basic Operation Practice Guide

### OTC25 OptiX OSN 8800 Hardware Description & Application

- OptiX OSN 6800 Hardware Description
  - OptiX OSN 6800 networking application and product features
  - OptiX OSN 6800 cabinet, sub-rack and frame
  - OptiX OSN 6800 boards description
- OptiX OSN 8800 Hardware Description
  - OptiX OSN 8800 networking application and product features
  - OptiX OSN 8800 cabinet, sub-rack and frame
  - OptiX OSN 8800 boards description
  - OptiX OSN 3800 boards description
- OptiX OSN 8800 Protection
  - OptiX NG WDM equipment level protection
  - OptiX NG WDM optical layer protection
  - OptiX NG WDM electrical layer protection
- OptiX OSN 8800 Equipment Networking and Application
  - OptiX NG WDM product feature
  - OptiX NG WDM node type
  - OptiX NG WDM network applications
  - Key factors in WDM networking

### OTC26 OptiX OSN 8800 Products Configuration

- OptiX OSN 8800 Equipment Operation and Maintenance
  - Operation precautions
  - OptiX NG WDM basic maintenance operations

- OptiX NG WDM board replacement
  - OptiX NG WDM equipment routine maintenance items
- OptiX NG WDM NMS Side Operation and Maintenance
  - OptiX NG WDM NMS side routine maintenance items
  - OptiX NG WDM daily maintenance items
  - OptiX NG WDM monthly maintenance items
  - OptiX NG WDM semiyearly maintenance items
  - Other NMS side operation
- OptiX NG WDM NMS Side Operation and Maintenance Practice Guide
- OptiX NG WDM Common Data Configuration
  - Preparation for OptiX NG WDM data configuration
  - Creating a OptiX NG WDM network
- OptiX NG WDM Common Data Configuration Practice Guide
- OptiX NG WDM Optical Layer Data Configuration
  - Basic concepts
  - Configuring the edge port
  - Creating OptiX NG WDM single-station optical cross-connection
  - Configuring OptiX NG WDM OCh trail
- OptiX OSN NG WDM Optical Layer Data Configuration Practice Guide
- OptiX OSN NG WDM Electrical Layer Data Configuration
  - Basic concepts
  - Configuring OptiX NG WDM normal cross-connection Services
  - Configuring OptiX NG WDM service timeslots
  - Configuring OptiX NG WDM electrical trail
- OptiX OSN NG WDM Electrical Layer Data Configuration Practice Guide
- OptiX NG WDM Electrical Layer Grooming
  - OptiX NG WDM electrical layer grooming
  - OptiX NG WDM service grooming model
  - OptiX NG WDM boards involved in electrical layer grooming
  - Application scenarios of electrical layer service grooming

#### OTC28 OptiX NG WDM Commissioning

- OptiX NG WDM Optical Power Calculation
  - Review of the OptiX NG WDM signal flow
  - Basic concepts
  - Power calculation of OptiX NG WDM OSC
  - Power calculation of OptiX NG WDM main Path
- OptiX NG WDM Equipment Commissioning
  - Preparations for OptiX NG WDM commissioning

- Configuring OptiX NG WDM NE and network
- Commissioning OptiX NG WDM optical power
- Commissioning OptiX NG WDM network
- OptiX OSN 8800 Equipment Commissioning Practice Guide

**Duration**

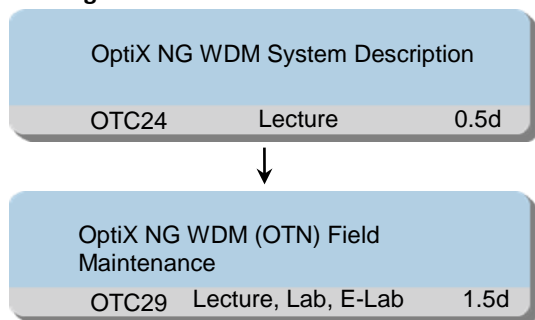
9 working days

**Class Size**

Min 6, Max 12

**2.3.1.9 OptiX OSN 8800 Line Maintenance Training**

**Training Path**



**Target Audience**

- OptiX NG WDM equipment field maintenance engineer

**Prerequisites**

- Be familiar with Windows operating system
- Having a general knowledge of WDM basics

**Objectives**

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

- Describe the position of OptiX OSN 8800 systems in an optical transport network
- Describe the functions and features of OptiX OSN 8800 systems
- Illustrate the functions of different units in OptiX OSN 8800 systems, which include OTU, MUX/DEMUX, OA, OSC/ESC, XCS etc.
- Describe the protection and features of OptiX OSN 8800 systems
- Describe the status of OptiX OSN 8800 products alarm indicators
- Describe the running environment of OptiX OSN 8800 products
- List the routine maintenance items of OptiX OSN 8800 products
- Perform the basic maintenance operations of OptiX OSN 8800 products, such as board replacement, fiber connection, optical power adjusting, etc.
- Complete the maintenance records of OptiX OSN 8800 products

- Outline the common menus of OptiX iManager U2000/Web LCT
- Perform the NE configuration, board configuration, and protection configuration of OptiX OSN 8800 products via iManager U2000/Web LCT
- Perform the routine maintenance of OptiX OSN 8800 products via iManager U2000/Web LCT

**Training Content**

OTC24 OptiX NG WDM System Description

- OptiX NG WDM System Description
  - OptiX NG WDM network application
  - OptiX NG WDM product functions and features
  - OptiX NG WDM product architecture and capacity

OTC29 OptiX NG WDM (OTN) Field Maintenance

- OptiX OSN 8800 Equipment Operation and Maintenance
  - Operation precautions
  - OptiX NG WDM basic maintenance operations
  - OptiX NG WDM board replacement
  - OptiX NG WDM equipment routine maintenance items
- OptiX OSN 8800 Web LCT Operation and Maintenance
  - Preparations for OptiX NG WDM Web LCT configuration
  - Basic OptiX NG WDM Web LCT configuration
  - OptiX NG WDM Web LCT maintenance and management operations

**Duration**

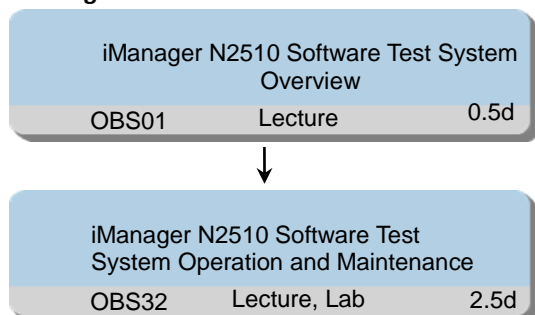
2 working days

**Class Size**

Min 6, Max 12

**2.3.1.10 iManager N2510 Software Test Operation Training**

**Training Path**



### Target Audience

- Technical Support Engineers
- Operation and Maintenance Engineers

### Prerequisites

- General understanding of access network and xDSL technology

### Objectives

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

- Describe the function of each functional unit of iManager N2510 AOS test system
- Analyze test item such as SELT, DELT
- Understand the limits of measurements
- Perform the N2510 system login
- Perform the System Configuration
- Carry out the line Testing operation
- Carry out the line analysis operation
- Carry out the line Optimization operation
- Carry out the line Evaluation operation

### Training Content

#### OBS01 iManager N2510 Software Test System Overview

- iManager N2510 System Introduction
  - N2510 solution overview
  - LTS function module
  - AOS function module
  - OLS function module
  - N2510 system hardware platform
  - N2510 system software platform
  - Interconnection of N2510 system

#### OBS32 iManager N2510 Software Test System Operation and Maintenance

- iManager N2510 AOS Functional Features
  - The system architecture, the network position, the networking solution and the functional structure of iManager N2510
  - The workstation platform solution of iManager N2510 software test system, such as PC solution and ATAE solution
  - The interfaces and its function of iManager N2510 software test system
- iManager N2510 AOS system Operation and Maintenance
  - Log into N2510
  - System management
  - Resource configuration



- Testing function
- Network analysis
- Line optimization
- Line evaluation

**Duration**

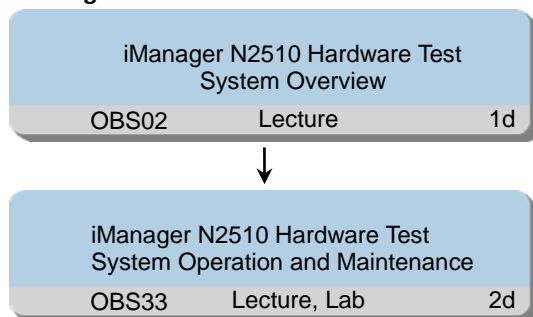
3 working days

**Class Size**

Min 6, Max 12

**2.3.1.11 iManager N2510 Hardware Test Operation Training**

**Training Path**



**Target Audience**

- Technical Support Engineers
- Operation and Maintenance Engineers

**Prerequisites**

- General understanding of access network and xDSL technology

**Objectives**

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

- Describe LTS system typical networking
- Outline LTS system function features
- List part of testing measurement
- Describe LTS system typical networking
- Complete line resource configuration
- Perform DMM, LB, FR and DMT via iManager N2510
- Complete some of the testing demonstration

**Training Content**

- OBS02 iManager N2510 Hardware Test System Overview
- iManager N2510 System Introduction

- N2510 solution overview
- LTS function module
- AOS function module
- OLS function module
- N2510 system hardware platform
- N2510 system software platform
- Interconnection of N2510 system
- iManager N2510 LTS System Introduction
  - iManager N2510 LTS system introduction
  - iManager N2510 LTS hardware introduction
  - iManager N2510 LTS typical networking
  - iManager N2510 LTS function features
  - iManager N2510 LTS testing measurement

OBS33 iManager N2510 Hardware Test System Operation and Maintenance

- iManager N2510 LTS System Operation Guide
  - Line resource configuration
  - Test Case 1: short-circuiting
  - Test Case 2: Locate the fault point
  - Test Case 3: Power off the modem
  - Test Case 4: pre-evaluation test
  - Test Case 5: service quality evaluation

**Duration**

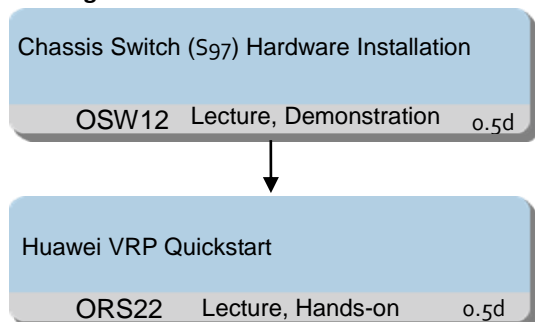
3 working days

**Class Size**

Min 6, Max 12

**2.3.1.12 Chassis Switches (S97) Installation and Commissioning Training**

**Training Path**



**Target Audience**

- Installers and Commissioning Staffs
- Operators and Maintainers

**Prerequisites**

- A general familiarity with PC operation system
- A basic understanding of computer technology

**Objectives**

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

- Describe Huawei chassis switch installation process
- List precautions when install chassis switch
- Install Huawei chassis switch
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center
- Perform VRP operate files
- Operate VRP upgrade software

**Training Content**

OSW12 Chassis Switches (S97) Hardware Installation

- Huawei Chassis Switches(S97) Hardware Installation
  - Huawei chassis switch overview
  - Huawei chassis switch installation precautions
  - Huawei chassis switch installation steps

ORS22 Huawei VRP Quickstart

- Huawei VRP Quickstart
  - VRP overview
  - VRP Basic Configuration
  - VRP Information Center
  - VRP file operation
  - VRP software upgrade
- Hands-on Exercise Guide to Huawei VRP Configuration Basics
  - VRP basic operation configuration
  - Remote device management
  - Terminal information output control
  - File system management
  - FTP operation

**Duration**

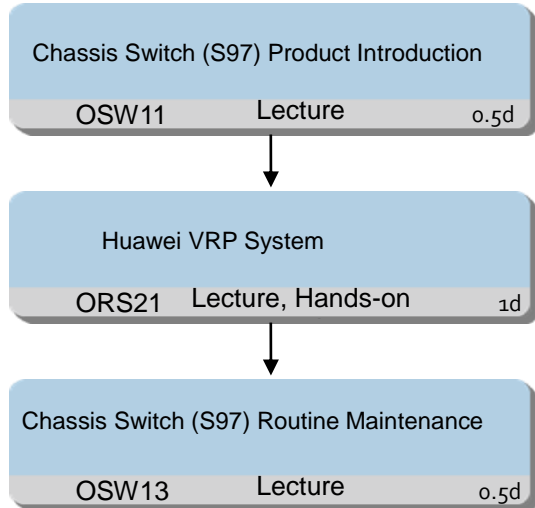
1 working day

**Class Size**

Min 6, Max 12

**2.3.1.13 Chassis Switches (S97) Basic Operation and Maintenance Training**

**Training Path**



**Target Audience**

- Monitoring Staffs
- Operators and Maintainers
- Administrators

**Prerequisites**

- A general familiarity with PC operation system
- A basic understanding of computer technology
- A basic understanding of IP network

**Objectives**

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

- Describe Huawei chassis switch product positioning
- Describe Huawei chassis switch product hardware architecture
- Describe Huawei chassis switch product cards and modules
- Describe Huawei chassis switch product data forwarding flows
- Describe Huawei chassis switch product characteristic function
- Describe Huawei chassis switch product software features
- Describe Huawei chassis switch product application scenarios
- Describe the VRP architecture
- Use basic operation commands
- Describe the function of VRP information center

- Perform VRP operate files
- Operate VRP upgrade software
- Describe the procedure and method for Huawei chassis switch routine maintenance
- List precautions for Huawei chassis switch routine maintenance
- Perform Huawei chassis switch routine maintenance
- Describe the procedure and method for Huawei chassis switch parts replacement
- List precautions for Huawei chassis switch component replacement
- Perform Huawei chassis switch component replacement

### **Training Content**

#### OSW11 Chassis Switches (S97) Product Introduction

- Huawei Chassis Switches(S97) Hardware Introduction
  - Huawei chassis switch product positioning
  - Huawei chassis switch product hardware architecture
  - Huawei chassis switch product cards and modules
  - Huawei chassis switch product data forwarding flows
  - Huawei chassis switch product characteristic function
  - Huawei chassis switch product application scenarios
- Huawei Chassis Switches(S97) Software Features Introduction
  - Huawei chassis switch software architecture
  - Ethernet features
  - IP routing features
  - High-reliability features
  - QoS features
  - IP service features
  - MPLS VPN features
  - Multicast features
  - Security features
  - Management features

#### ORS21 Huawei VRP System

- VRP System Architecture
  - VRP overview
- VRP Basic Configuration
  - VRP Basic Configuration
  - VRP Information Center
  - VRP file operation
  - VRP software upgrade
- Hands-on Exercise Guide to Huawei VRP Configuration Basics

- VRP basic operation configuration
- Remote device management
- Terminal information output control
- File system management
- FTP operation

#### OSW13 Chassis Switches (S97) Routine Maintenance

- Huawei Chassis Switches(S97) Routine Maintenance
  - Huawei chassis switch routine maintenance overview
  - Huawei chassis switch routine maintenance items
  - Huawei chassis switch routine maintenance risks
  - Huawei chassis switch maintenance commands
- Huawei Chassis Switch Parts Replacement
  - Huawei chassis switch parts replacement overview
  - Huawei chassis switch board replacement
  - Huawei chassis switch cable replacement
  - Huawei chassis switch other parts replacement

#### **Duration**

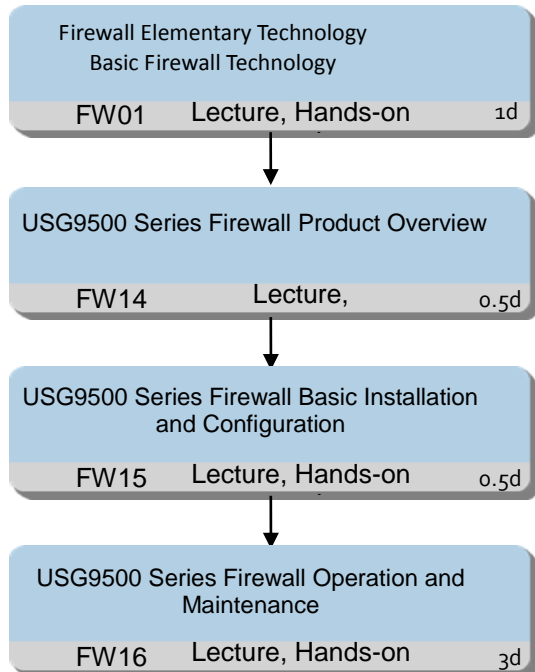
2 working days

#### **Class Size**

Min 6, Max 12

**2.3.1.14 USG9500 High-end Firewall Operation and Maintenance Training (include USG9500 High-end Firewall Installation and Commissioning Training)**

**Training Path**



**Target Audience**

- Operators and Maintainers

**Prerequisites**

- Be familiar with PC operation system
- Be familiar with data communications network elementary knowledge
- Be familiar with network security elementary knowledge
- Be familiar with Firewall elementary knowledge

**Objectives**

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

- Understand the definition and classification of firewalls.
- Understand firewall functions and technologies.
- Understand the service process and basic configuration of firewalls.
- Understand the functions and classification of ACLs.
- Understand Interface-based packet filtering scenario and configuration
- Understand Interzone packet filtering scenario and configuration
- Understand the principles of the NAT technology.
- Understand the application of NAT
- Understand the NAT configuration of firewalls

- Describe the hardware structure of Huawei's high-end series firewall
- Describe the software function of Huawei's high-end series firewall
- Describe the performance parameter of Huawei's high-end series firewall system
- Master USG9500 Hardware Installation
- Master USG9500 Basic Configuration
- Master USG9500 Basic Function Features and Configurations
- Master USG9500 Routine Maintenance
- Master Basic Principles of USG9500 Maintenance
- Master USG9500 Information Collection
- Master USG9500 Troubleshooting Ability

## **Content**

### FW01 Firewall Elementary Technology

- Basic Firewall Technology
  - Firewall Overview
  - Firewall Working Modes
  - Firewall Security Zones
  - Firewall Functions
  - Basic Firewall Configuration
- Firewall Packet Filtering Technology
  - ACL Overview
  - Interface-based Packet Filtering
  - Interzone Packet Filtering
  - Application Analysis of Packet Filtering
- Network Address Translation Technology
  - Introduction to Network Address Translation Technology
  - NAT Technology Based on the Source IP Address
  - NAT Technology Based on the Destination IP Address
  - Bidirectional NAT Technology
  - NAT Application Scenario and Configuration

### FW14 USG9500 Series Product Overview

- USG9500 Product Overview
  - Network Orientation of Firewall
  - Hardware Structure of Firewall
  - Function Characteristics of Firewall
  - Typical Application of Firewall

### FW15 USG9500 Series Product Basic Installation and Configuration

- Basic Configuration



- Hardware Installation
- Initial Connection Configuration
- Introduction of Basic Configuration in Command Line Interface
- Update Guide
- Web GUI Configuration Guide
- Quick Start Configuration

FW16 USG9500 Series Product Operation and Maintenance

- Function Features and Configurations
  - NAT Features and Configurations
  - L2TP Feature and Configuration
  - GRE Feature and Configuration
  - IPSec Feature and Configuration
  - IPS Feature and Configuration
  - DPI Feature and Configuration
  - Dual System and Configuration Operation Maintenance and Troubleshooting
  - Routine Maintenance
  - Information Collection Introduction
  - Basic Maintenance Task
  - Troubleshooting

Basic Firewall feature introduction and feature configuration

**Duration**

5 working days

**Class Size**

Min 6, Max 12

**2.3.2 IMS System Training**

**2.3.2.1 iManager M2000 (IMS) Client Application Operation and Maintenance Training**

**Training Path**

iManager M2000 (IMS) Client Application Operation and Maintenance		
OZO03	Lecture, Lab, E-lab	2d

**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 equipment
- 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

### 2.3.2.2 iManager U2000 (IMS) Client Application Operation and Maintenance Training

#### Training Path

iManager U2000 (IMS) Client Application Operation and Maintenance		
OZO09	Lecture, Lab, E-lab	2d

#### 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 equipment
- 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

**2.3.2.3 IMS Overview Training**

**Training Path**

IMS Overview		
OZA02	Lecture	2d

**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.

**Duration**

2 working days

**Class Size**

Min 6, Max 12

#### 2.3.2.4 MS ATCA Platform (Hardware/CGP) Training

##### Training Path

IMS ATCA Platform (Hardware/CGP)  
Operation and Maintenance

OZC00Lecture, Hands-on exercise 1d

##### 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 equipment
- 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(CGP) client

##### Duration

1 working day

##### Class Size

Min 6, Max 12

### 2.3.2.5 iCG9815 (offline charging) Operation and Maintenance Training

#### Training Path

iCG9815 (offline charging) Operation and Maintenance		
OZC04	Lecture, Hands-on exercise	2d

#### 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 equipment
- 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

#### Duration

2 working days

#### Class Size

Min 6, Max 12

### 2.3.2.6 IMS Convergent Conference Operation and Maintenance (MediaX3600) Training

#### Training Path

IMS Convergent Conference Operation and Maintenance (MediaX3600)		
OZS03	Lecture, Hands-on exercise	3d

#### 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 equipment
- 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

**Duration**

3 working days

**Class Size**

Min 6, Max 12

**2.3.2.7 UMG8900 (IMS) Operation and Maintenance Training**

**Training Path**

UMG8900(IMS) Operation and Maintenance		
OZE04	Lecture, Hands-on exercise	2d

**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 equipment
- 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)

**Duration**

2 working days

**Class Size**

Min 6, Max 12

**2.3.2.8 HSS9860 (IMS) Operation and Maintenance Training**

**Training Path**

HSS9860 (IMS) Operation and Maintenance		
OZC02	Lecture, Lab, E-lab	1d

**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 equipment
- 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



### 2.3.2.9 CSC3300/MRP6600 Operation and Maintenance Training

#### Training Path

CSC3300/MRP6600 Operation and Maintenance		
OZC01	Lecture, Hands-on exercise	2d

#### 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 equipment
- 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

#### Duration

2 working days

#### Class Size

Min 6, Max 12

### 2.3.2.10 IMS Service Provisioning (SPG2800) Operation and Maintenance Training

#### Training Path

IMS Service Provisioning (SPG2800) Operation and Maintenance		
OZC11	Lecture, Hands-on exercise	2d

#### 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 equipment
- 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 HSS9820 and ATS9900
- Perform the basic service test and verification

#### Duration

2 working days

#### Class Size

Min 6, Max 12

### 2.3.2.11 ATS9900 Operation and Maintenance Training

### Training Path

ATS9900 Operation and Maintenance		
OZS02	Lecture, Hands-on exercise	2d

### 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 equipment
- 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

### Duration

2 working days

### Class Size

Min 6, Max 12

## 2.3.2.12 SE2900 Operation and Maintenance Training

### Training Path

SE2900 Operation and Maintenance		
OZD06	Lecture, Lab, E-lab	3d

### 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 equipment
- 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

### Training Plan

**Class Size**

Min 6, Max 12



### 2.3.2.13 UAC3000 Operation and Maintenance Training

#### Training Path

UAC3000 Operation and Maintenance		
OZE03	Lecture, Lab, E-lab	2d

#### 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 equipment
- 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

**2.3.3 Administrator Training for OSS system**

**2.3.3.1 IT System Administration Training**

**Target Audience**

- This program is intended for IT maintenance department.

**Prerequisites**

- Knowledge of computer
- Knowledge of server OS
- Knowledge of database

**Objectives**

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

- Knowledge to installation, configuration and administration of Server OS.
- Maintenance users could analyze simple server OS problem.  
To know where to find log files.
- To know how to read the error message for general diagnose.
- Users will be able to daily maintain server OS.
- To add/modify/delete user privileges.
- To configure partition, disk space, network card.
- Knowledge to install, configure, operate application and 3rd party software.

**Duration**

2 working days

**Class Size**

Min 1, max 12

**2.3.3.2 Database Administration Training**

**Target Audience**

- The program is intended for admin & maintenance department.

**Prerequisites**

- Knowledge of telecommunications

- Knowledge of computer
- Knowledge of database

#### **Objectives**

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

- Knowledge to operation IMS of the database, for example how to select resource table.
- Users could achieve basic operation ability for the database such as select, add, delete etc.
- Users could analysis simple questions.

#### **Duration**

1 working day

#### **Class Size**

Min 1, max 12

### **2.3.3.3 System Configuration and Administration Training**

#### **Target Audience**

- The program is intended for admin & maintenance users who have configuration authority.

#### **Prerequisites**

- Knowledge of telecommunications
- Knowledge of computer
- Knowledge of database

#### **Objectives**

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

- Familiar with metadata platform tool.
- Users could configuration the basic attributes for network elements;
- Users could configuration the relation for network elements;
- Users could configuration the component for network elements;
- Familiar with configuration menu.
- Users could configuration menu.
- Knowledge to system function.
- Knowledge OSS management scopes such as OM System, IM System, AM System etc.
- Knowledge to operation of the database.
- Users could select associated attributes in the database. When users configuration the template, could select the attributes from tables.

#### **Duration**

1 working day



**Class Size**

Min 1, max 12

**2.3.3.4 API Training**

**Target Audience**

- The program is intended for core personnel who are responsible for SA-GPG RCMP extra integration with external systems.

**Prerequisites**

- Knowledge of telecommunications
- Knowledge of telecom services
- Knowledge of information systems
- Knowledge of software programming

**Objectives**

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

- Develop new interfaces to integrate extra external systems.

**Duration**

2 working days

**Class Size**

Min 1, max 12

**2.3.4 End User Training for OSS system**

**2.3.4.1 UAT Training For OM**

**Target Audience**

- The program is intended for UAT operators of OM system.

**Prerequisites**

- Knowledge of telecommunications
- Knowledge of computer

**Objectives**

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

- Familiar with the OM system architecture.
- Knowledge OM management scope s such as Order Ticket Management, Work Ticket Management, SLA Management etc.
- Knowledge the interface between OM systems to extra system.
- Knowledge to the OM system functions. Could simple operate the OM system

**Duration**

1 working day

**Class Size**

Min 1, max 12

**2.3.4.2 UAT Training For IM**

**Target Audience**

- The program is intended for UAT operators of IM system.

**Prerequisites**

- Knowledge of telecommunications
- Knowledge of computer

**Objectives**

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

- Familiar with the IMS system architecture.
- Knowledge IMS management scope s such as location resources, physical resources, logical resources, network technologies etc.
- Knowledge the interface between IMS to extra system.
- Knowledge to the IMS system functions. Could simple operate IMS.

**Duration**

2 working days

**Class Size**

Min 1, max 12

**2.3.4.3 UAT Training For AM**

**Target Audience**

- The program is intended for UAT operators of AM system.

**Prerequisites**

- Knowledge of telecommunications
- Knowledge of computer

**Objectives**

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

- Familiar with the AM system architecture.
- Knowledge AM management scope.
- Knowledge the interface between the AM systems to extra system.
- Knowledge to the AM system functions. Could simple operate AM system.

**Duration**

1 working day

**Class Size**

Min 1, max 12

#### 2.3.4.4 End Users Training For OM

##### Target Audience

- The program is intended for business operators of OM system.

##### Prerequisites

- Knowledge of telecommunications
- Knowledge of computer

##### Objectives

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

- Familiar with the OM system architecture.
- Knowledge OM management scope s such as Order Ticket Management, Work Ticket Management, SLA Management etc.
- Knowledge the interface between OM systems to extra system.
- Knowledge to the OM system functions.
- Knowledge order ticket management function, such as Ticket Acceptance, Order Audit, Ticket Generation, Ticket Activation, Ticket Modification, Ticket Archiving, Ticket Withdraw, Ticket Cancellation etc.
- Knowledge Work ticket management function, such as Ticket generation, Order dispatch, Ticket rollback, Ticket suspension, Ticket acceptance, Ticket forward, Ticket archiving etc.
- Knowledge Fulfillment Control function, such as SLA management, Exception, order ticket monitoring, interface monitor etc.

##### Duration

3 working days

##### Class Size

Min 1, max 12

#### 2.3.4.5 End Users Training For IM

##### Target Audience

- The program is intended for business operators of IM system.

##### Prerequisites

- Knowledge of telecommunications
- Knowledge of computer

##### Objectives

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

- Familiar with the IMS system architecture.
- Knowledge IMS management scope s such as location resources, physical resources,

logical resources, network technologies etc.

- Knowledge the interface between IMS to extra system.
- Knowledge to the IMS system functions. Could simple operate IMS.
- Knowledge to the IMS system functions.
- Knowledge data maintenance function, such as add, delete, query. Users could operate the system in difference domain such as space domain, network domain etc.
- Knowledge data template;
- Knowledge resource provision functions, such as Resource Allocation, Resource Modification, Resource Rollback, Resource Archiving, Full-process End-to-End Route Display etc.
- Familiar with auto discovery functions, Users could operate auto-discovery tool.

**Duration**

4 working days

**Class Size**

Min 1, max 12

**2.3.4.6 End Users Training For AM**

**Target Audience**

- The program is intended for business operators of AM system.

**Prerequisites**

- Knowledge of telecommunications
- Knowledge of computer

**Objectives**

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

- Familiar with the AM system architecture.
- Knowledge AM management scope.
- Knowledge the interface between the AM systems to extra system.
- Knowledge to the AM system functions. Could simple operate AM system.
- Knowledge to the AM system functions.
- Knowledge Activation Control function, such as SLA Supporting, Exception Management, Work Ticket Monitoring, Ne Interface Monitoring, Alarm Notification etc.
- Knowledge Activation Process functions, such as Work Ticket Acceptance, Work Ticket Dispatch, Command Generation, NE Construction, Work Ticket RFS etc.
- Knowledge NE Access functions, such as NE Management, NE Route, NE Adaptation etc.

**Duration**

2 working days

**Class Size**

Min 1, max 12

### **3 Introduction to Huawei Training Service**

#### **3.1 General Description**

As an important part of Huawei professional services, the Learning Service, reinforced by Huawei integrated platform, helps customers improve the professional skills of their employees and enhance their team competence and organizational performance. Focusing on customer demand for technical competence development, we are committed to becoming the most trustworthy partner for global customers in learning and development. To help customers achieve their goals, our Learning Service comprises learning and development solutions for "professional, practical, performance" knowledge transfer and technical competence certification in addition to providing traditional product technology training and solution services. "Promoting competence development through learning and driving corporate progress through competence development" is the consistent and persistent mission of Huawei Learning Service.

#### **3.2 Huawei Training Center**

Huawei Training Center provides high quality training services, for all categories of staff, covering a broad range of topics from communications technology, learning and development solution focusing on Knowledge Transfer and Technical Competence Certification.

Huawei Training Center is located in Shenzhen, a beautiful young city in south China. It consists of a series of buildings that take up an area of 275,000 m<sup>2</sup>, of which the teaching area occupies a land area of 155,000 m<sup>2</sup> and the residential area 120,000 m<sup>2</sup>. The verdure coverage is over 80%. It has 110 multimedia classrooms and 7,000 m<sup>2</sup> fully equipped labs, can accommodate more than 2,000 trainees simultaneously.



#### **3.3 Global Training**

Considering varied purchaser's demands, Huawei has also set up training centers outside China, and cooperates with local training organizations in many countries. Purchaser may choose to

have training at the Huawei Training Center in China, in Huawei Regional Training Center /Huawei Authorized Training Center, or on-site training (at the Purchaser's own premises).

Since September 2005, we have already set up 36 training centers in Russia, Malaysia, Indonesia, India, Australia, Thailand, Egypt, Tunis, Saudi Arabia, Brazil, Mexico, Colombia, Venezuela, Nigeria, Kenya, South Africa, and UK and so on.

To meet the various expectations of purchasers from different areas of the world, training courseware are jointly developed by instructors from HQ and overseas. The training methods we adopt include lecture, self-study with multimedia CD, instructor-led case study, hands-on exercise with latest test instruments and Huawei products, on-job training, and e-Learning.

### **3.4 Training Instructors**

A total of more than 500 full time trainers are distributed in Huawei Training Center in China and Huawei Regional Training Centers. Certified regularly, they are very experienced in purchaser's jobs and possess a blend of practical field experience, up-to-date knowledge and excellent teaching skills.

We also have a team of designers who are specialists in instructional design, professional training and standards of a systematic course development process. Their efforts are to ensure that the learning experiences and materials are of high quality, learner-centered and meet purchasers' needs.

In addition, numerous subject-matter experts and consultants of Huawei are called-in as part-time instructors. In this way, the effectiveness of the training is more optimized. These part-time instructors, together with our full-time instructors, create practical, useful, job-relevant learning experiences and materials that return you to the job with solutions to improve your job performances and ability to satisfy purchaser expectations.

### **3.5 Training Location**

For the convenience of Purchaser, Huawei may offer on-site training (training at Purchaser's premise), or training at Huawei Training Center. The training locations are selected according to the convenience of Purchaser, the training items needed and availability of training equipment. In addition, Huawei also provides E-Learning training; the Purchaser can get a quick, convenient learning service by the electronic platform.

- **On-Site Training ( Training at Purchaser's Premise)**

Huawei will send instructors to Purchaser's premise, while Purchaser is responsible for training facilities such as classroom projector, PC, and training equipment for hands on practice. Purchaser may either buy a set of training model equipment from Huawei or use part of the engineering equipment for hands-on exercise temporarily.

- **Training at Huawei Training Center:**

Huawei has set up Huawei Regional Training Centers in different countries and Huawei Training Center in China. These Training Centers are equipped with complete training facility and cozy accommodation facility.

- **E-Learning Training**

Huawei has set up an electronic platform to provide E-Learning service for Global Purchasers. More and more training curriculum has been implemented in this platform.

At the same time, this platform will be worked as the tool for Huawei the learning and development solution

### **3.6 Introduction of Huawei Learning Service Product**

Huawei design the modular course according to the customer request and product features in order to implement the different level training requirement from the different customers.

Besides providing the product technology training, Huawei also help the customer to establish quickly and improve the operation capability of network by the customized Learning and Development Solution.

#### **3.6.1 Huawei Product and Technology Training**

Huawei Training provides a broad portfolio of high quality training programs for all categories of purchasers; from field operations, software commissioning, equipment operation/maintenance, and network management.

Training methodologies include lectures, hands-on exercises on real equipment, multimedia training, computer-based training and troubleshooting simulations, etc.

Huawei training curricula are designed and developed based upon market analysis and in-depth understanding of purchaser s' requirements. We follow a performance-based instructional design process to ensure that our training solutions meet purchaser's expectation.

Taking purchaser s' needs and Huawei product features into consideration, we adopt a modular curriculum design as a strategy, focusing on measurable training objectives and an appropriate training sequence and duration. There are now over 500 standard training programs, consisting of nearly 1000 course modules, which cover all of Huawei available products. Customized training courses can be developed within few months upon receiving a requirements form purchaser.

Huawei product and technology training services mainly include the following contents:

- Wireless network technology training covers GSM/GPRS, EDGE, WCDMA, CDMA2000, EVDO, TD-SCDMA, and LTE networks. In this area, Huawei offers product and technology training for different levels.
- Core network technology training courses cover core network areas such as UMTS, GSM, GPRS, CDMA, NGN, traditional switches, and IMS. To meet customer demand for particular technology and job skill training, this course is designed to help telecom employees improve their skills in various areas such as hardware installation, software commissioning, data configuration, and equipment maintenance, network monitoring, troubleshooting, and signaling analysis.
- Data communications (Datacom) technology training courses are modularized as per the operators' position setup to offer more pertinent contents and more course options. In addition, Huawei also provides Datacom certification services and helps operators identify and assess employee competence.
- Optical network technology training covers product series and complete network management systems (NMSs) in the four key areas of long-haul and metro WDM, multiservice transmission platform, intelligent optical transmission system, and SONET.

- Access network technology training concentrates on access network development. By gaining a thorough understanding of the operator's training needs, Huawei provides training programs by position and level on optical and copper access products. In addition, Huawei provides extensive professional product and technology training on hotspot technologies such as "substitution of optical fiber for copper wires", "broadband acceleration", "triple-play", and "IPTV".

Application and software technology training proceeds with software product features and customer demands at different levels to provide tailored training courses from business procedures to operation and development and from maintenance basics to expert-level training systems in order to meet customer needs for improving employee skills for different positions at different levels.

### **3.6.2 Learning and Development Solution**

- Blending Learning Solution

Include blending low-cost rapid learning modes such as centralized training, on-site training, enabling on job, web based training, virtual classroom, remote lab and mobile school to make a rapid response to customer demand for technical competence enhancement.

- Technical Competence Test

Offer Technical Competence Test based on the customers' positions and job responsibilities to help operators understand the maintenance competence of its maintenance personnel and provide a basis for making a reasonable work arrangement, personnel selection, and training plan.

- Huawei Certification

Set up a standard professional certification system based on Huawei global practice and the operators' job skill models to serve telecom operators and enterprise customers.

- Technical Competence Assessment and Certification

Customize technical competence standards based on the operators' strategic goals and operating needs as well as the competence model for key technical positions; conduct skill assessment to diagnose the distribution of employee knowledge skills and provide a competence development solution; design a skill certification solution and implement joint certification programs according to the customers' technical competence standards.

- E-learning Solutions

Include E-learning platforms such as Web multimedia course, virtual classroom, online examination, and remote lab that can be used to realize rapid capacity deployment and technology introduction on a large scale and to help operators establish and implement their corporate e-learning plans and strategies based on Huawei practices.

- Managed Learning

The managed Learning Services include training system construction and consulting and training hosting. Training system construction and consulting covers four modules: hardware infrastructure, IT platform, business process, and professional competence. Training hosting means that an operator engages Huawei to manage and operate its training work, and



organize and implement training activities for the operator according to its training needs and plans.

### **3.7 Class Size**

The standard size of a class is 6-12 delegates. This number of delegates is limited according to the availability of equipment in the labs, in order to ensure a good and adequate environment for effective hands-on practice. The size of class shall be finally agreed between Huawei and Purchaser before the start of the course.

### **3.8 Training Pricing**

- Closed Class

Closed classes are priced based on an exclusively owned class with all trainees from a single client, these can be delivered at any Local Training Centre, suitable Purchaser facility (On-site) or Huawei Global Training Center in Shenzhen, China.

- Open Class

Open classes are priced per trainee per day rate. However, this will be subject to minimum class size as defined in the Cancellation Terms. In case the minimum class size is not met, instead of cancelling the training, the purchaser will be offered exclusive rate if the class is made up exclusively of their delegates. For such exclusive classes, the training price offered will be at the same rate as for 4 trainees. Delivery can be at any Local Training Centre or Huawei Global Training Center in Shenzhen, China

## **4 General Conditions**

### **4.1 Validity**

#### **4.1.1 Validity of Proposal**

Huawei offers Training Proposals that will remain valid for a period of 180 days from the date of submission. However our training products are being continuously developed therefore the content and duration of the courses proposed may alter over this period, if any significant changes occur that affect the contents and duration we will update and correct this proposal to suit.

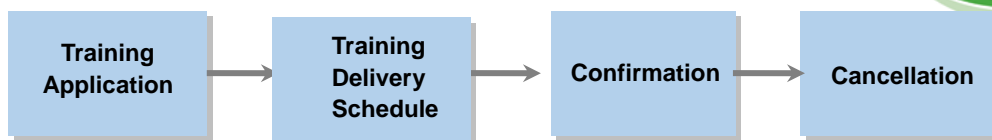
#### **4.1.2 Validity of Training**

The validity period of training is two (2) years from the effective date of the Contract. In case that the Purchaser has not put forward the delivery request to Huawei and resulted in the invalidation on the training program, the training contract will be deemed executed by Huawei.

### **4.2 Course Prerequisites**

To ensure the training quality, the trainees from the Customer shall have suitable qualification according to the requirement of corresponding training program, which is specified in this Proposal.

### **4.3 Training Application and Delivery Procedure**



- Training Application

Training application and delivery is based on the contract between Purchaser and Huawei. Firstly, Purchaser and Huawei shall agree with each other in a contract on training content, number of delegate, training place, and training cost. Then, Purchaser shall inform Huawei the contact information (telephone, fax, email) of one person (single point of contact – SPOC) who is responsible for training arrangement. Huawei would also provide Purchaser the contact information of the Huawei training coordinator. All training arrangements shall be agreed between the contact person on behalf of Purchaser and Huawei training coordinator, and comply with the contract.

In order to ensure availability, the training application must be received minimum 45 days before the commencement of the training.

- Training Delivery Schedule

Huawei will check if the application complies with the contract and response within 5 working days with a suggested training start date/training timetable.

- Confirmation

The Purchaser may confirm or suggest another training start date upon receiving the suggested training schedule. Purchaser shall return a signed version of “Training Confirmation Letter” to Huawei at least 20 calendar days ahead of training. After the training timetable being confirmed, Purchaser shall inform Huawei the name of the delegates, and Huawei will send training notice to all delegates. If the training is outside of Purchaser’s site, Purchaser shall also inform Huawei training coordinator the travel information (Flight number, destination airport and arrival time) of the delegates. Huawei will send people to meet delegates at airport and bring them to reserved hotel. Huawei would also issue invitation letter to delegates and help with the visa application (if visa is required).

- Cancellation

As the Purchaser, you can cancel the training or alter the training date at least one (1) weeks (7 Calendar days) before the start date. Within this 7 Calendar days period, any cancellation or schedule changes will lead to penalties as shown in the table below.

Huawei training centre reserves the right to cancel a booking if we do not receive confirmation i.e. Training Purchase Order, at least 7 Calendar days before scheduled training start date.

For open class, Huawei Training Centre has the right to cancel a booking 7 Calendar days before the start date of the training if the class size is less than 4 delegates (minimum class size). In this case, the Purchaser will be offered the choice to increase payment to upgrade the class to an exclusive class event/increase delegate attendance or to cancel/reschedule their delegates.

Cancellation Penalties Policy, the following cancellation charges will apply:

## Training Plan

Calendar Days	Percentage of fees to be invoiced
> 7 days	0%
0 – 7 days	100%

Once a course has commenced, if a delegate fails to attend or withdraws, the full amount of the course will be payable.

#### 4.4 Training Service Language

All training will be given principally in English with English documentation. If a local language variation is required, this will need to be negotiated and maybe an extra fee will be applied.

#### 4.5 Training Material

Huawei will provide each Trainee with one (1) set of hard copy of Training Materials.

#### 4.6 Training Day

The Training Day normally runs between 9:00 am to 5:00 pm Monday to Friday. When we refer to 'Working Days', this applies to everyday of the week except Saturday, Sunday and local public holidays.

#### 4.7 Training Evaluation

The purpose of evaluation is to ensure that training service delivers against the targets set. Huawei training evaluation system adheres to the four-level evaluation model originally by Donal Kirkpatrick (reaction, learning, behavior and results). Measurements on all levels are adopted according to different kinds of actions need to be taken in different courses.

- Reactions

In this level, how favorably participants react to the training (customer satisfaction) will be measured.

At the end of training delivery in Huawei, training satisfactory survey will be held to evaluate the effectiveness of the training and give immediate feedback about instructors, training materials, training environments, etc.

- Learning

In this level, knowledge, skills and attitudes will be measured. There are exams by the end of each section of Training in Huawei and the training examination falls into theory examination and practice examination and covers all knowledge in the related technical fields for the student.

- Evaluation after delivery

Behavior will measure achievement of performance. Definition of results is dependent upon the goal of the training program. Measurements for these two levels will evaluate before training and after training, allow ample time to observe, consider cost and benefits and only take place according to agreement.

#### 4.8 Intellectual Property Right

All intellectual property rights, including but not limited to copyrights, of soft copy or hard copy of teaching materials, courseware, presentations, customized training proposals, plans, and other materials for training (hereinafter the “training materials”) produced before or during training, belong to Huawei.

Without prior explicit written approval of Huawei, the training material shall not be reproduced, transmitted, communicated or otherwise divulged by the customer or trainees to any third party and persons who are not authorized and/or supposed to have access to or knowledge of such files and information. Without prior explicit written approval of Huawei, training process shall not be recorded, videotaped or photographed by customer or customers. Customers should ensure that students fulfill their obligations under these Terms.

#### 4.9 Commitment and Responsibilities

##### 4.9.1 Training at Huawei Training Center

###### Huawei commitment and responsibilities:

- Huawei will be responsible for providing a fully equipped environment and all necessary training facilities
  - ✧ Air conditioned Training classroom
  - ✧ Training labs
  - ✧ Individual PC or laptop
  - ✧ Canteen
  - ✧ Training commodities and stationery
  - ✧ Tea and coffee, lunch arrangement and refreshments
  - ✧ Chinese styled gift
- Huawei will provide a qualified instructor who is experienced in teaching classes in English or the local language upon agreement
- Huawei will provide all the training manuals and exercises
- Examination for delegates if necessary
- Huawei will issue certificates for the delegates who have passed the exam
- Huawei can help to arrange hotel and transportation if requested by the Purchaser; all expenses will be recharged to client.
- Huawei will give a training summary report to the Purchaser training contact person after the training has finished if required

###### Purchaser’s commitment

- Purchaser will provide a contact person (the Training Project Manager).
- Purchaser ensures that during the training, the delegates will be present and punctual for training, not disturbed by daily work.

- Purchaser should be responsible for medical expenses of their delegates in case of incidents during the training.
- Purchaser will be responsible for the delegates who haven't passed their exam due to absence from the course

#### 4.9.2 On-Site Training (Training at Purchaser's Premise)

##### **Huawei commitment and responsibilities:**

- Huawei will provide a qualified instructor who is experienced in teaching classes in English or the local language upon agreement.
- Huawei will provide all the training manuals and exercises
- Huawei will provide exams for the delegates if necessary
- Huawei will issue certificates for delegates who have past exam
- Huawei will give a training summary report to the Purchaser training interface person after the training has finished

##### **Purchaser's commitment and responsibilities:**

- Purchaser will be responsible for providing a suitable environment and all necessary training facilities. The equipment that customer provide for training is suggested not have any traffic, because the instructor is impossible to be responsible for any traffic down happed during the training.
- Training classroom and commodities (projector, white board, markers)
  - ✧ Training stationery
  - ✧ PC ( maximum 2 persons share 1 PC)
  - ✧ Training equipment lab if necessary
  - ✧ Delegates accommodation, lunch & refreshment
- Purchaser should assign a contact person who is responsible for all the training facilities.
- Purchaser will ensure that the delegates will not leave the training room whilst the instructor is teaching.

**End of Document**