



Customer Training Catalog Training Programs Access Network



HUAWEI
HUAWEI Learning Service
2015



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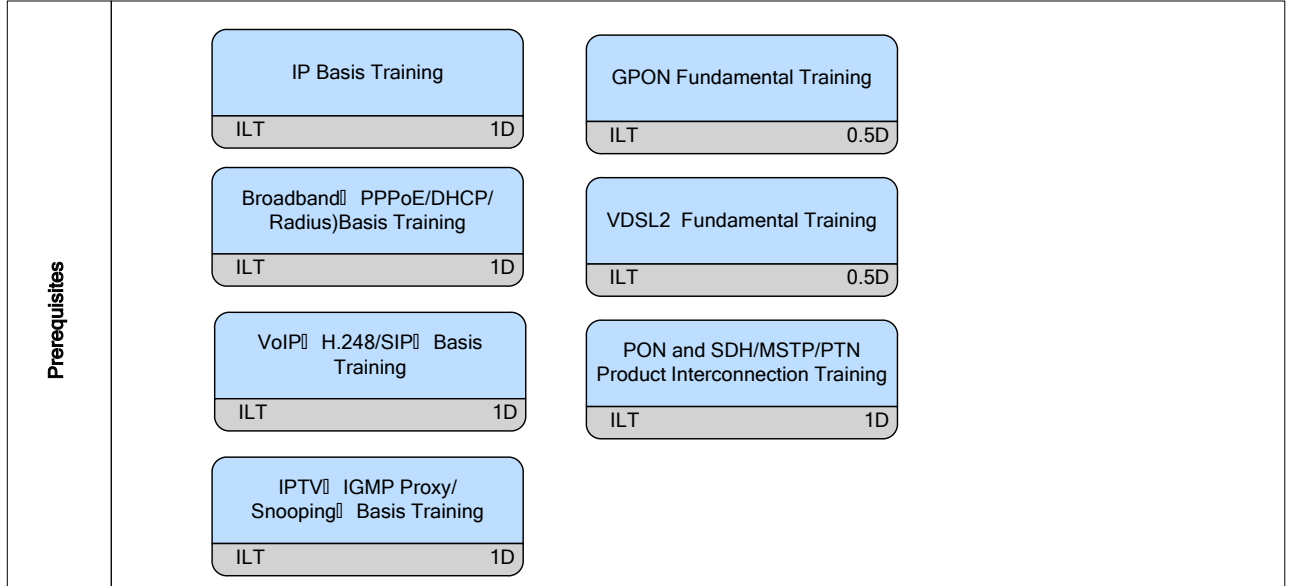
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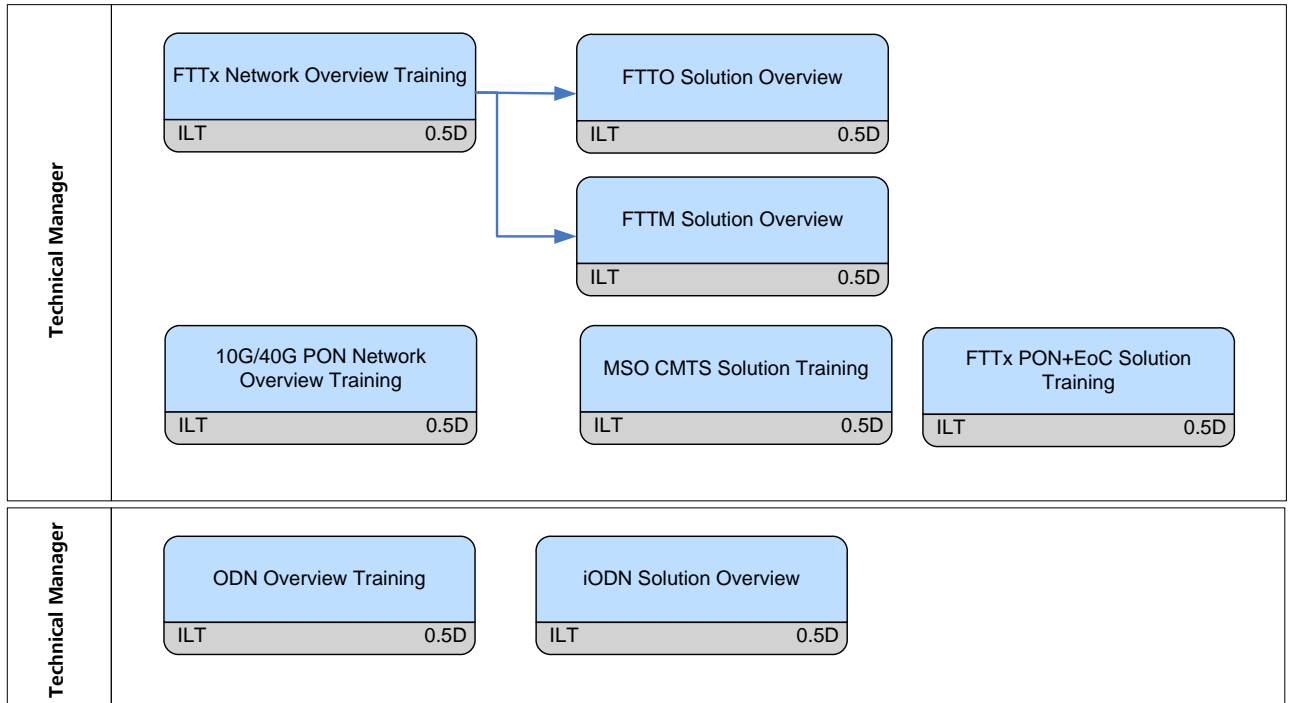
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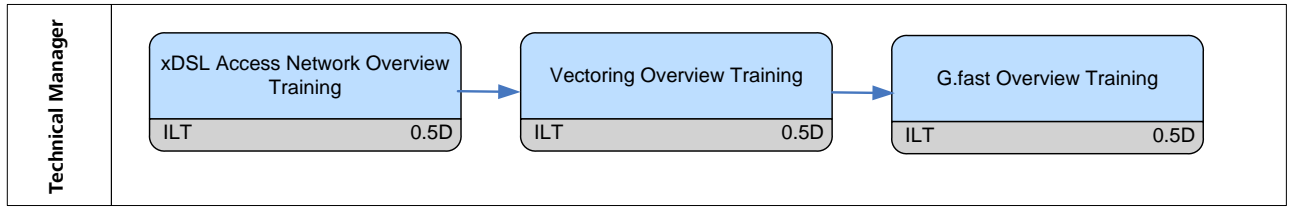
1 Training Path

1.1.1 Principle



1.1.2 Evolution and Trends

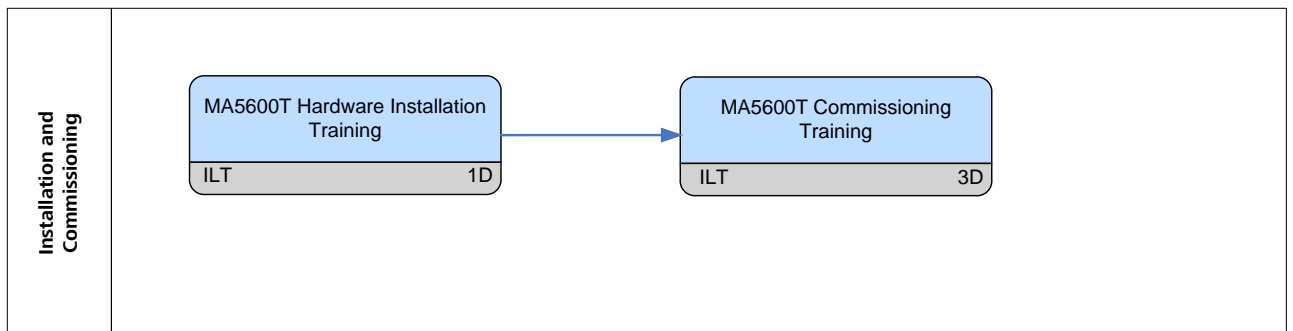




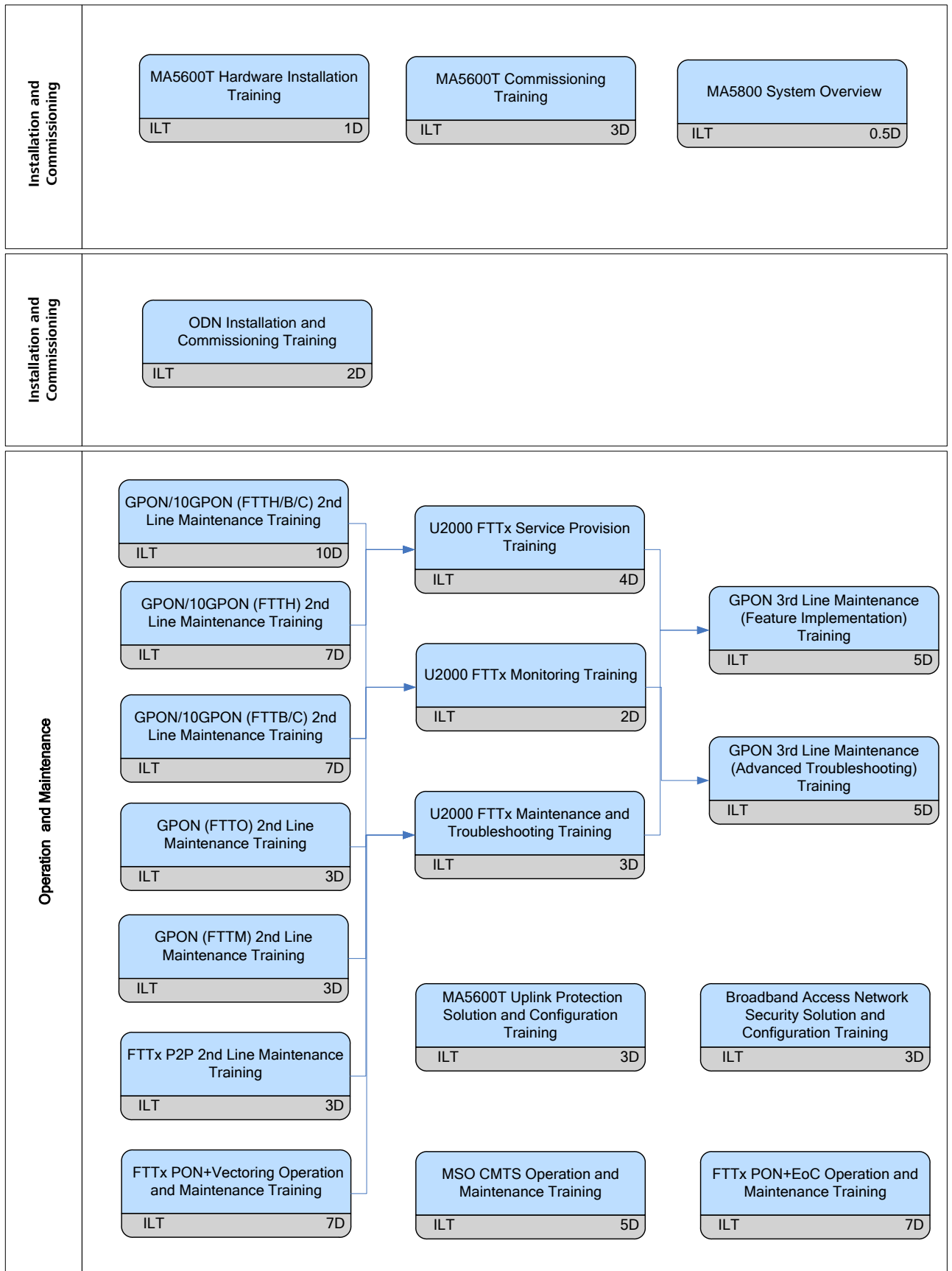
1.1.3 Planning

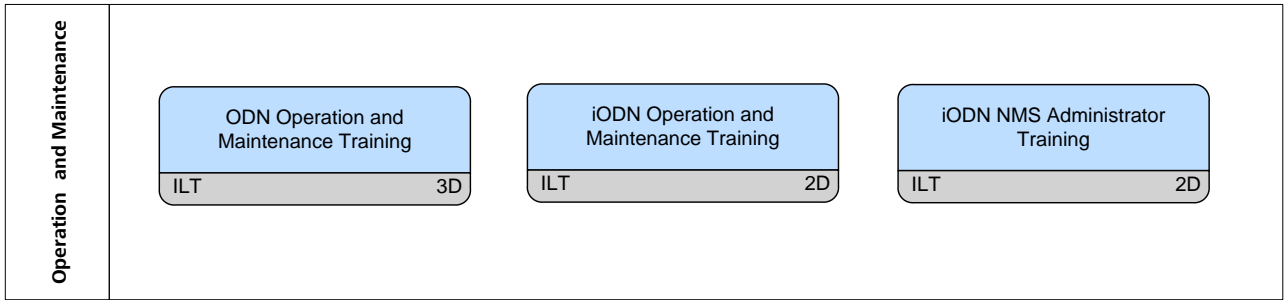


1.1.4 MA5600T Products

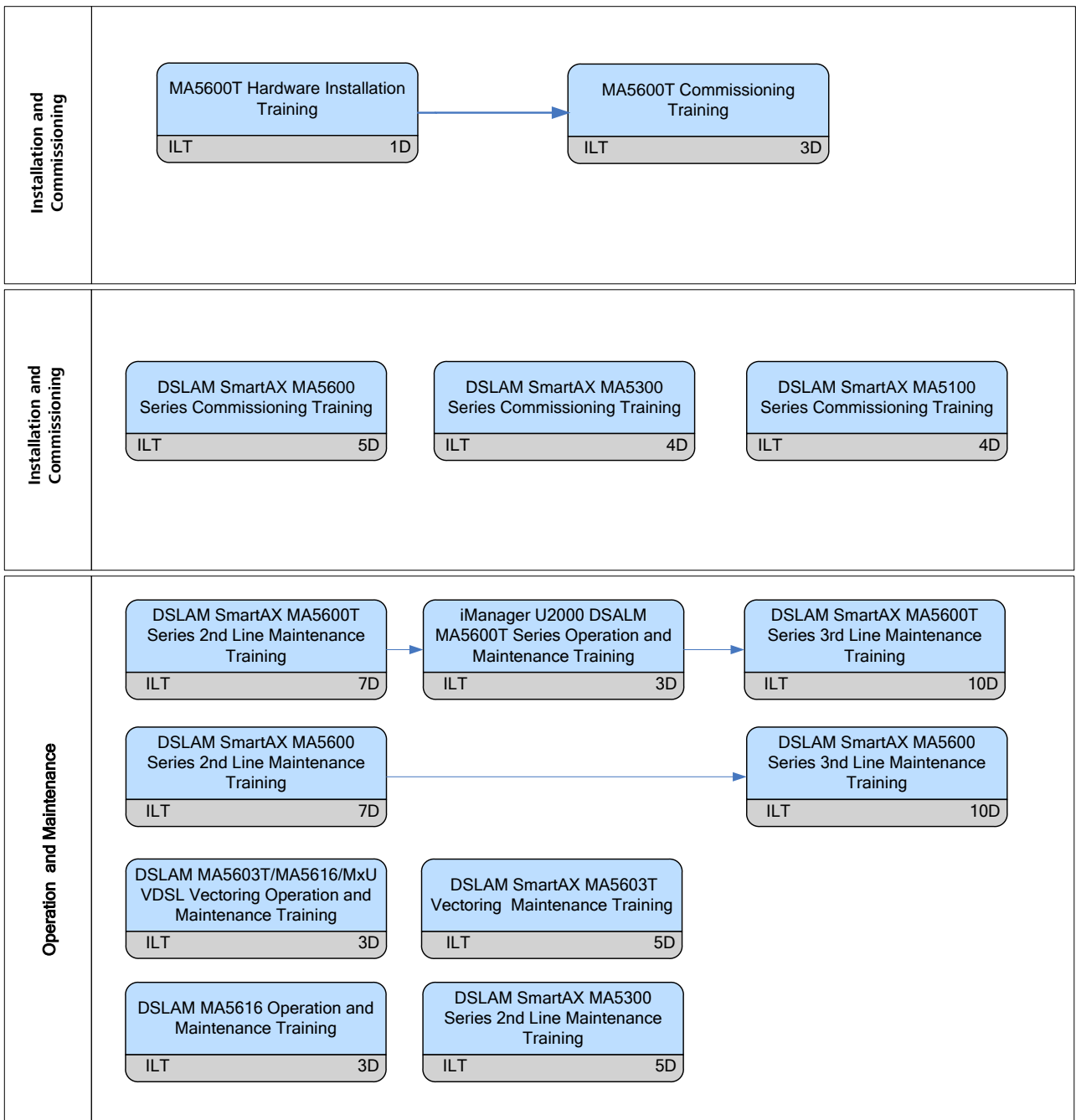


1.1.5 FTTx PON Products

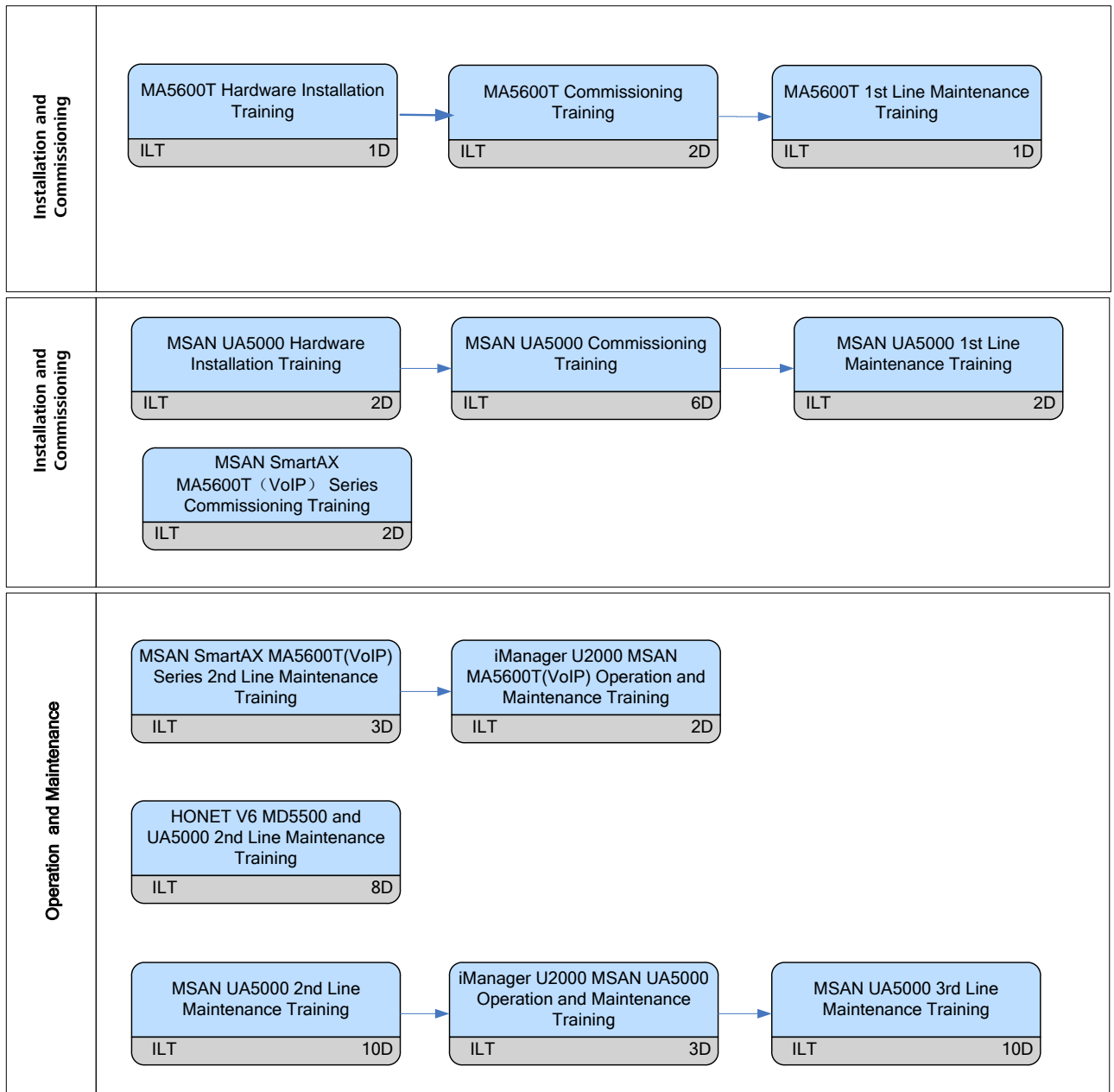




1.1.6 DSLAM Products



1.1.7 MSAN Products



1.1.8 BITS

Operation and Maintenance	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #ADD8E6; padding: 2px; text-align: center;">SYNLOCK V3 2nd Line Maintenance Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> ILT 3D </div> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #ADD8E6; padding: 2px; text-align: center;">SYNLOCK V5 2nd Line Maintenance Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> ILT 2D </div> </div>	<div style="border: 1px solid black; padding: 5px;"> <div style="background-color: #ADD8E6; padding: 2px; text-align: center;">SYNLOCK T6020 2nd Line Maintenance Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> ILT 3D </div> </div>
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1.1.9 OSS

Operation and Maintenance	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #ADD8E6; padding: 2px; text-align: center;">iManager N2510 Copper Software Test Operation Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> ILT 3D </div> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #ADD8E6; padding: 2px; text-align: center;">iManager N2510 OLS Operation Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> ILT 3D </div> </div>
	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #ADD8E6; padding: 2px; text-align: center;">iManager N2510 Copper Hardware Test Operation Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> ILT 3D </div> </div>	<div style="border: 1px solid black; padding: 5px;"> <div style="background-color: #ADD8E6; padding: 2px; text-align: center;">iManager N2510 Administration Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> ILT 3D </div> </div>

1.1.10 Access Technology Online Training (WBT)

Prerequisites	<div style="border: 1px dashed black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #90EE90; padding: 2px; text-align: center;">GPON Fundamental Training</div> <div style="display: flex; justify-content: space-between; font-size: small;"> WBT (Pre-learning) 1H </div> </div>	<div style="border: 1px dashed black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #90EE90; padding: 2px; text-align: center;">ODN and iODN Solution Overview</div> <div style="display: flex; justify-content: space-between; font-size: small;"> WBT (Pre-learning) 1H </div> </div>
	<div style="border: 1px dashed black; padding: 5px; margin-bottom: 5px;"> <div style="background-color: #90EE90; padding: 2px; text-align: center;">Vectoring Overview</div> <div style="display: flex; justify-content: space-between; font-size: small;"> WBT (Pre-learning) 1H </div> </div>	<div style="border: 1px dashed black; padding: 5px;"> <div style="background-color: #90EE90; padding: 2px; text-align: center;">FTTx System Overview</div> <div style="display: flex; justify-content: space-between; font-size: small;"> WBT (Pre-learning) 1H </div> </div>

1.2 Required Training Programs

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

Training Program	Program Level	Duration (workdays)	Training Location	Class Size
------------------	---------------	---------------------	-------------------	------------

Principle				
IP Basis Training	II	1		6 ~ 12
Broadband(PPPoE/DHCP/Radius) Basis Training	II	1		6 ~ 12
IPTV(IGMP Proxy/Snooping) Basis Training	II	1		6 ~ 12
VoIP(H.248/SIP) Basis Training	II	1		6 ~ 12
PON and SDH/MSTP/PTN Product Interconnection Training	II	1		6 ~ 12
VDSL2 Fundamental Training	II	0.5		6 ~ 12
GPON Fundamental Training	II	0.5		6 ~ 12
Evolution and Trends				
FTTx Network Overview Training	II	1		6 ~ 12
FTTO Solution Overview Training	II	0.5		6 ~ 12
FTTM Solution Overview Training	II	0.5		6 ~ 12
xDSL Access Network Overview Training	II	0.5		6 ~ 12
ODN Overview Training	II	0.5		6 ~ 12
10G/40G PON Network Overview Training	II	0.5		6 ~ 12
Vectoring Overview Training	II	0.5		6 ~ 12
G.fast Overview Training	II	0.5		6 ~ 12
iODN Solution Overview Training	II	0.5		6 ~ 12
FTTx PON+EoC Solution Training	III	0.5		6 ~ 12
MSO CMTS Solution Training	II	0.5		6 ~ 12
Planning				
FTTx Planning Training	IV	3		6 ~ 12
ODN Planning Training	IV	3		6 ~ 12
iODN Planning Training	IV	3		6 ~ 12
DSLAM SmartAX MA5600T Series Planning Training	IV	3		6 ~ 12
MSAN SmartAX MA5600T(VoIP) Series Planning Training	IV	2		6 ~ 12
MSAN UA5000 Planning Training	IV	3		6 ~ 12
MA5600T Products				

MA5600T Hardware Installation Training	I	2		6 ~ 12
MA5600T Commissioning Training	II	5		6 ~ 12
FTTx PON Products				
MA5800 System Overview	I	0.5		6 ~ 12
GPON/10GPON (FTTH/B/C) 2nd Line Maintenance Training	II	10		6 ~ 12
GPON/10GPON (FTTH) 2nd Line Maintenance Training	II	7		6 ~ 12
GPON/10GPON (FTTB/C) 2nd Line Maintenance Training	II	7		6 ~ 12
GPON (FTTO) 2nd Line Maintenance Training	II	3		6 ~ 12
GPON (FTTM) 2nd Line Maintenance Training	II	3		6 ~ 12
FTTx P2P 2nd Line Maintenance Training	II	4		6 ~ 12
FTTx PON+Vectoring Operation and Maintenance Training	II	7		6 ~ 12
GPON 3rd Line Maintenance (Feature Implementation) Training	III	5		6 ~ 12
GPON 3rd Line Maintenance (Advanced Troubleshooting) Training	III	5		6 ~ 12
MA5600T Uplink Protection Solution and Configuration Training	III	3		6 ~ 12
Broadband Access Network Security Solution and Configuration Training	III	3		6 ~ 12
U2000 FTTx Service Provision Training	II	4		6 ~ 12
U2000 FTTx Monitoring Training	II	2		6 ~ 12
U2000 FTTx Maintenance and Troubleshooting Training	III	3		6 ~ 12
ODN Installation and Commissioning Training	II	2		6 ~ 12
ODN Operation and Maintenance Training	II	3		6 ~ 12
iODN Operation and Maintenance Training	II	2		6 ~ 12
iODN NMS Administrator Training	II	2		6 ~ 12
MSO CMTS Operation and Maintenance Training	II	5		6 ~ 12
FTTx PON+EoC Operation and Maintenance Training	III	5		6 ~ 12
DSLAM Products				
DSLAM SmartAX MA5603T Vectoring Maintenance Training	II	5		6 ~ 12
DSLAM SmartAX MA5600T Series 2nd Line Maintenance Training	II	7		6 ~ 12

DSLAM SmartAX MA5600T Series 3rd Line Maintenance Training	III	10		6 ~ 12
DSLAM MA5603T/MA5616/MxU VDSL Vectoring Operation and Maintenance Training	II	3		6 ~ 12
DSLAM MA5616 Operation and Maintenance Training	II	3		6 ~ 12
iManager U2000 DSALM MA5600T Series Operation and Maintenance Training	II	3		6 ~ 12
DSLAM SmartAX MA5100 Series Commissioning Training	II	4		6 ~ 12
DSLAM SmartAX MA5300 Series Commissioning Training	II	4		6 ~ 12
DSLAM SmartAX MA5600 Series Commissioning Training	II	5		6 ~ 12
DSLAM SmartAX MA5100 Series 2nd Line Maintenance Training	II	5		6 ~ 12
DSLAM SmartAX MA5300 Series 2nd Line Maintenance Training	II	5		6 ~ 12
DSLAM SmartAX MA5600 Series 2nd Line Maintenance Training	II	7		6 ~ 12
DSLAM SmartAX MA5600 Series 3rd Line Maintenance Training	III	10		6 ~ 12
MSAN Products				
MSAN SmartAX MA5600T(VoIP) Series 2nd Line Maintenance Training	II	3		6 ~ 12
MSAN SmartAX MA5600T(VoIP) Series Commissioning Training	II	2		6 ~ 12
iManager U2000 MSAN MA5600T(VoIP) Operation and Maintenance Training	II	2		6 ~ 12
MSAN UA5000 Hardware Installation Training	I	2		6 ~ 12
MSAN UA5000 Commissioning Training	II	6		6 ~ 12
MSAN UA5000 1st Line Maintenance Training	I	2		6 ~ 12
MSAN UA5000 2nd Line Maintenance Training	II	10		6 ~ 12
MSAN UA5000 3rd Line Maintenance Training	III	10		6 ~ 12
HONET V6 MD5500 and UA5000 2nd Line Maintenance Training	II	8		6 ~ 12
iManager U2000 MSAN UA5000 Operation and Maintenance Training	II	3		6 ~ 12
BITS				
SYNLOCK V3 2nd Line Maintenance Training	II	3		6 ~ 12
SYNLOCK V5 2nd Line Maintenance Training	II	2		6 ~ 12

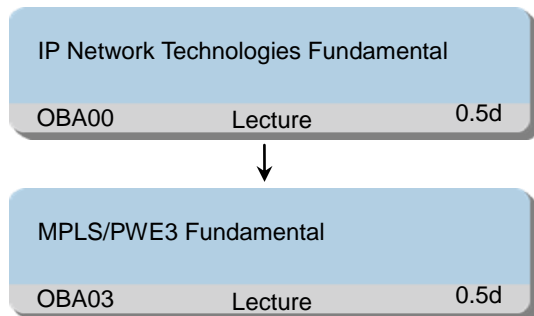
SYNLOCK T6020 2nd Line Maintenance Training	II	3		6 ~ 12
OSS				
iManager N2000 BMS Administration Training	II	3		6 ~ 12
iManager N2000 BMS Advanced Operation and Maintenance Training	III	5		6 ~ 12
iManager N2000 BMS Operation Training (GPON)	II	3		6 ~ 12
iManager N2000 BMS Operation Training (DSLAM)	II	3		6 ~ 12
iManager N2000 BMS Operation Training (MSAN)	II	3		6 ~ 12
iManager N2510 Copper Software Test Operation Training	II	3		6 ~ 12
iManager N2510 Copper Hardware Test Operation Training	II	3		6 ~ 12
iManager N2510 OLS Operation Training	II	3		6 ~ 12
iManager N2510 Administration Training	II	3		6 ~ 12
Access Technology Online Training (WBT)				
GPON Fundamentals(WBT)	II	1 h		No limit
FTTx System Overview(WBT)	II	1 h		No limit
Vectoring Overview (WBT)	II	1		No limit
ODN and iODN Solution Overview (WBT)	II	1		No limit

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

1.3 Principle Training Programs

1.3.1 IP Basis Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe MPLS service implementation process
- Describe PWE3 service implementation process

Duration

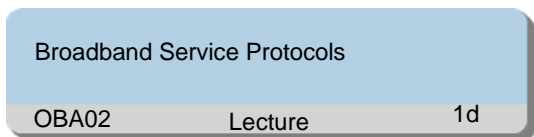
1 working day

Class Size

Min 6, Max 12

1.3.2 Broadband(PPPoE/DHCP/Radius) Basis Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

On completion of this program, the participants will

be able to:

- Describe function and message of PPP and PPPoE protocol
- Describe function and message of RADIUS protocol
- Describe function and message of DHCP protocol

Duration

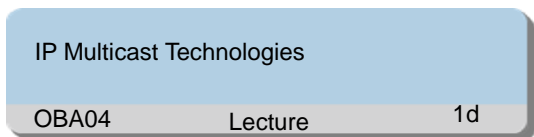
1 working day

Class Size

Min 6, Max 12

1.3.3 IPTV(IGMP Proxy/Snooping) Basis Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

On completion of this program, the participants will

be able to:

- Describe multicast definition and application
- Describe multicast network structure
- Describe multicast service implementation process
- Describe function and message of IGMP protocol

Duration

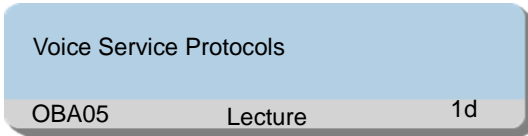
1 working day

Class Size

Min 6, Max 12

1.3.4 VoIP(H.248/SIP) Basis Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

On completion of this program, the participants will

be able to:

- Describe SIP function and position in network
- Describe SIP typical call flow
- Describe H.248 function and position in network
- Describe H.248 message structure and typical call flow

Duration

1 working day

Class Size

Min 6, Max 12

1.3.5 PON and SDH/MSTP/PTN Product Interconnection Training

Training Path

PON and SDH/MSTP/PTN Product Interconnection		
OBA01	Lecture	1d

Target Audience

- Technical Support Engineers
- Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe the structure of optical fiber
- Calculation of the optical fiber optical power

attenuation

- Calculation of the sub-optical power attenuation
- Describe a variety of fiber optic connectors and passive optical devices
- Description of the fiber optic cable related knowledge
- Description of SDH features and functions
- List SDH network protection
- Describe WDM principle and OTN frame structure

Duration

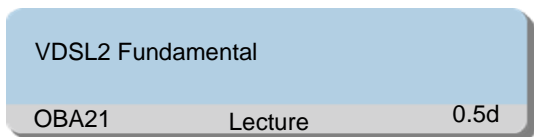
1 working day

Class Size

Min 6, Max 12

1.3.6 VDSL2 Fundamental Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe VDSL2 orientation and networking
- Describe VDSL2 modulation mode
- Describe VDSL2 band plans and profiles
- Describe VDSL2 noise dealing principle
- Describe VDSL2 packet transfer mode

Duration

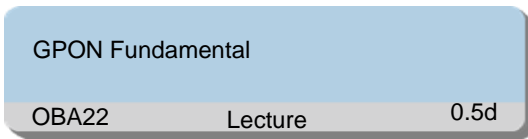
0.5 working day

Class Size

Min 6, Max 12

1.3.7 GPON Fundamental Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components

- Describe the upstream and downstream technology
- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures
- Describe the QoS and security solution in GPON
- Describe ONT management measures

Duration

0.5 working day

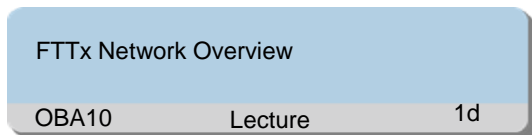
Class Size

Min 6, Max 12

1.4 Evolution and Trends Training Programs

1.4.1 FTTx Network Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe FTTx features and orientation
- Describe FTTx network solution for FTTH/B/C/O/M scenarios
- Describe FTTx service solution, such as high speed Internet service, NGN/IMS services, enterprise private line services, mobile back haul services, etc.
- Describe FTTx OAM solution

Duration

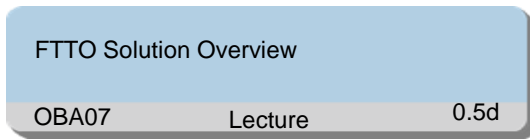
1 working day

Class Size

Min 6, Max 12

1.4.2 FTTO Solution Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe FTTx features and orientation
- Describe FTTx network solution for FTTO scenario
- Describe FTTO service solution, such as high speed Internet service, NGN/IMS services, enterprise private line services, etc.
- Describe FTTO OAM solution

Duration

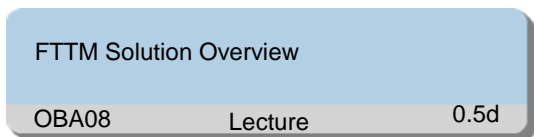
0.5 working day

Class Size

Min 6, Max 12

1.4.3 FTTM Solution Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe FTTx features and orientation
- Describe FTTx network solution for FTTM scenario
- Describe FTTM service solution, such as enterprise private line services, mobile back haul services, etc.
- Describe FTTM OAM solution

Duration

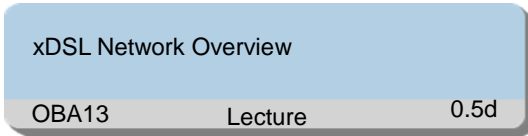
0.5 working day

Class Size

Min 6, Max 12

1.4.4 xDSL Access Network Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe xDSL network solution
- Describe xDSL service solution
- Describe function of components in xDSL network
- Describe xDSL modulation mode
- Describe xDSL band plans and profiles
- Describe xDSL service encapsulation process

Duration

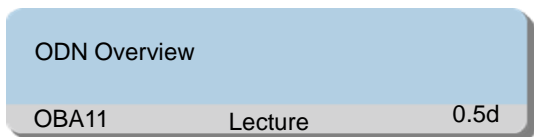
0.5 working day

Class Size

Min 6, Max 12

1.4.5 ODN Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe ODN network solution
- Describe ODN typical equipment
- Describe ODN maintenance instrument

Duration

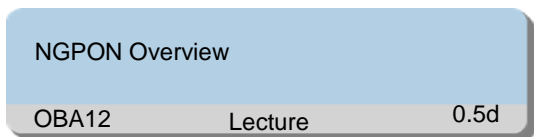
0.5 working day

Class Size

Min 6, Max 12

1.4.6 10G/40G PON Network Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network and GPON

Objectives

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

- Describe NGPON features
- Describe NGPON implementation principle
- Describe NGPON network solution

Duration

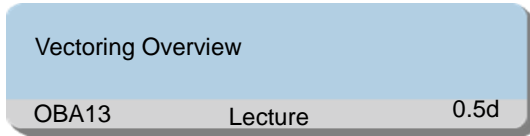
0.5 working day

Class Size

Min 6, Max 12

1.4.7 Vectoring Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network and GPON

Objectives

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

- Describe vectoring technology features
- Describe vectoring key technology
- Describe vectoring network solution

Duration

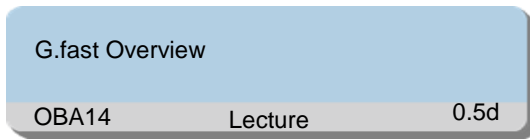
0.5 working day

Class Size

Min 6, Max 12

1.4.8 G.fast Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network and GPON

Objectives

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

- Describe G.fast technology features
- Describe G.fast key technology
- Describe G.fast network solution

Duration

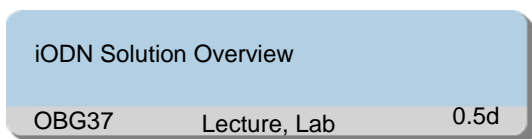
0.5 working day

Class Size

Min 6, Max 12

1.4.9 iODN Solution Overview Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network and GPON

Objectives

On completion of this program, the participants will

be able to:

- Describe ODN Network Composing
- Describe ODN Network Maintenance Challenge
- Describe iODN Network Structure
- Describe iODN Solution Module
- Outline iODN advantage

Duration

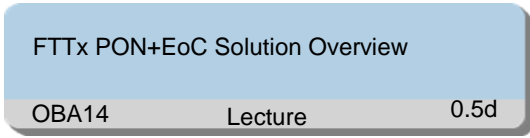
0.5 working day

Class Size

Min 6, Max 12

1.4.10 FTTx PON+EoC Solution Training

Training Path



Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network

Objectives

On completion of this program, the participants will

be able to:

- Describe traditional cable network Introduction
- Describe CMTS introduction and CMTS network
- Describe PON+EoC solution overview
- Outline the difference between CMTS and xPON

Duration

0.5 working day

Class Size

Min 6, Max 12

1.4.11 MSO CMTS Solution Training

Training Path

MSO CMTS Solution Overview		
OBA14	Lecture	0.5d

Target Audience

Technical Manager

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe traditional cable network Introduction
- Describe CMTS introduction
- Describe MSO CMTS solution

Duration

0.5 working day

Class Size

Min 6, Max 12

1.5 Planning Training Programs

1.5.1 FTTx Planning Training

Training Path

GPON Planning		
OBG10	Lecture	3d

Target Audience

Planning Engineers

Prerequisites

- Be familiar with basic knowledge about telecommunications and data communications
- Be familiar with GPON technology
- At least 1 years experience in telecommunication network planning

Objectives

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

- Describe GPON network architecture
- Describe GPON network design background

- Outline OLT/ONU product functions and specification
- Outline OLT/ONU hardware architecture and specification
- Design GPON network for multiple services
- Design hardware system
- Plan bandwidth for internet service
- Plan bandwidth for leased line service
- Plan bandwidth for VoIP service
- Plan bandwidth for IPTV service
- Plan VLAN, IP and site name
- Plan QoS
- Design security and protection solution
- Design OAM solution

Duration

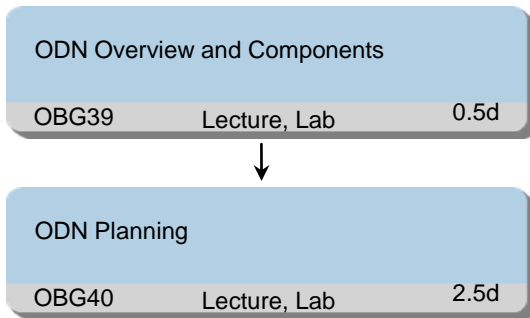
3 working days

Class Size

Min 6, Max 12

1.5.2 ODN Planning Training

Training Path



Target Audience

Planning Engineers

Prerequisites

- Be familiar with basic knowledge about telecommunications and data communications
- Be familiar with GPON Network
- At least 1 years experience in telecommunication network planning

Objectives

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

- Describe ODN architecture
- Describe ODF function and application
- Describe FDT function and application
- Describe FAT function and application
- Describe Closure function and application

- Describe Splitter function and application
- Describe TB/ATB/CTB function and application
- Describe ODN project lifecycle
- Outline ODN planning process
- Outline ODN planning considerations
- Outline ODN topology design
- Describe ODN splitting strategy
- Describe ODN protection design
- Describe ODN design scenario models
- Describe ODN Cable Plan Considerations
- Perform ODN Cable Route Design
- Perform ODN Cable Core Design
- Perform ODN Cable Type Selection
- Describe ODN civil work methodology
- Outline ODN duct type
- Outline ODN manhole and handhole
- Describe ISP typical scenarios and solutions
- Outline ISP modules and workflow
- Describe ODN Case

Duration

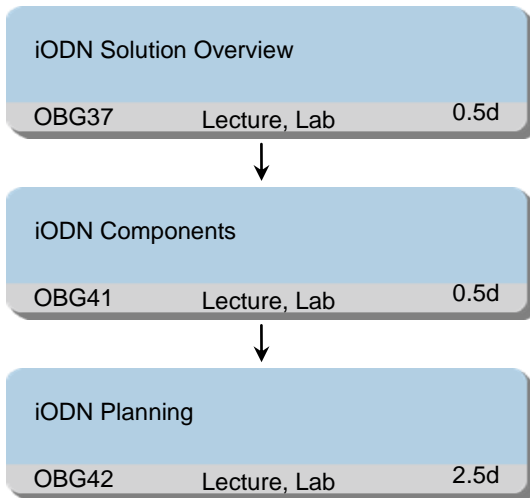
3 working days

Class Size

Min 6, Max 12

1.5.3 iODN Planning Training

Training Path



Target Audience

Planning Engineers

Prerequisites

- Be familiar with basic knowledge about telecommunications and data communications
- Be familiar with GPON Network
- At least 1 years experience in telecommunication network planning

Objectives

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

- Describe ODN Network Composing
- Describe ODN Network Maintenance Challenge
- Describe iODN Network Structure
- Describe iODN Solution Module
- Outline iODN advantage
- Describe ODN architecture
- Describe iODF function and application
- Describe iFDT function and application
- Describe iField component
- Describe iODN planning process
- Outline iODN topology design
- Describe iODN splitting strategy
- Describe iODN protection design
- Describe iODN design scenario models

Duration

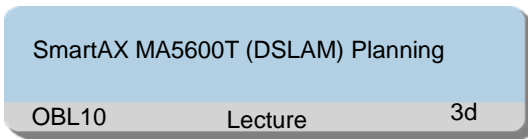
3 working days

Class Size

Min 6, Max 12

1.5.4 DSLAM SmartAX MA5600T Series Planning Training

Training Path



Target Audience

Planning Engineers

Prerequisites

- Be familiar with basic knowledge about telecommunications and data communications
- Be familiar with DSLAM technology
- At least 1 years experience in telecommunication network planning

Objectives

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

- Design DSLAM MA5600T network to carry multiple service
- Plan DSLAM MA5600T hardware system
- Plan DSLAM MA5600T service bandwidth
- Plan VLAN, IP and site name
- Plan DSLAM MA5600T QoS and security
- Plan OAM solution for DSLAM MA5600T

Duration

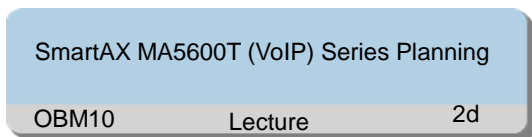
3 working days

Class Size

Min 6, Max 12

1.5.5 MSAN SmartAX MA5600T(VoIP) Series Planning Training

Training Path



Target Audience

Planning Engineers

Prerequisites

- Be familiar with basic knowledge about telecommunications and data communications
- Be familiar with VoIP technology
- At least 1 years experience in telecommunication network planning

Objectives

On completion of this program, the participants will

be able to:

- Design MA5600T(VoIP) network to carry VoIP service
- Plan MA5600T(VoIP) hardware system
- Plan MA5600T(VoIP) service bandwidth
- Plan VLAN, IP and site name
- Plan VoIP interface parameters
- Plan MA5600T(VoIP) QoS and security
- Plan OAM solution for MA5600T(VoIP)

Duration

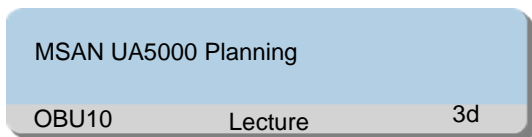
2 working days

Class Size

Min 6, Max 12

1.5.6 MSAN UA5000 Planning Training

Training Path



Target Audience

Planning Engineers

Prerequisites

- Be familiar with basic knowledge about telecommunications and data communications
- Be familiar with MSAN technology
- At least 1 years experience in telecommunication network planning

Objectives

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

- Describe system structure
- Describe service implementation and solution
- Plan hardware system
- Plan bandwidth for internet service, VoIP service, and multicast service
- Plan VLAN, PVC, IP and site name
- Plan V5 or MG Interface

Duration

3 working days

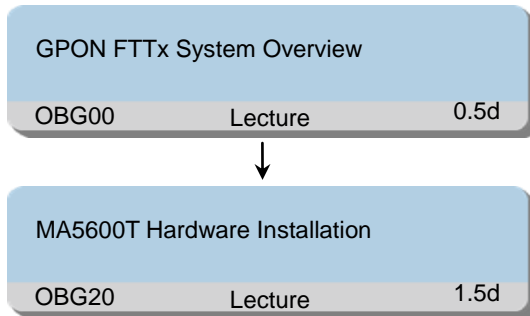
Class Size

Min 6, Max 12

1.6 MA5600T Products Training Programs

1.6.1 MA5600T Hardware Installation Training

Training Path



Target Audience

Installation technician

Prerequisites

- A basic understanding of telecommunication equipment installation

Objectives

On completion of this program, the participants will

be able to:

- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Install MA5600T devices cabinet, frame and board properly
- Perform MA5600T devices cable routing and termination properly
- Identify the cautions and facts which may affect MA5600T system running due to improperly installation

Duration

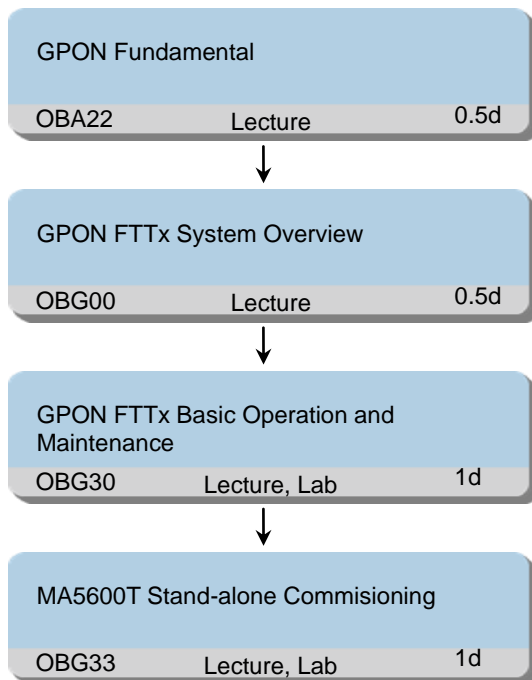
2 working days

Class Size

Min 6, Max 12

1.6.2 MA5600T Commissioning Training

Training Path



Target Audience

System and service Commissioning Technicians

Prerequisites

- A basic understanding of telecommunication and data communication
- At least 1 year operation and maintenance experience of the telecommunication equipment

Objectives

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

- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components
- Describe the upstream and downstream technology
- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures
- Describe the QoS and security solution in GPON
- Describe ONT management measures
- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Perform the hardware commissioning, stand-alone commissioning,

- Perform the commissioning verification
- Perform the hardware commissioning, stand-alone commissioning,
- Perform the commissioning verification

Duration

4 working days

Class Size

Min 6, Max 12

1.7 FTTx PON Products Training Programs

1.7.1 MA5800 System Overview

Training Path

MA5800 System Overview		
OBG00	Lecture	0.5d

Target Audience

System and service Commissioning Technicians

Prerequisites

- A basic understanding of telecommunication and data communication
- At least 1 year operation and maintenance experience of the telecommunication equipment

Objectives

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

- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables of MA5800
- Describe MA5800 application solutions

Duration

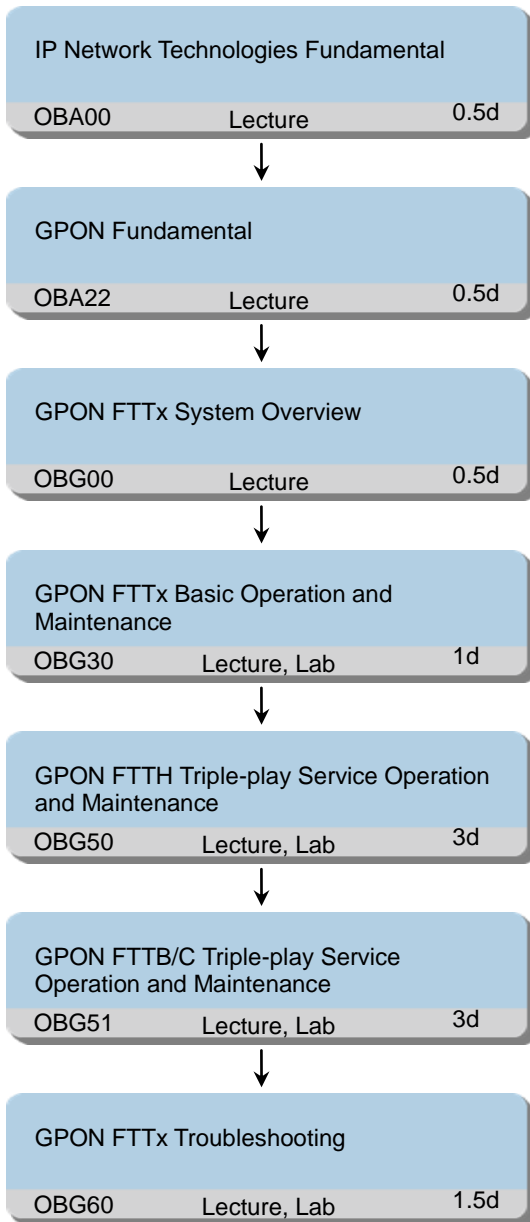
0.5 working day

Class Size

Min 6, Max 12

1.7.2 GPON/10GPON (FTTH/B/C) 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

On completion of this program, the participants will

be able to:

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components
- Describe the upstream and downstream technology
- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures
- Describe the QoS and security solution in GPON
- Describe ONT management measures
- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Describe GPON FTTH service implementation process
- Perform GPON FTTH HSI service configuration, maintenance and verification.
- Perform GPON FTTH VoIP service configuration, maintenance and verification
- Perform GPON FTTH IPTV service configuration, maintenance and verification
- Describe GPON FTTB/C networking
- Perform GPON FTTB/C HSI service configuration, maintenance and verification

- Perform GPON FTTB/C VoIP service configuration, maintenance and verification
- Perform GPON FTTB/C IPTV service configuration, maintenance and verification
- Troubleshooting hardware and software system
- Troubleshooting ONU
- Troubleshooting internet access service

- Troubleshooting multicast service
- Troubleshooting voice service

Duration

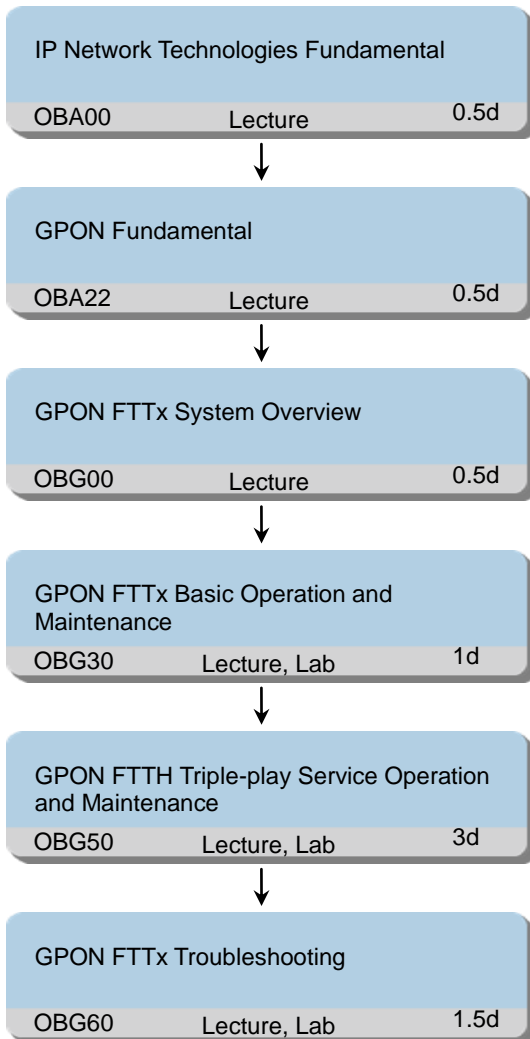
10 working days

Class Size

Min 6, Max 12

1.7.3 GPON/10GPON (FTTH) 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP

- Describe VLAN forwarding process
- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components
- Describe the upstream and downstream technology
- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures
- Describe the QoS and security solution in GPON
- Describe ONT management measures
- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Describe GPON FTTH service implementation process
- Perform GPON FTTH HSI service configuration, maintenance and verification.
- Perform GPON FTTH VoIP service configuration, maintenance and verification
- Perform GPON FTTH IPTV service configuration, maintenance and verification
- Troubleshooting hardware and software system
- Troubleshooting ONU
- Troubleshooting internet access service
- Troubleshooting multicast service
- Troubleshooting voice service

Duration

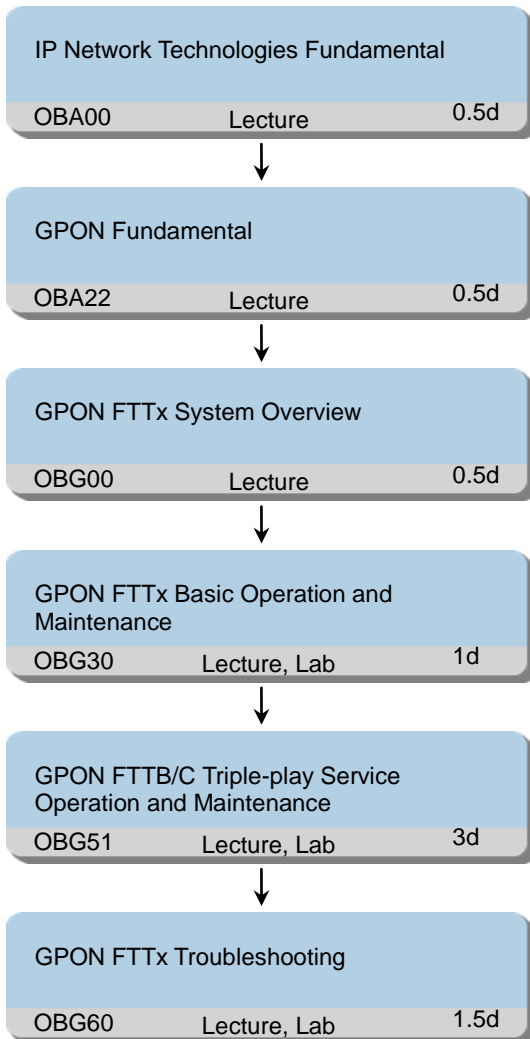
7 working days

Class Size

Min 6, Max 12

1.7.4 GPON/10GPON (FTTB/C) 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP

- Describe VLAN forwarding process
- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components
- Describe the upstream and downstream technology
- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures
- Describe the QoS and security solution in GPON
- Describe ONT management measures
- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Describe GPON FTTB/C networking
- Perform GPON FTTB/C HSI service configuration, maintenance and verification
- Perform GPON FTTB/C VoIP service configuration, maintenance and verification
- Perform GPON FTTB/C IPTV service configuration, maintenance and verification
- Troubleshooting hardware and software system
- Troubleshooting ONU
- Troubleshooting internet access service
- Troubleshooting multicast service
- Troubleshooting voice service

Duration

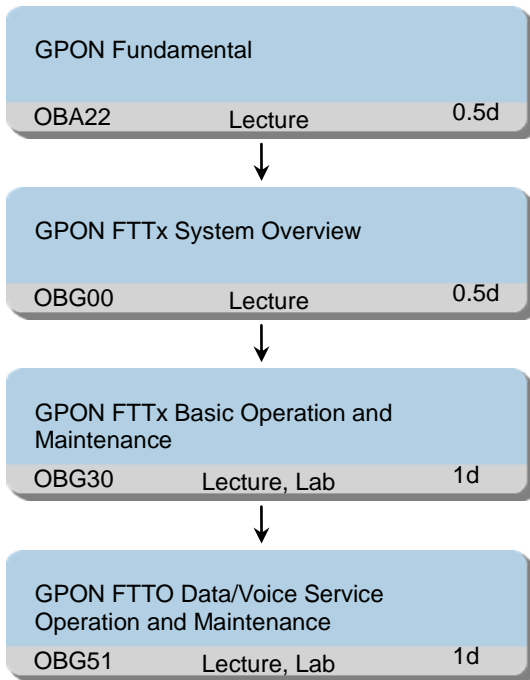
7 working days

Class Size

Min 6, Max 12

1.7.5 GPON (FTTO) 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

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

- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components
- Describe the upstream and downstream technology

- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures
- Describe the QoS and security solution in GPON
- Describe ONT management measures
- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Describe GPON FTTO networking
- Perform GPON FTTO data service configuration, maintenance and verification
- Perform GPON FTTO VoIP service configuration, maintenance and verification
- Troubleshooting GPON FTTO data/voice service

Duration

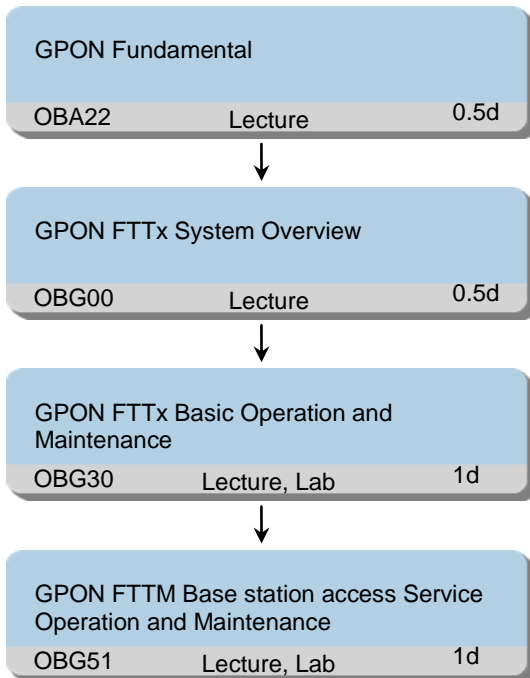
3 working days

Class Size

Min 6, Max 12

1.7.6 GPON (FTTM) 2nd Line Maintenance Training

Training Path



- Describe the QoS and security solution in GPON
- Describe ONT management measures
- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Describe GPON FTTM networking
- Perform GPON FTTM base station access service configuration, maintenance and verification
- Troubleshooting GPON FTTM base station service

Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

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

- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components
- Describe the upstream and downstream technology
- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures

Duration

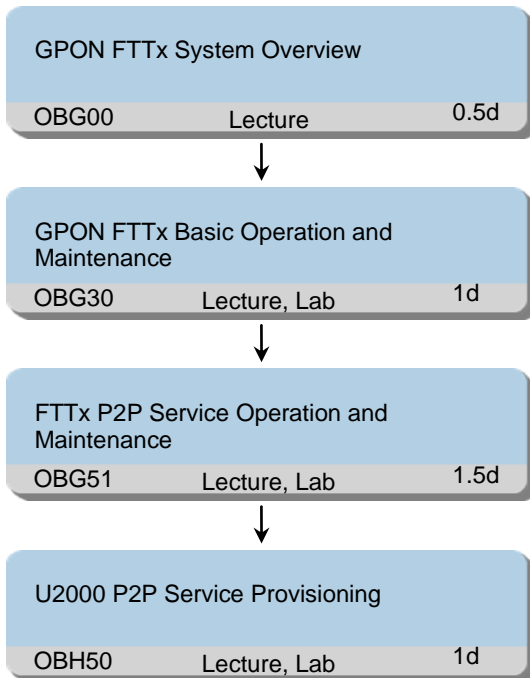
3 working days

Class Size

Min 6, Max 12

1.7.7 FTTx P2P 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

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

- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
- Describe FTTH/B/C/O/M solutions
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Describe FTTx P2P networking
- Perform FTTx P2P Triple-play service configuration, maintenance and verification
- Perform GPON service pre-deployment via U2000
- Perform GPON FTTB service configuration via U2000
- Perform GPON FTTH service configuration via U2000

Duration

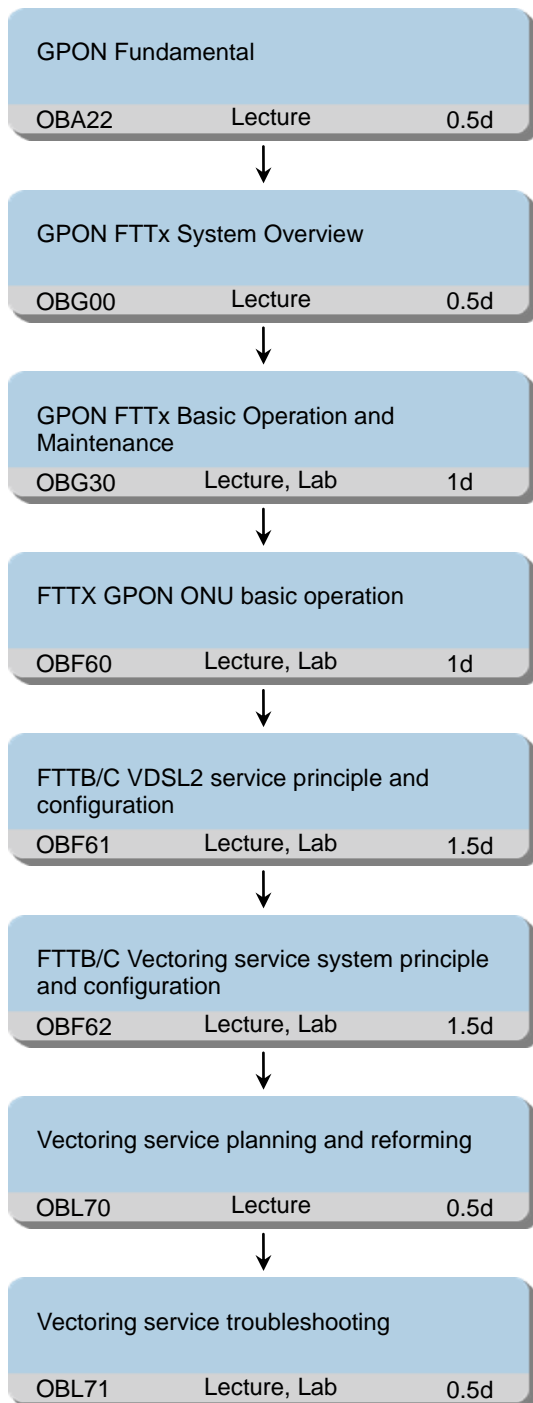
4 working days

Class Size

Min 6, Max 12

1.7.8 FTTx PON+Vectoring Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe GPON typical application scenarios
 - Describe the functions and specifications of GPON components
 - Describe the upstream and downstream technology
 - Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
 - Describe important concepts about GEM port and T-CONT
 - Describe service encapsulation and multiplexing measures
 - Describe the QoS and security solution in GPON
 - Describe ONT management measures
- Introduce FTTx network
- Describe the function and structure of cabinet, frames, boards and cables
 - Describe FTTH/B/C/O/M solutions
 - Establish the connection and login to the system
 - Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
 - Describe MXU features
 - Describe MXU basic configuration
 - Describe VDSL2 technology features
 - Describe VDSL2 key technology
 - Describe VDSL2 network solution
 - Describe VDSL2 configuration of FTTB/C

- Describe vectoring technology features
 - Describe vectoring key technology
 - Describe vectoring network solution
 - Describe vectoring configuration of FTTB/C
 - Describe vectoring planning method
 - Describe vectoring planning cases
- Describe vectoring troubleshooting method
- Duration
7 working day
- Class Size
Min 6, Max 12

1.7.9 GPON 3rd Line Maintenance (Feature Implementation) Training

Training Path

GPON Advanced Operation and Maintenance		
OBG70	Lecture, Lab	5d

Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Completion of GPON 2nd Line Maintenance Training or having equivalent knowledge

Objectives

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

- Describe Layer2 features
- Outline QoS features
- Explain multicast features
- Describe network protection features
- Describe security features

Duration

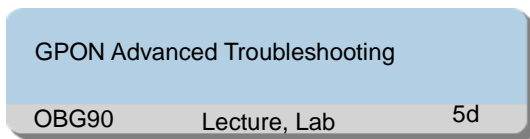
5 working days

Class Size

Min 6, Max 12

1.7.10 GPON 3rd Line Maintenance (Advanced Troubleshooting) Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Completion of GPON 3rd Line Maintenance Training or having equivalent knowledge

Objectives

On completion of this program, the participants will

be able to:

- Troubleshooting OLT hardware and software System
- Troubleshooting ONU
- Troubleshooting internet access service
- Troubleshooting multicast service
- Troubleshooting voice service

Duration

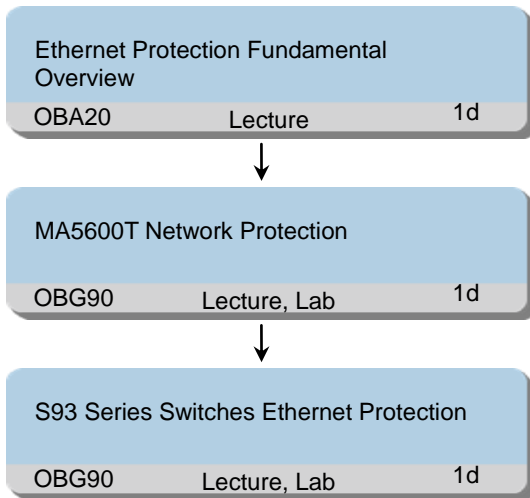
5 working days

Class Size

Min 6, Max 12

1.7.11 MA5600T Uplink Protection Solution and Configuration Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

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

- Describe MSTP feature

- Describe Smart Link and Monitor Link feature
- Describe Ethernet link aggregation feature
- Describe BFD feature
- Perform MSTP Configuration on MA5600T
- Perform Smart Link and Monitor Link Configuration on MA5600T
- Perform Ethernet link aggregation Configuration on MA5600T
- Perform BFD Configuration on MA5600T
- Perform MSTP Configuration on S93 to interconnect with MA5600T
- Perform Smart Link and Monitor Link Configuration on S93 to interconnect with MA5600T
- Perform Ethernet link aggregation Configuration on S93 to interconnect with MA5600T
- Perform BFD Configuration on S93 to interconnect with MA5600T

Duration

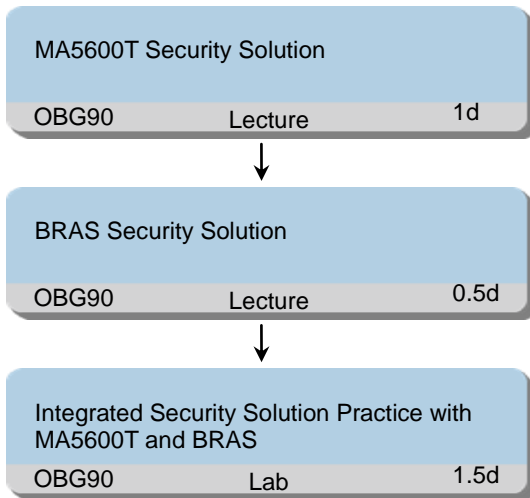
3 working days

Class Size

Min 6, Max 12

1.7.12 Broadband Access Network Security Solution and Configuration Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and IP Technology

Objectives

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

- Describe PITP Configuration on MA5600T
- Describe 802.1x Configuration on MA5600T

- Describe Anti-MAC Spoofing and anti-IP Spoofing Configuration on MA5600T
- Describe User isolation and line security Configuration on MA5600T
- Describe PITP Configuration on BRAS
- Describe 802.1x Configuration with BRAS
- Describe Anti-MAC Spoofing and anti-IP Spoofing Configuration on BRAS
- Describe User isolation and line security Configuration on BRAS
- Perform PITP Configuration with BRAS and MA5600T
- Perform 802.1x Configuration with BRAS and MA5600T
- Perform Anti-MAC Spoofing and anti-IP Spoofing Configuration with BRAS and MA5600T
- Perform User isolation and line security Configuration with BRAS and MA5600T

Duration

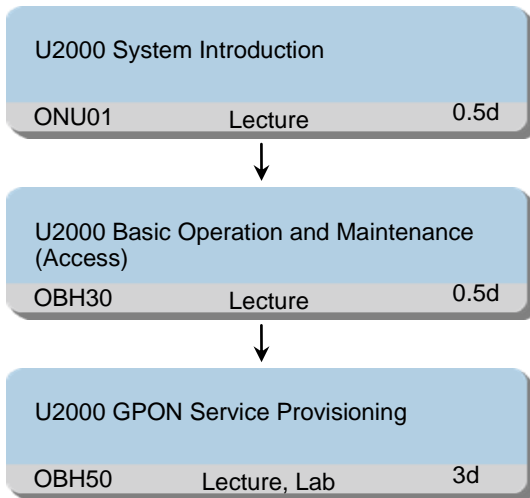
3 working days

Class Size

Min 6, Max 12

1.7.13 U2000 FTTx Service Provision Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- General understanding of telecommunication network and GPON

Objectives

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

- Describe the architecture and main features of U2000
- List the main functions of U2000
- Login to U2000 server via client
- Add a map and device
- Deal with the alarm
- Backup and auto save the configuration
- Add a management user
- Perform GPON service pre-deployment via U2000
- Perform GPON FTTB service configuration via U2000
- Perform GPON FTTH service configuration via U2000

Duration

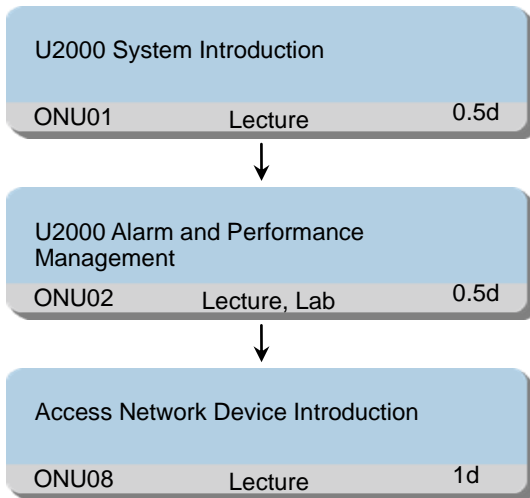
4 working days

Class Size

Min 6, Max 12

1.7.14 U2000 FTTx Monitoring Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

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

Objectives

On completion of this program, the participants will

be able to:

- Describe the architecture and main features of U2000
- List 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
- Locate the alarm in the network
- Explain the networking and application of Huawei Access network equipment
- Describe the functions of Huawei network products
- Describe the capacity and features of Huawei network products

Duration

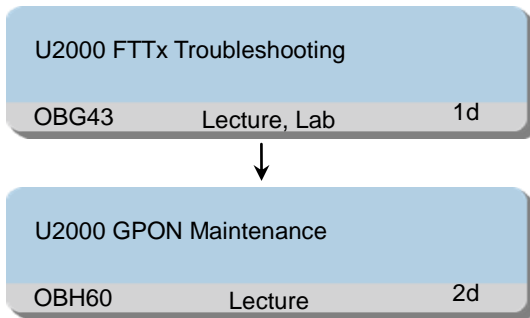
2 working days

Class Size

Min 6, Max 12

1.7.15 U2000 FTTx Maintenance and Troubleshooting Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

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

Objectives

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

- Describe FTTx fast operation and maintenance
- Describe upgrading ONTs Automatically
- Describe replacing ONTs

- Outline configuring a Service Level for an ONT
- Describe Remote MDU Acceptance
- Describe Replacing an Ethernet-Upstream Device Quickly
- Describe Replacing a PON MDU Quickly
- Describe FTTx Alarm types
- Perform U2000 FTTx Alarm Analysis
- Perform U2000 FTTx Alarm Management
- perform U2000 FTTx Network Performance Monitoring
- Perform U2000 FTTx Network Performance Management
- Analysis FTTx common faults troubleshooting on U2000
- Describe FTTx faults diagnose through U2000
- Describe FTTx faults information collection through U2000
- Describe FTTx case study on U2000

Duration

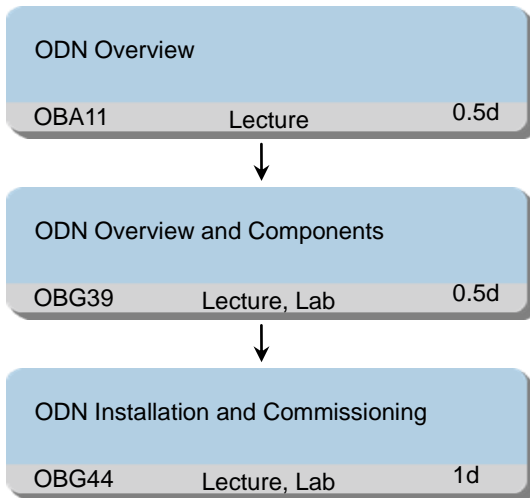
3 working days

Class Size

Min 6, Max 12

1.7.16 ODN Installation and Commissioning Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Having the basic knowledge of network management

- Having the basic knowledge of Access network

Objectives

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

- Describe ODN architecture
- Describe ODF function and application
- Describe FDT function and application
- Describe FAT function and application
- Describe Closure function and application
- Describe Splitter function and application
- Describe TB/ATB/CTB function and application
- Describe ODN deployment method
- Describe ODN test method

Duration

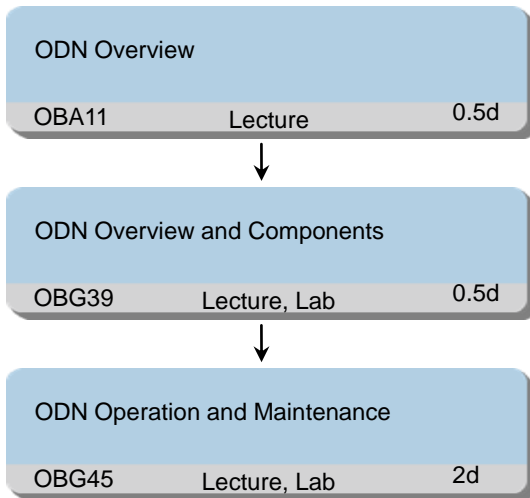
2 working days

Class Size

Min 6, Max 12

1.7.17 ODN Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Having the basic knowledge of network management
- Having the basic knowledge of Access network

Objectives

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

- Describe ODN architecture

- Describe ODF function and application
- Describe FDT function and application
- Describe FAT function and application
- Describe Closure function and application
- Describe Splitter function and application
- Describe TB/ATB/CTB function and application
- Describe ODN common operation
- Describe preventive maintenance purpose
- List the maintenance tools
- List of preventive Maintenance items
- List of planed maintenance items
- Complete maintenance tasks
- Outline troubleshooting flow
- Analysis the ODN common fault
- Locate the ODN common fault
- Complete corrective maintenance tasks
- Describe common fault category
- Outline typical fault troubleshooting method
- Complete fault troubleshooting

Duration

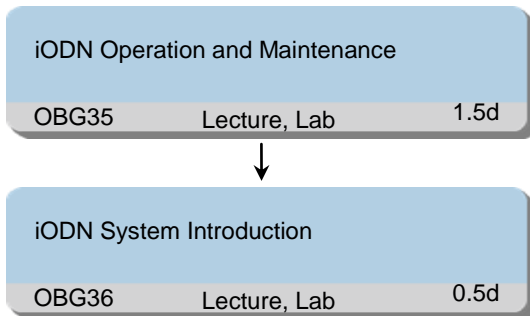
3 working days

Class Size

Min 6, Max 12

1.7.18 iODN Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Having the basic knowledge of ODN
- Having the basic principle and equipment knowledge of ODN

Objectives

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

- Describe iODN networking and hardware
- Describe iODN solution

- Outline the benefits of iODN solution
- Describe U2000 ODN NMS position and function
- Describe U2000 ODN NMS basic operation in web client
- Add resource through U2000 ODN NMS web client
- Configure iODN and services through U2000 ODN NMS web client
- Implement troubleshooting in U2000 ODN NMS web client
- Describe iFiled basic operation in onsite construction
- Describe the fiber jump process in and among the cabinet
- Outline remove fiber operation steps
- Outline cancel order operation steps

Duration

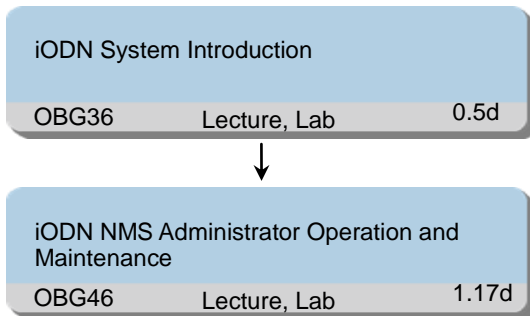
2 working days

Class Size

Min 6, Max 12

1.7.19 iODN NMS Administrator Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Having the basic knowledge of network management
- Having the basic knowledge of Access network

Objectives

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

- Describe ODN Network Composing
- Describe ODN Network Maintenance Challenge
- Describe iODN Network Structure
- Describe iODN Solution Module
- Outline iODN advantage
- Describe iODF function and application
- Describe iFDT function and application
- Describe iField component
- Describe U2000 ODN NMS characteristics and software structure

- Describe U2000 ODN NMS ex-interface
- Perform U2000 ODN NMS server and client configuration
- Describe iField function and applications
- Describe alarms and events in U2000 ODN NMS
- Describe monitoring network alarms
- Describe setting and handling alarms
- Outline analyzing alarm correlation
- Describe U2000 ODN NMS security management
- Describe U2000 ODN NMS log management operation
- Outline U2000 ODN NMS time localization management operation
- Adjusting the U2000 ODN NMS
- Managing License
- Managing U2000 ODN NMS database, files and disks
- Describe method of checking resource usage of the server
- Describe how to check running status of processes and services
- Describe method of backing up U2000 ODN NMS data
- Outline normal troubleshooting process and typical cases

Duration

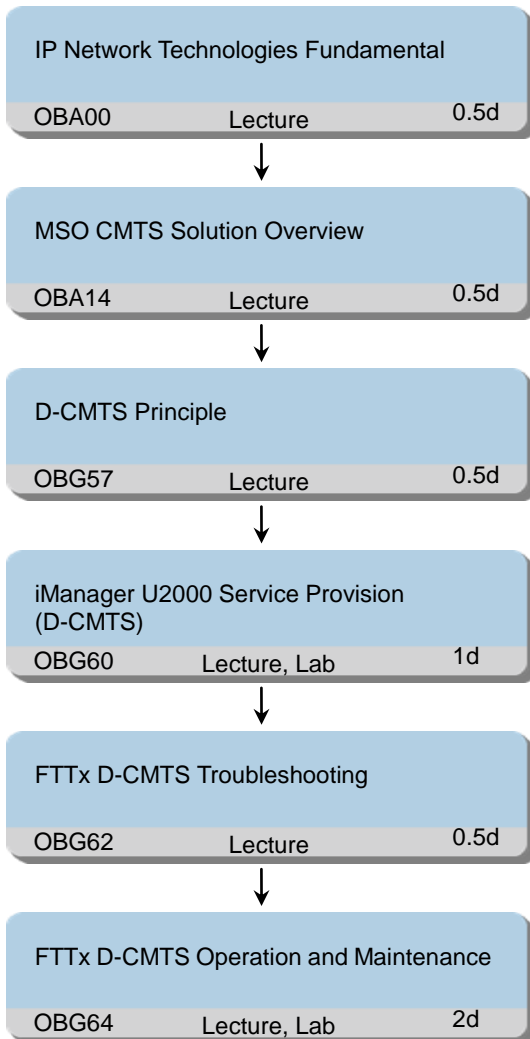
2 working days

Class Size

Min 6, Max 12

1.7.20 MSO CMTS Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe EOC concepts
- Describe EOC technologies
- Describe traditional cable network Introduction
- Describe CMTS introduction
- Describe MSO CMTS solution
- Describe FTTx D-CMTS Triple-play service configuration procedure
- Perform FTTx D-CMTS Triple-play service configuration correctly based on data planning
- Perform the FTTx D-CMTS service provisioning on U2000
- Describes how to troubleshoot FTTx D-CMTS common faults and deal with emergencies in services and functions

Duration

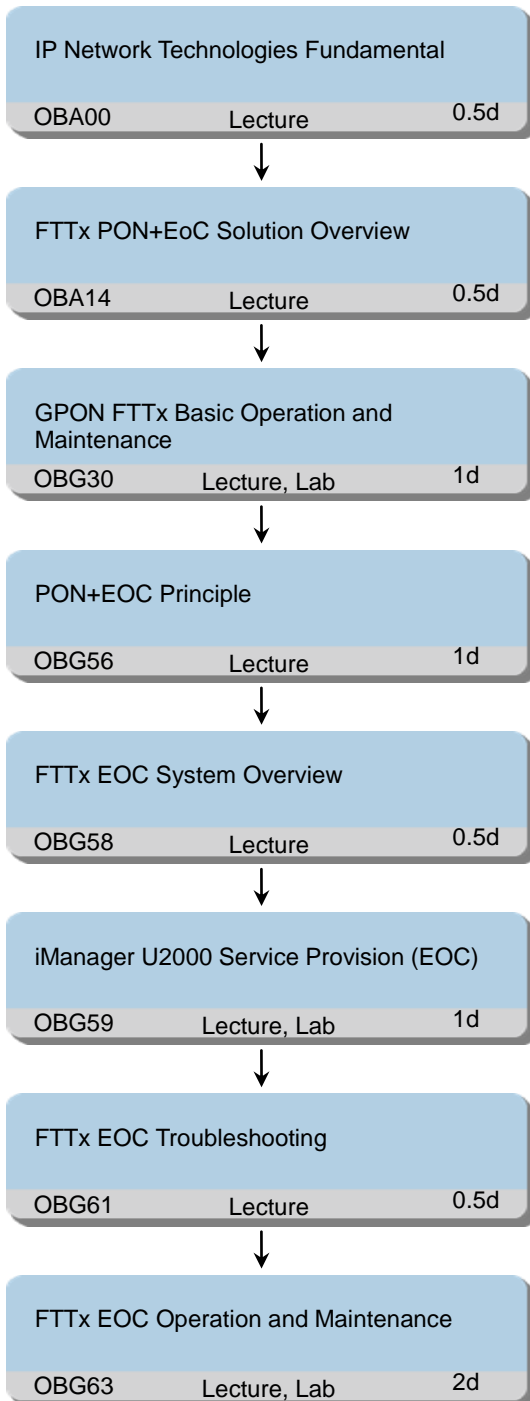
5 working days

Class Size

Min 6, Max 12

1.7.21 FTTx PON+EoC Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe EOC concepts
- Describe EOC technologies
- Describe FTTx basic concepts and applications
- Describe FTTx EOC product architecture
- Describe FTTx EOC MA563x features
- Describe how to integrate EOC product in CATV network
- Describe traditional cable network Introduction
- Describe CMTS introduction and CMTS network
- Describe PON+EoC solution overview
- Outline the difference between CMTS and xPON
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change and alarm query etc.
- Perform the ONU adding and check the ONU status
- Describe FTTx EOC HSI service configuration procedure
- Perform FTTx EOC HSI service configuration correctly based on data planning
- Perform the FTTx EOC service provisioning on U2000
- Describes how to troubleshoot FTTx EOC

common faults and deal with emergencies in
services and functions

Class Size

Min 6, Max 12

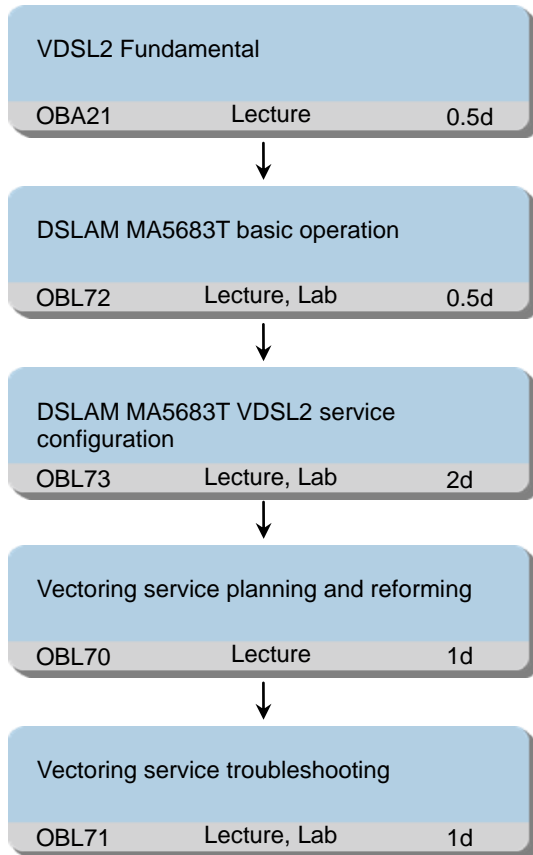
Duration

7 working day

1.8 DSLAM Products Training Programs

1.8.1 DSLAM SmartAX MA5603T Vectoring Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication

and data communication

Objectives

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

- Describe VDSL2 orientation and networking
- Describe VDSL2 modulation mode
- Describe VDSL2 band plans and profiles
- Describe VDSL2 noise dealing principle
- Describe VDSL2 packet transfer mode
- Describe DSLAM MA5603T features
- Describe DSLAM MA5603T basic configuration
- Describe VDSL2 technology features
- Describe VDSL2 key technology
- Describe VDSL2 network solution
- Describe VDSL2 configuration on MA5603T
- Describe vectoring planning method
- Describe vectoring planning cases
- Describe vectoring troubleshooting method

Duration

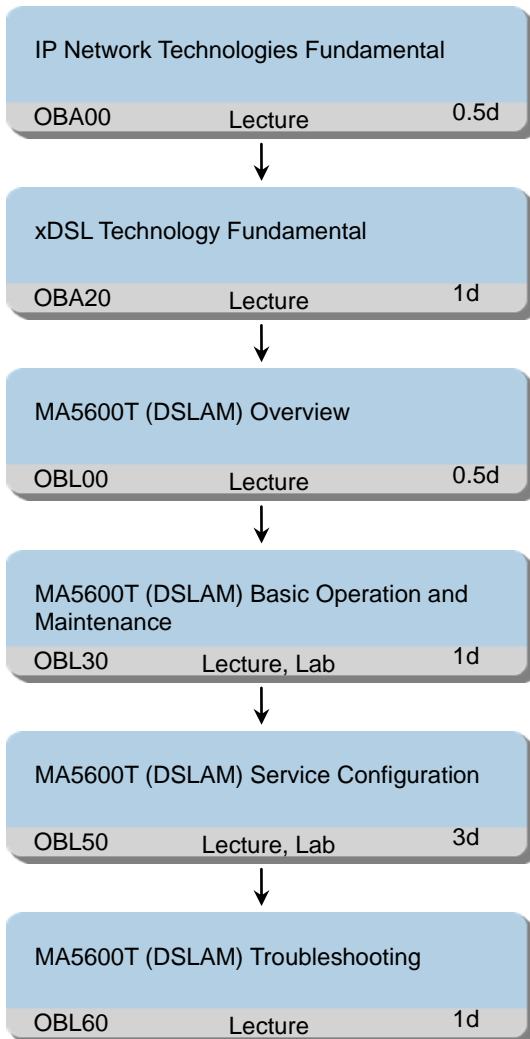
5 working day

Class Size

Min 6, Max 12

1.8.2 DSLAM SmartAX MA5600T Series 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP

- Describe VLAN forwarding process
- Describe xDSL network solution
- Describe xDSL service solution
- Describe xDSL service process
- Describe MA5600T product positioning and networking
- Outline MA5600T product functions
- Describe MA5600T system features
- List device management method
- Describe MA5600T cabinet
- Outline MA5600T shelf
- Describe MA5600T functions of boards
- Outline MA5600T cables and interconnection
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change, alarm query, etc.
- Describe ADSL2+/VDSL2 service implementation in MA5600T
- Describe multicast service implementation MA5600T
- Manage ADSL2+/VDSL2 line profile
- Complete ADSL2+/VDSL2 service configuration
- Perform ADSL2+/VDSL2 service operation and maintenance
- Complete multicast service configuration
- Perform multicast service operation and maintenance
- Troubleshooting hardware and software system
- Troubleshooting internet access service
- Troubleshooting multicast service

Duration

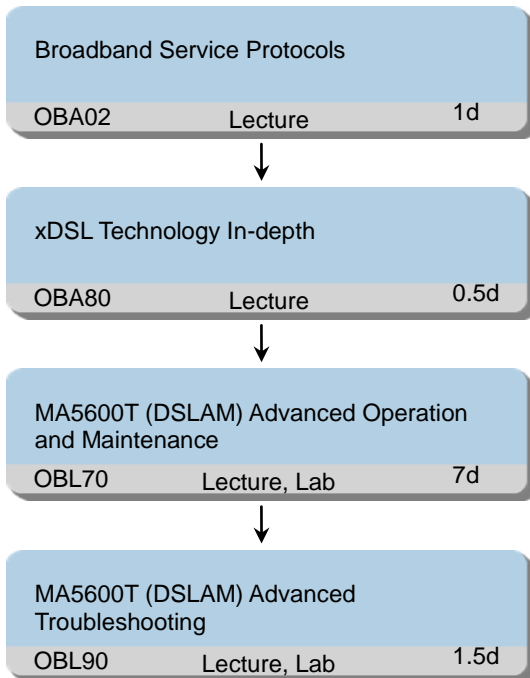
7 working days

Class Size

Min 6, Max 12

1.8.3 DSLAM SmartAX MA5600T Series 3rd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Completion of DSLAM SmartAX MA5600T Series 2nd Line Maintenance Training or having equivalent knowledge

Objectives

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

- Describe function and message of PPP and

PPPoE protocol

- Describe function and message of RADIUS protocol
- Describe function and message of DHCP protocol
- Describe xDSL modulation mode
- Describe xDSL band plans and profiles
- Deal with noise of xDSL line
- Describe xDSL packet transfer mode
- Describe triple-play solution introduction
- Complete triple-play service configuration
- Describe and provision xDSL features
- Describe and provision layer2 features
- Describe and provision QoS features
- Describe and provision network protection features
- Describe and provision user security features
- Describe and provision multicast features
- Troubleshoot complex faults in hardware and software system
- Troubleshoot complex faults in the Internet access service
- Troubleshoot complex faults in the multicast service

Duration

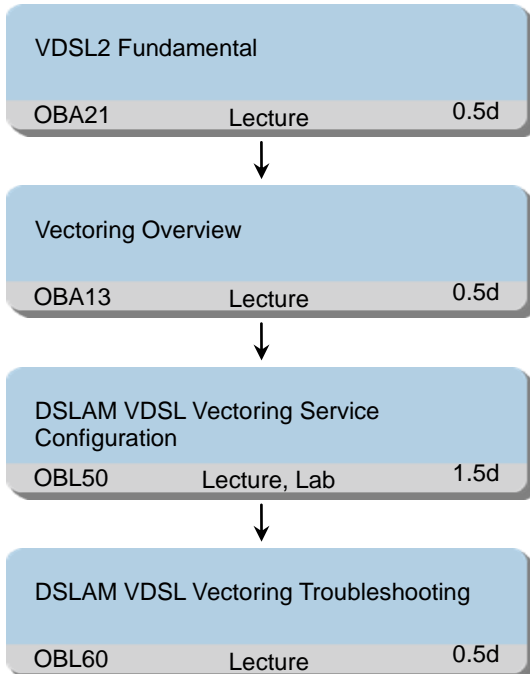
10 working days

Class Size

Min 6, Max 12

1.8.4 DSLAM MA5603T/MA5616/MxU VDSL Vectoring Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe VDSL2 orientation and networking
- Describe VDSL2 modulation mode
- Describe VDSL2 band plans and profiles
- Describe VDSL2 noise dealing principle
- Describe VDSL2 packet transfer mode
- Describe vectoring technology features
- Describe vectoring key technology
- Describe vectoring network solution
- Describe VDSL2 service implementation
- Describe multicast service implementation
- Complete VDSL2 service configuration
- Perform VDSL2 service operation and maintenance
- Complete multicast service configuration
- Perform multicast service operation and maintenance
- Troubleshooting vectoring hardware and software system
- Troubleshooting internet/multicast service based on vectoring technology

Duration

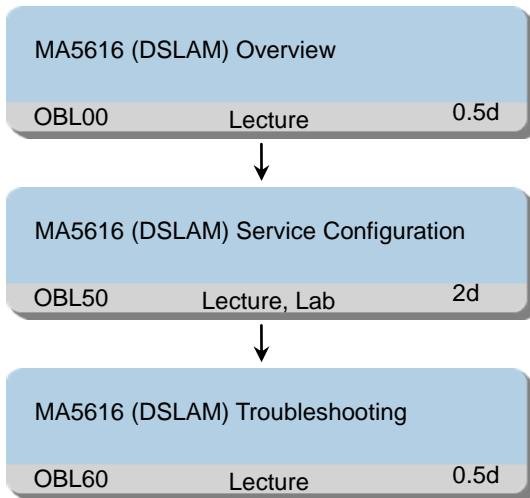
3 working days

Class Size

Min 6, Max 12

1.8.5 DSLAM MA5616 Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe MA5616 product positioning and networking

- Outline MA5616 product functions
- Describe MA5616 system features
- Describe MA5616 functions of boards
- Outline MA5616 cables and interconnection
- Describe ADSL2+/VDSL2 service implementation in MA5616
- Describe multicast service implementation in MA5616
- Manage ADSL2+/VDSL2 line profile
- Complete ADSL2+/VDSL2 service configuration
- Perform ADSL2+/VDSL2 service operation and maintenance
- Complete multicast service configuration
- Perform multicast service operation and maintenance
- Troubleshooting hardware and software system
- Troubleshooting internet access service
- Troubleshooting multicast service

Duration

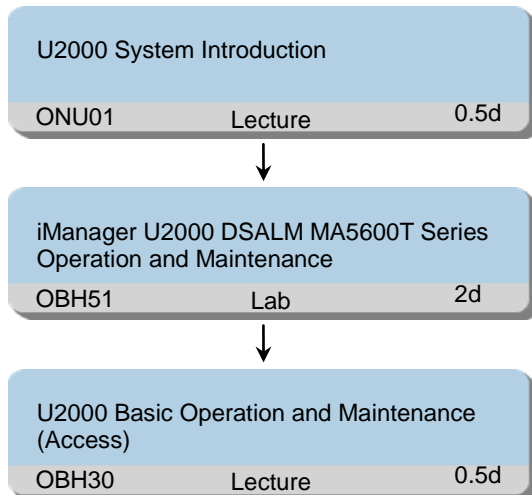
3 working days

Class Size

Min 6, Max 12

1.8.6 iManager U2000 DSALM MA5600T Series Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and DSLAM

Objectives

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

- Describe the architecture and main features of U2000
- List the main functions of U2000
- Login to U2000 server via client
- Add a map and device
- Deal with the alarm
- Backup and auto save the configuration
- Add a management user
- Perform ADSL2+ service configuration via U2000
- Perform VDSL2 service configuration via U2000

Duration

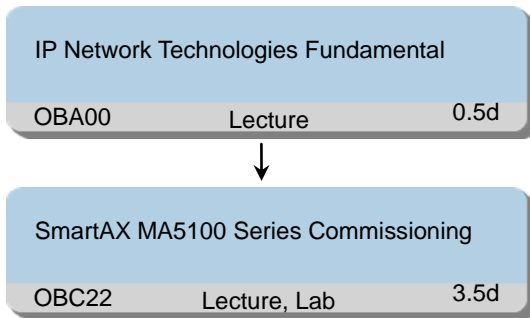
3 working days

Class Size

Min 6, Max 12

1.8.7 DSLAM SmartAX MA5100 Series Commissioning Training

Training Path



Target Audience

System Commissioning Technicians
Service Commissioning Technicians

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Perform the hardware commissioning, stand-alone commissioning, network commissioning, service commissioning and the commissioning verification

Duration

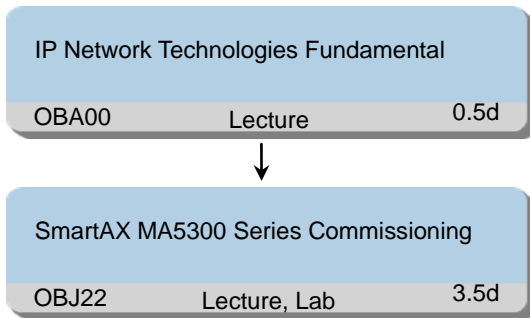
4 working days

Class Size

Min 6, Max 12

1.8.8 DSLAM SmartAX MA5300 Series Commissioning Training

Training Path



Target Audience

System Commissioning Technicians
Service Commissioning Technicians

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Perform the hardware commissioning, stand-alone commissioning, network commissioning, service commissioning and the commissioning verification

Duration

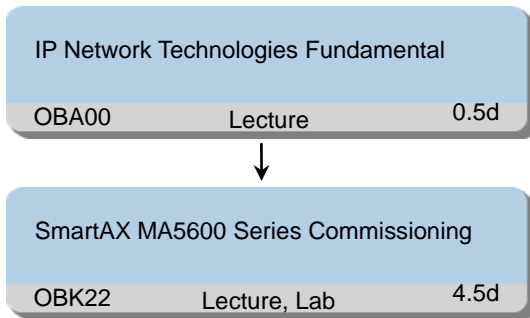
4 working days

Class Size

Min 6, Max 12

1.8.9 DSLAM SmartAX MA5600 Series Commissioning Training

Training Path



Target Audience

System Commissioning Technicians
Service Commissioning Technicians

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Perform the hardware commissioning, stand-alone commissioning, network commissioning, service commissioning and the commissioning verification

Duration

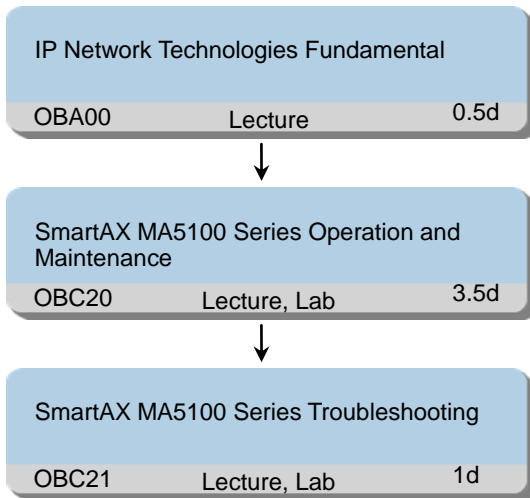
5 working days

Class Size

Min 6, Max 12

1.8.10 DSLAM SmartAX MA5100 Series 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe System Overview
- Describe Hardware Architecture
- Describe Functional Features
- Describe Networking Applications
- Introduce CLI
- Perform System Maintenance
- Perform ATM-DSLAM Service Configuration
- Perform IP-DSLAM Service Configuration
- Troubleshooting ADSL service
- Troubleshooting LAN service

Duration

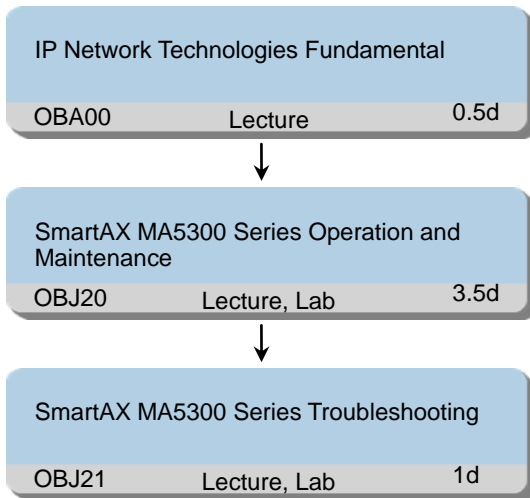
5 working days

Class Size

Min 6, Max 12

1.8.11 DSLAM SmartAX MA5300 Series 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe product positioning and networking
- Describe hardware architecture
- Describe functional features
- Describe networking applications
- Perform service configuration and maintenance
- Perform system maintenance
- Troubleshooting hardware and software system
- Troubleshooting ADSL service
- Troubleshooting LAN service

Duration

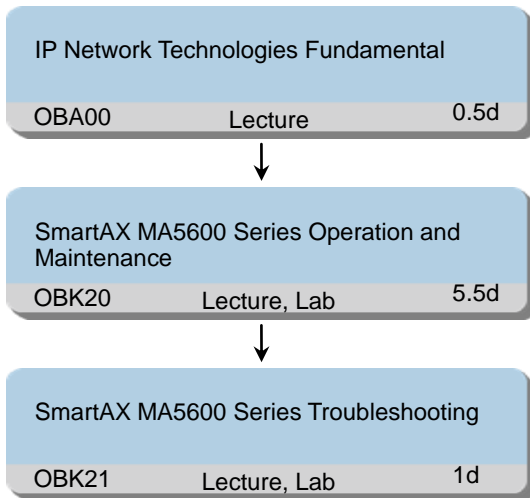
5 working days

Class Size

Min 6, Max 12

1.8.12 DSLAM SmartAX MA5600 Series 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe the functions of TCP/IP
- Describe routing process
- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe system networking and positioning
- Describe hardware architecture
- Describe functional features
- Describe networking applications
- Perform system daily maintenance
- Perform service configuration and maintenance
- Troubleshooting hardware and software
- Troubleshooting ADSL service
- Troubleshooting LAN service
- Troubleshooting Multicast service

Duration

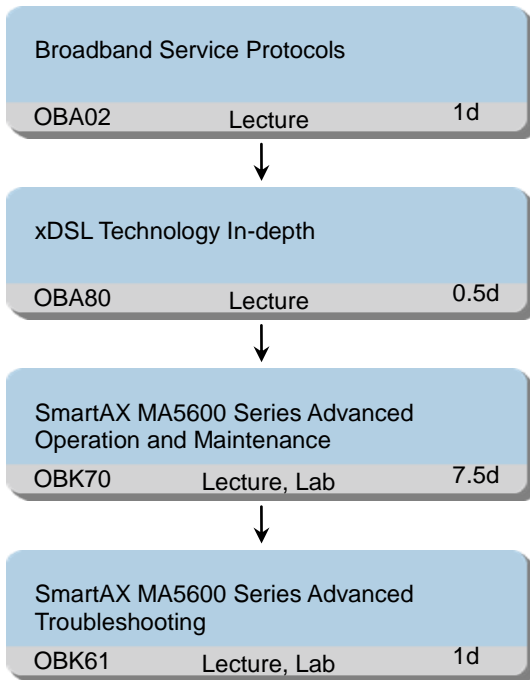
7 working days

Class Size

Min 6, Max 12

1.8.13 DSLAM SmartAX MA5600 Series 3rd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Completion of DSLAM SmartAX MA5600 Series 2nd Line Maintenance Training or having equivalent knowledge

Objectives

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

- Describe function and message of PPP and PPPoE protocol

- Describe function and message of RADIUS protocol
- Describe function and message of DHCP protocol
- Describe xDSL modulation mode
- Describe xDSL band plans and profiles
- Deal with noise of xDSL line
- Describe xDSL packet transfer mode
- Describe and provision QinQ VLAN features
- Describe and provision VLAN Stacking features
- Describe and provision PITP features
- Describe and provision DHCP Relay features
- Describe and provision IPoA to IPoE features
- Describe and provision PPPoA to PPPoE features
- Describe and provision Triple-play service
- Troubleshooting complex faults in MA5600 system
- Troubleshooting complex faults in ADSL service
- Troubleshooting complex faults in internet access service
- Troubleshooting complex faults in multicast service

Duration

10 working days

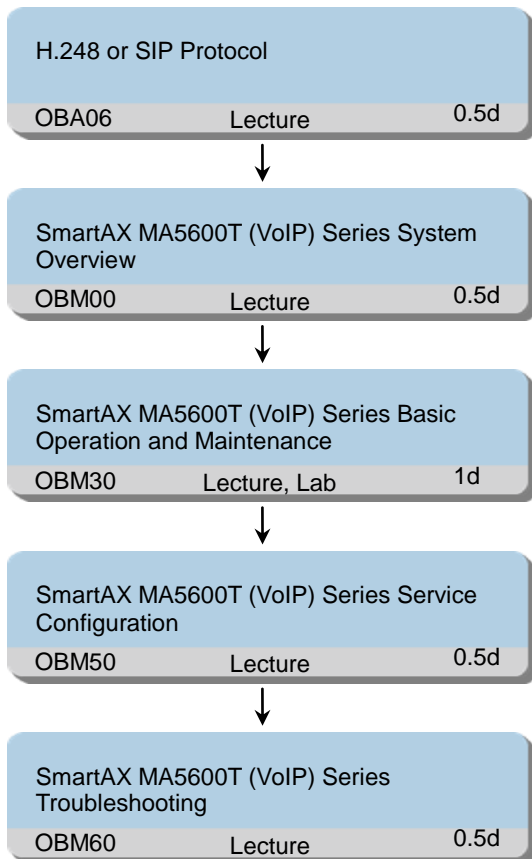
Class Size

Min 6, Max 12

1.9 MSAN Products Training Programs

1.9.1 MSAN SmartAX MA5600T(VoIP) Series 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe SIP function and position in network
- Describe SIP message and message flow
- Describe H.248 function and position in network
- Describe H.248 message structure and call flow
- Describe MA5600T(VoIP) Product orientation, function and networking application
- Describe MA5600T(VoIP) features
- Describe MA5600T(VoIP) hardware, including cabinet, shelves, boards and cables
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change, alarm query, etc.
- Describe VoIP service implementation process
- Complete VoIP service configuration
- Perform VoIP service operation and maintenance
- Troubleshooting hardware
- Troubleshooting software
- Troubleshooting VoIP service

Duration

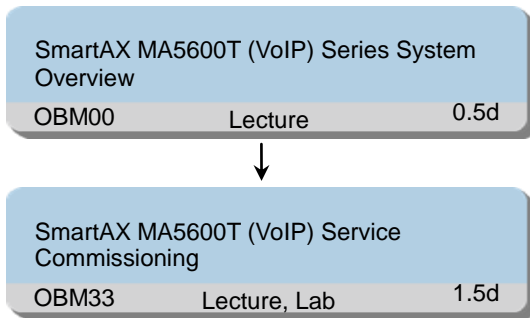
3 working days

Class Size

Min 6, Max 12

1.9.2 MSAN SmartAX MA5600T(VoIP) Series Commissioning Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe MA5600T(VoIP) Product orientation, function and networking application
- Describe MA5600T(VoIP) features
- Describe MA5600T(VoIP) hardware, including cabinet, shelves, boards and cables
- Perform the hardware commissioning, stand-alone commissioning, network commissioning, service commissioning and the commissioning verification

Duration

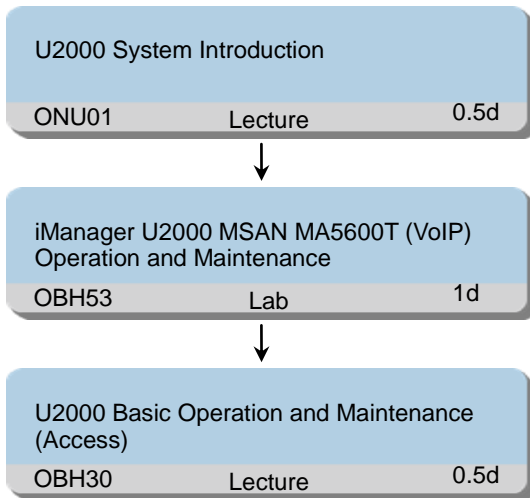
2 working days

Class Size

Min 6, Max 12

1.9.3 iManager U2000 MSAN MA5600T(VoIP) Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of U2000 and MSAN

Objectives

On completion of this program, the participants will

be able to:

- Describe the architecture and main features of U2000
- List the main functions of U2000
- Login to U2000 server via client
- Add a map and device
- Deal with the alarm
- Backup and auto save the configuration
- Add a management user
- Perform MSAN ADSL2+ service configuration via U2000
- Perform MSAN VoIP service configuration via U2000
- Perform MSAN multicast service configuration via U2000

Duration

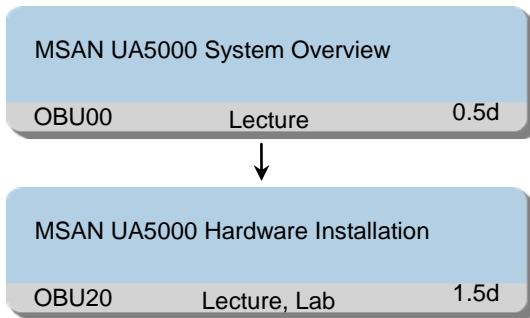
2 working days

Class Size

Min 6, Max 12

1.9.4 MSAN UA5000 Hardware Installation Training

Training Path



Target Audience

Installation technician

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe MSAN UA5000 product positioning

- Outline MSAN UA5000 product functions
- Describe MSAN UA5000 system features
- Describe MSAN UA5000 product networking
- Describe MSAN UA5000 frame, boards and ports
- Install UA5000 cabinet, frame and board properly
- Perform UA5000 cable routing and termination properly
- Identify the cautions and facts which may affect UA5000 system running due to improperly installation

Duration

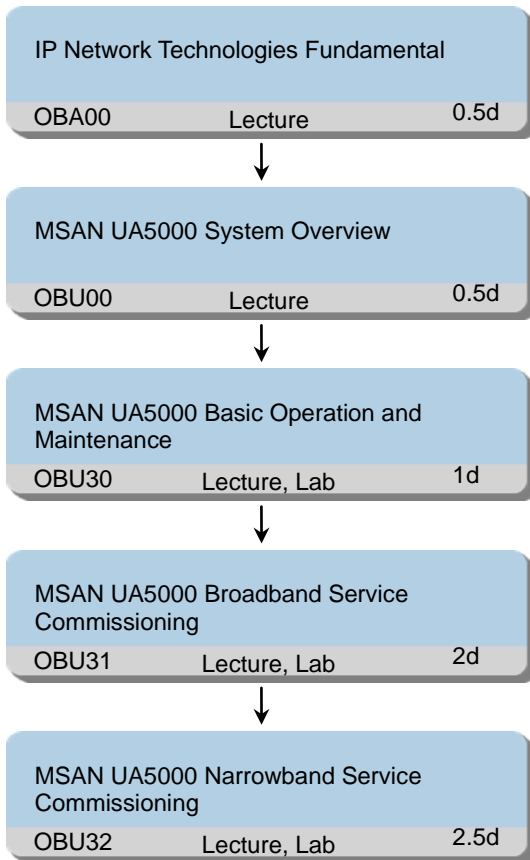
2 working days

Class Size

Min 6, Max 12

1.9.5 MSAN UA5000 Commissioning Training

Training Path



Target Audience

System Commissioning Technicians
Service Commissioning Technicians

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe MSAN UA5000 product positioning
- Outline MSAN UA5000 product functions
- Describe MSAN UA5000 system features
- Describe MSAN UA5000 product networking
- Describe MSAN UA5000 frame, boards and ports
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change, alarm query, etc.
- Check the equipment running conditions, such as power connections, fiber connections, mounted boards, etc.
- Perform the broadband system commissioning, network commissioning, xDSL service commissioning
- Eliminate the fault during the commissioning process
- Perform the narrowband system commissioning, stand-alone commissioning, network commissioning, voice service commissioning
- Eliminate the fault during the commissioning process

Duration

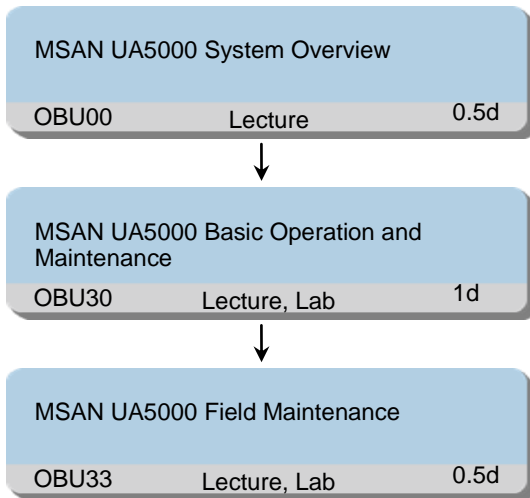
6 working days

Class Size

Min 6, Max 12

1.9.6 MSAN UA5000 1st Line Maintenance Training

Training Path



Target Audience

Field Technicians

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe MSAN UA5000 product positioning

- Outline MSAN UA5000 product functions
- Describe MSAN UA5000 system features
- Describe MSAN UA5000 product networking
- Describe MSAN UA5000 frame, boards and ports
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change, alarm query, etc.
- Describe the general methods of field maintenance
- Perform the alarm query and running status query by indications of the LED
- Perform simple diagnose according to field situation and daily maintenance
- Perform component replacement

Duration

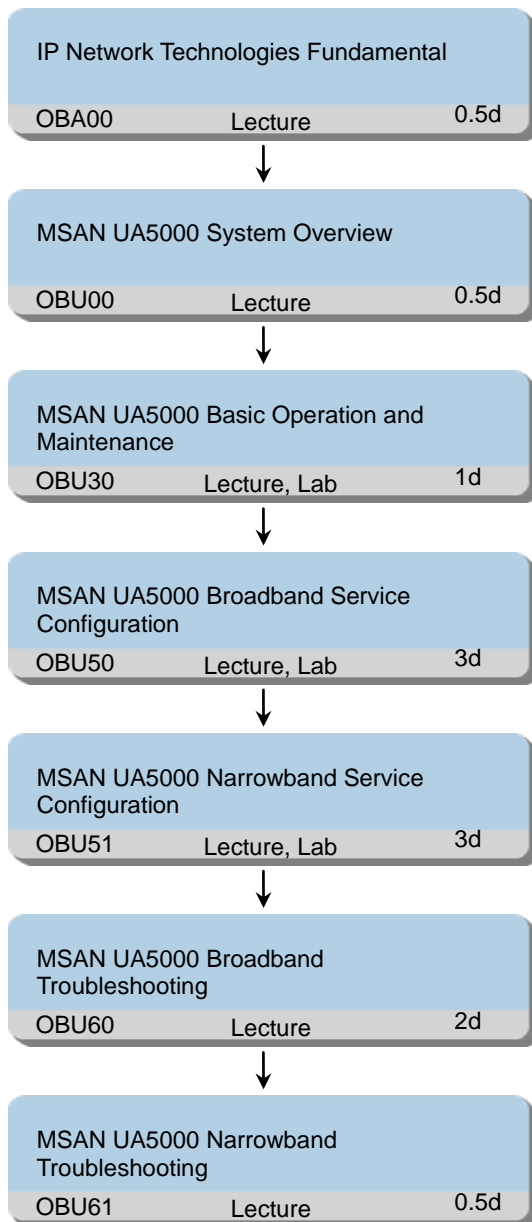
2 working days

Class Size

Min 6, Max 12

1.9.7 MSAN UA5000 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe MSAN UA5000 product positioning
- Outline MSAN UA5000 product functions
- Describe MSAN UA5000 system features
- Describe MSAN UA5000 product networking
- Describe MSAN UA5000 frame, boards and ports
- Establish the connection and login to the system
- Perform the common basic operation, such as query status of hardware and software, backup and restore data, system name change, alarm query, etc.
- Describe ADSL2+/VDSL2 service implementation process
- Describe multicast service implementation process
- Manage ADSL2+/VDSL2 line profile
- Complete ADSL2+/VDSL2 service configuration
- Perform ADSL2+/VDSL2 service operation and maintenance
- Complete multicast service configuration
- Perform multicast service operation and maintenance
- Describe Voice service implementation process
- Complete Voice service configuration
- Perform Voice service operation and maintenance
- Troubleshooting IPM System
- Troubleshooting internet access service
- Troubleshooting multicast service
- Troubleshooting Ethernet port
- Troubleshooting PVM System
- Troubleshooting Voice service
- Troubleshooting E1 port

Duration

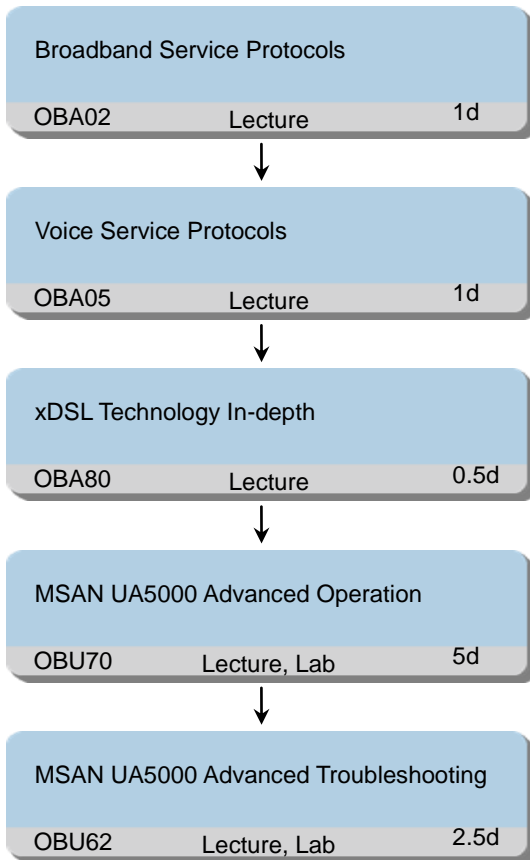
10 working days

Class Size

Min 6, Max 12

1.9.8 MSAN UA5000 3rd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Completion of MSAN UA5000 2nd Line Maintenance Training or having equivalent knowledge

Objectives

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

- Describe function and message of PPP and PPPoE protocol
- Describe function and message of RADIUS

protocol

- Describe function and message of DHCP protocol
- Describe xDSL modulation mode
- Describe xDSL band plans and profiles
- Deal with noise of xDSL line
- Describe xDSL packet transfer mode
- Describe SIP function and position in network
- Describe SIP typical call flow
- Describe H.248 function and position in network
- Describe H.248 message structure and typical call flow
- Describe and provision IPoA to IPoE features
- Describe and provision PPPoA to PPPoE features
- Describe and provision VLAN features
- Describe and provision DHCP Relay features
- Describe and provision DHCP multicast features
- Describe triple play service solution
- Complete Triple-play service configuration
- Describe and provision hairpin connection and self-switching
- Describe line test networking and device requirement
- Troubleshooting system
- Troubleshooting Internet Access Service
- Troubleshooting Multicast Service
- Troubleshooting VoIP service

Duration

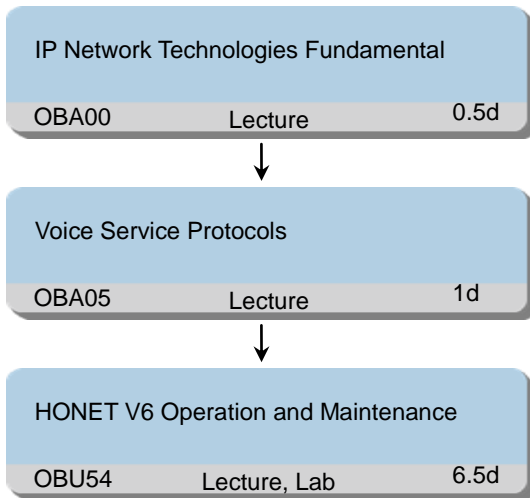
10 working days

Class Size

Min 6, Max 12

1.9.9 HONET V6 MD5500 and UA5000 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe the functions of TCP/IP
- Describe routing process

- Describe the function and process of ARP
- Describe VLAN forwarding process
- Describe SIP function and position in network
- Describe SIP typical call flow
- Describe H.248 function and position in network
- Describe H.248 message structure and typical call flow
- Describe provision xDSL service
- Describe provision IMA service
- Describe provision Ethernet service
- Describe provision CES service
- Perform V5 interface configuration
- Perform PV8/RSP frame configuration
- Perform user configuration
- Perform POTS service configuration
- Perform ISDN service configuration
- Perform daily operation and maintenance

Duration

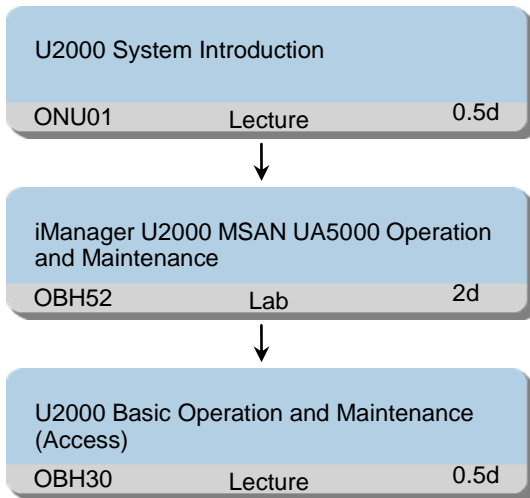
8 working days

Class Size

Min 6, Max 12

1.9.10 iManager U2000 MSAN UA5000 Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of U2000 and MSAN

Objectives

On completion of this program, the participants will

be able to:

- Describe the architecture and main features of U2000
- List the main functions of U2000
- Login to U2000 server via client
- Add a map and device
- Deal with the alarm
- Backup and auto save the configuration
- Add a management user
- Perform MSAN ADSL2+ service configuration via U2000
- Perform MSAN VoIP service configuration via U2000
- Perform MSAN multicast service configuration via U2000

Duration

3 working days

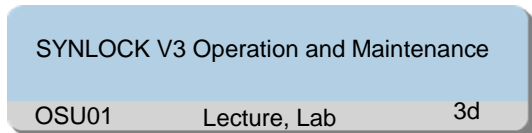
Class Size

Min 6, Max 12

1.10 BITS Training Programs

1.10.1 SYNLOCK V3 2nd Line Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Understand basic concepts of synchronization network
- Describe the composition of synchronization network
- Describe the applications of synchronization network
- Describe the applications of synchronization

network

- Describe system structure and features of SYNLOCK V3
- Outline main functions of boards
- Configure different levels of clock source
- Configure SYNLOCK V3 hardware
- Hand on practice via SYNLOCK V3 network management system
- Perform SYNLOCK V3 network management system maintenance
- Perform the basic maintenance operations of SYNLOCK V3
- Complete the maintenance records of SYNLOCK V3
- Describe the common analysis methods of fault locating
- Analyze the typical faults

Duration

3 working days

Class Size

Min 6, Max 12

1.10.2 SYNLOCK V5 2nd Line Maintenance Training

Training Path

SYNLOCK V5 Operation and Maintenance		
OSU02	Lecture, Lab	2d

Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Understand basic concepts of synchronization network
- Describe the composition of synchronization network
- Describe the applications of synchronization network
- Describe the applications of synchronization network

- Describe system structure and features of SYNLOCK V5
- Outline main functions of boards
- Configure different levels of clock source
- Configure SYNLOCK V5 hardware
- Hand on practice via SYNLOCK V5 network management system
- Perform SYNLOCK V5 network management system maintenance
- Perform the basic maintenance operations of SYNLOCK V5
- Complete the maintenance records of SYNLOCK V5
- Describe the common analysis methods of fault locating
- Analyze the typical faults

Duration

2 working days

Class Size

Min 6, Max 12

1.10.3 SYNLOCK T6020 2nd Line Maintenance Training

Training Path

SYNLOCK T6020 Operation and Maintenance		
OSU03	Lecture, Lab	3d

Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Outline product positioning of SYNLOCK T6020
- Describe hardware structure of SYNLOCK T6020
- State the functions of boards and interfaces
- List the typical system configuration of SYNLOCK T6020
- Describe the network structure and function of SYNLOCK V3
- Complete SYNLOCK T6020 system configuration data via SYNLOCK V3

- Query the device status and alarm via SYNLOCK V3
- Describe the network structure and function of SYNLOCK V3
- Complete SYNLOCK T6020 system configuration data via SYNLOCK V3
- Query the device status and alarm via SYNLOCK V3
- Explain the meaning of network synchronization
- Differentiate between clock synchronization and time synchronization
- List common technologies for network synchronization
- Describe common synchronization modes for SDH networks
- Describe clock levels and quality requirements of clock at different levels
- Explain the functions of IEEE 1588v2 clock and its advantages/disadvantages

Duration

3 working days

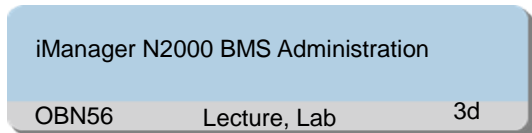
Class Size

Min 6, Max 12

1.11 OSS Training Programs

1.11.1 iManager N2000 BMS Administration Training

Training Path



iManager N2000 BMS

- Perform server configuration, server startup and shutdown
- Perform system user management, N2000 user management, NE user Management and so on
- Perform service and process management, Database management and NTP configuration
- Perform database backup and restoration, routine management, emergency management, as well as know how to use management tool

Target Audience

- Technical Support Engineers
- Operation and Maintenance Engineers

Prerequisites

- Having the basic knowledge of NMS

Objectives

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

- Describe system structure, orientation features, network application and functions of the

Duration

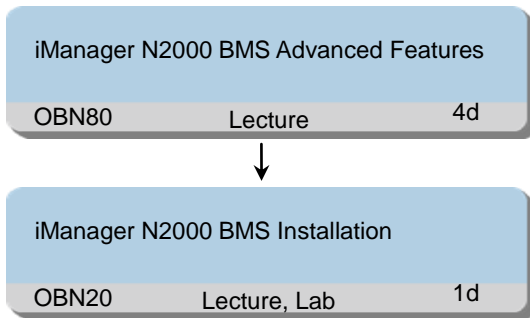
3 working days

Class Size

Min 6, Max 12

1.11.2 iManager N2000 BMS Advanced Operation and Maintenance Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- Having the basic knowledge of NMS

Objectives

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

- Describe HA solution
- Describe Watchman principles
- Perform Watchman maintenance
- Describe NMS northbound interface
- Northbound SNMP/CORBA interface

- Northbound TL1 interface
- Background of TL1 interface
- Describe hardware and software architecture of iManager N2000 BMS
- Describe the functions of each application components
- Describe typical management solution which may cooperate with OSS and third-party application and cases
- Describe fault, provisioning, performance, management and security solution
- Describe the solution and implementation of NBI (North Bound Interface)
- Perform NBI operation and maintenance
- Describe the solution and implementation of dual system
- Describe the installation procedure
- Install iManager N2000 system properly

Duration

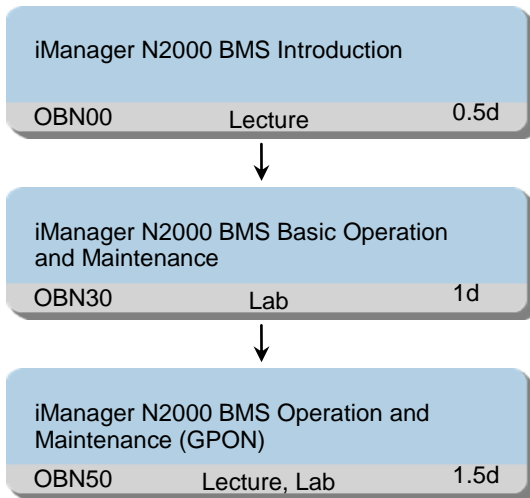
5 working days

Class Size

Min 6, Max 12

1.11.3 iManager N2000 BMS Operation Training (GPON)

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- General understanding of telecommunication network and GPON

Objectives

On completion of this program, the participants will

be able to:

- Describe network management architecture
- Describe the hardware and software architecture of iManager N2000 BMS
- Describe the features of iManager N2000 BMS
- Describe the interfaces Provided by N2000
- Login to N2000 Server via Client
- Add a map and device
- Deal with the alarm
- Backup and auto save the configuration
- Add a management user
- Perform GPON FTTH service configuration via iManager N2000 BMS
- Perform GPON FTTB/FTTC service configuration via iManager N2000 BMS

Duration

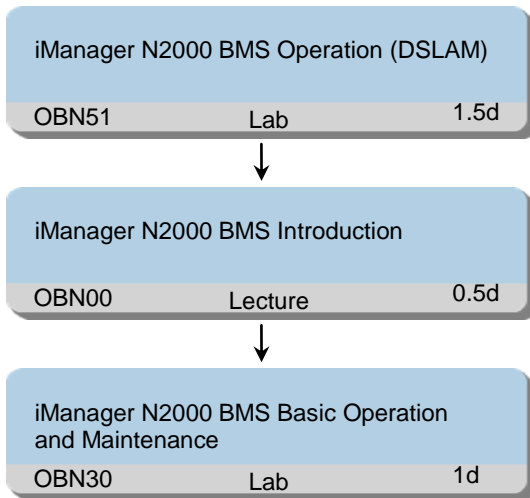
3 working days

Class Size

Min 6, Max 12

1.11.4 iManager N2000 BMS Operation Training (DSLAM)

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- General understanding of telecommunication network and DSLAM

Objectives

On completion of this program, the participants will

be able to:

- Describe network management architecture
- Describe the hardware and software architecture of iManager N2000 BMS
- Describe the features of iManager N2000 BMS
- Describe the interfaces Provided by N2000
- Login to N2000 Server via Client
- Add a map and device
- Deal with the alarm
- Backup and auto save the configuration
- Add a management user
- Perform ADSL2+ service configuration via iManager N2000 BMS
- Perform VDSL2 service configuration via iManager N2000 BMS

Duration

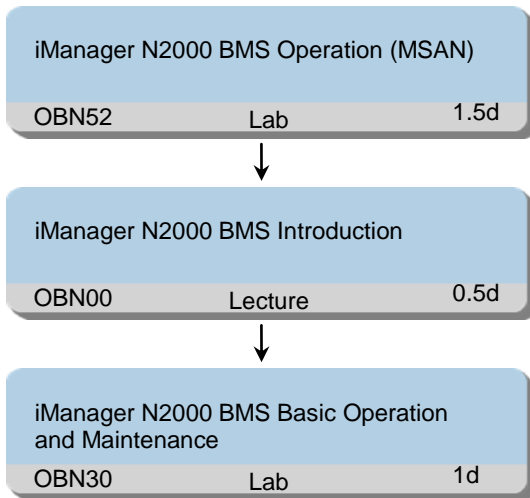
3 working days

Class Size

Min 6, Max 12

1.11.5 iManager N2000 BMS Operation Training (MSAN)

Training Path



- Describe network management architecture
- Describe the hardware and software architecture of iManager N2000 BMS
- Describe the features of iManager N2000 BMS
- Describe the interfaces Provided by N2000
- Login to N2000 Server via Client
- Add a map and device
- Deal with the alarm
- Backup and auto save the configuration
- Add a management user
- Perform MSAN ADSL2+ service configuration via N2000 BMS
- Perform MSAN VoIP service configuration via N2000 BMS
- Perform MSAN V5 service configuration via N2000 BMS
- Perform MSAN multicast service configuration via N2000 BMS

Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- General understanding of telecommunication network and MSAN

Objectives

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

Duration

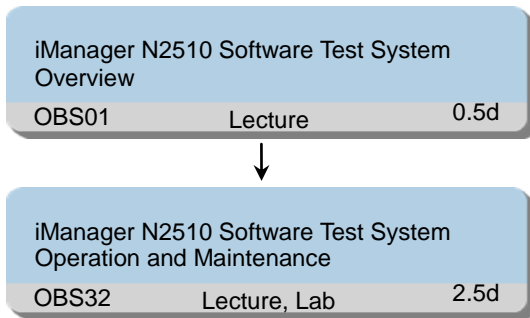
3 working days

Class Size

Min 6, Max 12

1.11.6 iManager N2510 Copper 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

Duration

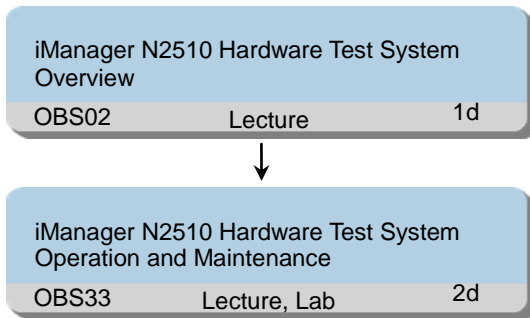
3 working days

Class Size

Min 6, Max 12

1.11.7 iManager N2510 Copper 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

Duration

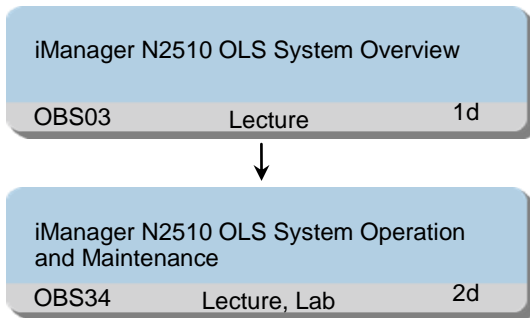
3 working days

Class Size

Min 6, Max 12

1.11.8 iManager N2510 OLS Operation Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- General understanding of PON technology and related parameters

Objectives

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

- Describe iManager N2510 OLS networking
- Outline iManager N2510 OLS solution functions
- List part of ODN common fault
- Describe iManager N2510 OLS function
- Perform iManager N2510 OLS operation and maintenance

Duration

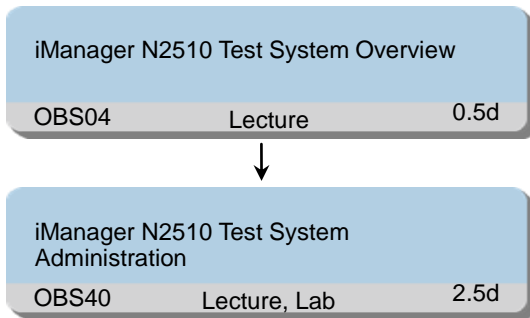
3 working days

Class Size

Min 6, Max 12

1.11.9 iManager N2510 Administration Training

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- General understanding of access network and OS

Objectives

On completion of this program, the participants will

be able to:

- Outline the system architecture, the network position, the networking solution and the functional structure of iManager N2510
- Describe the workstation platform solution of iManager N2510 software test system, such as PC solution and ATAE solution
- Describe the interfaces and its function of iManager N2510 software test system
- Describe iManager N2510 installation procedure
- Describe iManager N2510 administration item
- Perform iManager N2510 administration

Duration

3 working days

Class Size

Min 6, Max 12

1.12 Access Technology Online Training (WBT) Training Programs

1.12.1 GPON Fundamentals(WBT)

Training Path

GPON Fundamentals (WBT)		
OBA23	WBT	1h

Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe GPON typical application scenarios
- Describe the functions and specifications of GPON components

- Describe the upstream and downstream technology
- Describe the key performance parameters on distance, bandwidth, optical launched power, received sensitive power, attenuation, etc.
- Describe important concepts about GEM port and T-CONT
- Describe service encapsulation and multiplexing measures
- Describe the QoS and security solution in GPON
- Describe ONT management measures

Duration

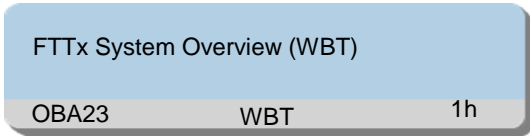
1 hour

Class Size

No limit

1.12.2 FTTx System Overview(WBT)

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication network

Objectives

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

- Describe FTTx network architecture
- Describe OLT appearance, typical configuration, parameter and connections
- Describe MxU appearance, typical configuration, parameters
- Describe ONT appearance, typical configuration, parameters
- Describe FTTx cable
- Describe FTTH/B/C/O/M solutions

Duration

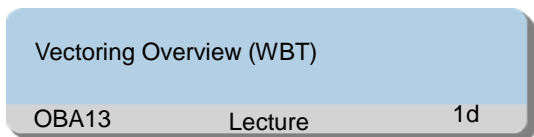
1 hour

Class Size

No limit

1.12.3 Vectoring Overview (WBT)

Training Path



Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

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

- Describe vectoring technology features
- Describe vectoring key technology
- Describe vectoring network solution

Duration

1 working day

Class Size

No limit

1.12.4 ODN and iODN Solution Overview (WBT)

Training Path

ODN and iODN Solution Overview (WBT)		
OBO60	Lecture	1d

Target Audience

Technical Support Engineers
Operation and Maintenance Engineers

Prerequisites

- A basic understanding of telecommunication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe ODN Network Composing
- Describe ODN Network Maintenance Challenge
- Describe iODN Network Structure
- Describe iODN Solution Module
- Outline iODN advantage

Duration

1 working day

Class Size

No limit