



Customer Training Catalog Training Programs PS



HUAWEI
HUAWEI Learning Service
2015



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1 Training Path

1.1 PS Training Path

PS Training Path

Junior Field Maintenance Engineers

Senior Field Maintenance Engineers

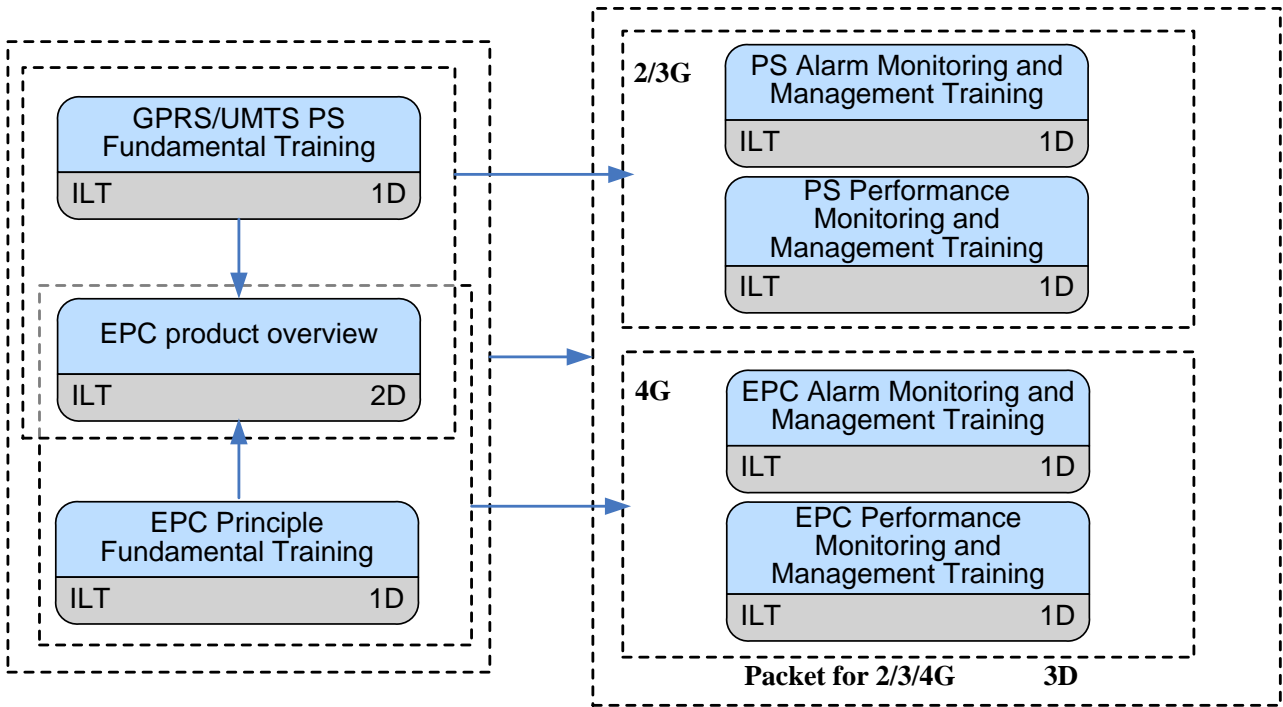


Figure1. Field Maintenance Training Path

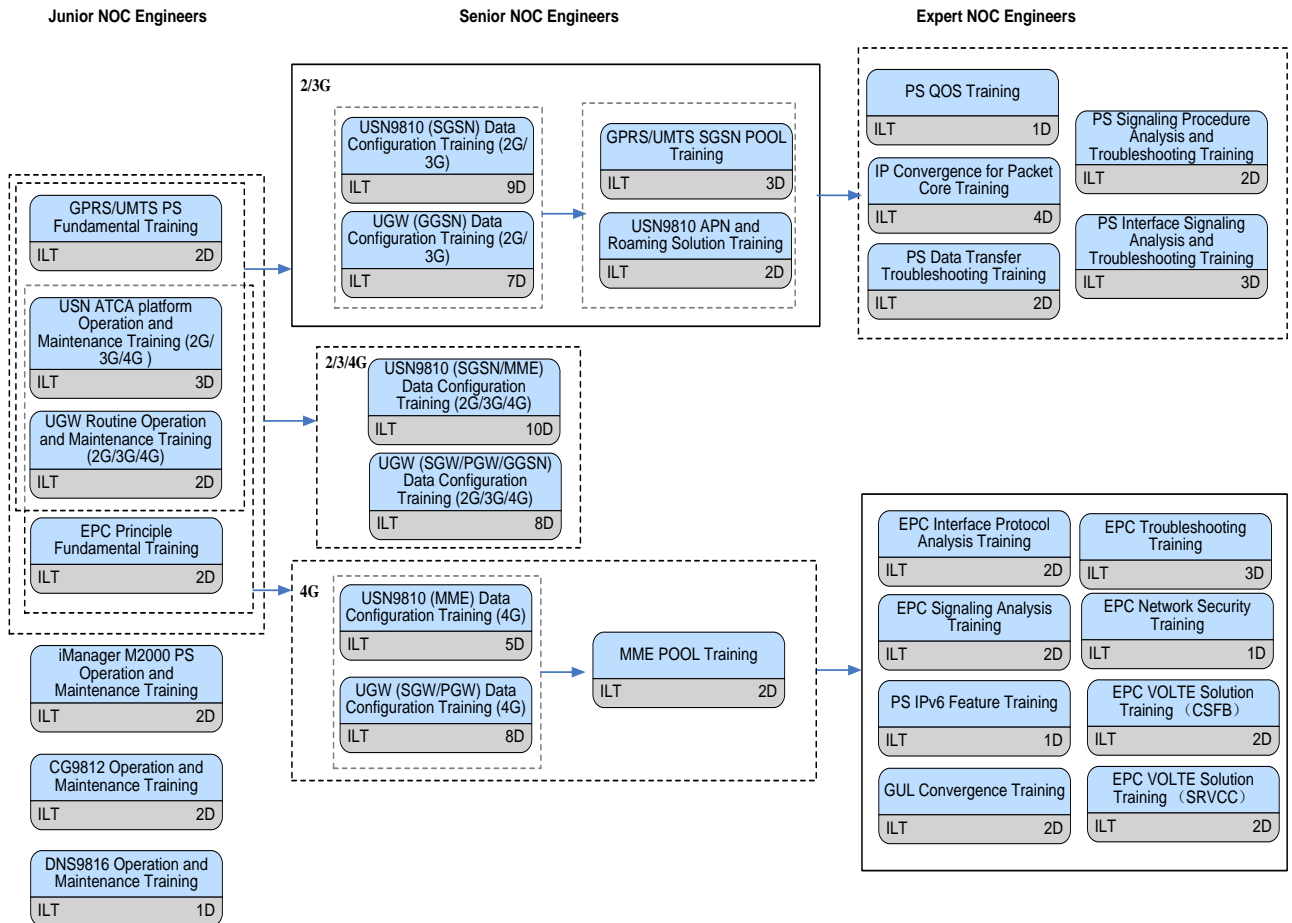


Figure2. NOC Training Path

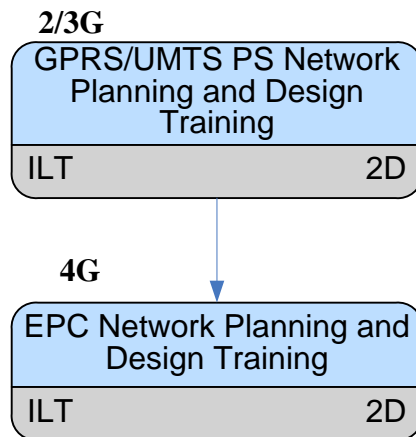


Figure3. Network Planning and Design Training Path

Senior Network Optimization Engineers

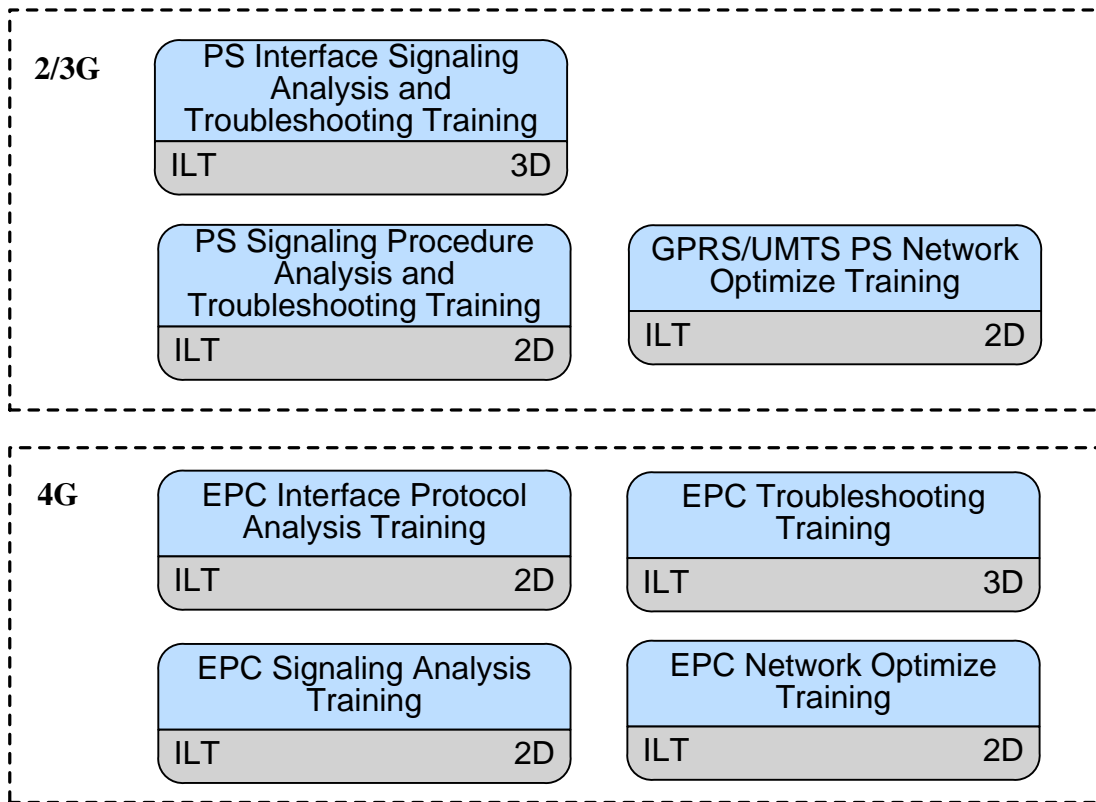


Figure4. Network Optimization Training Path

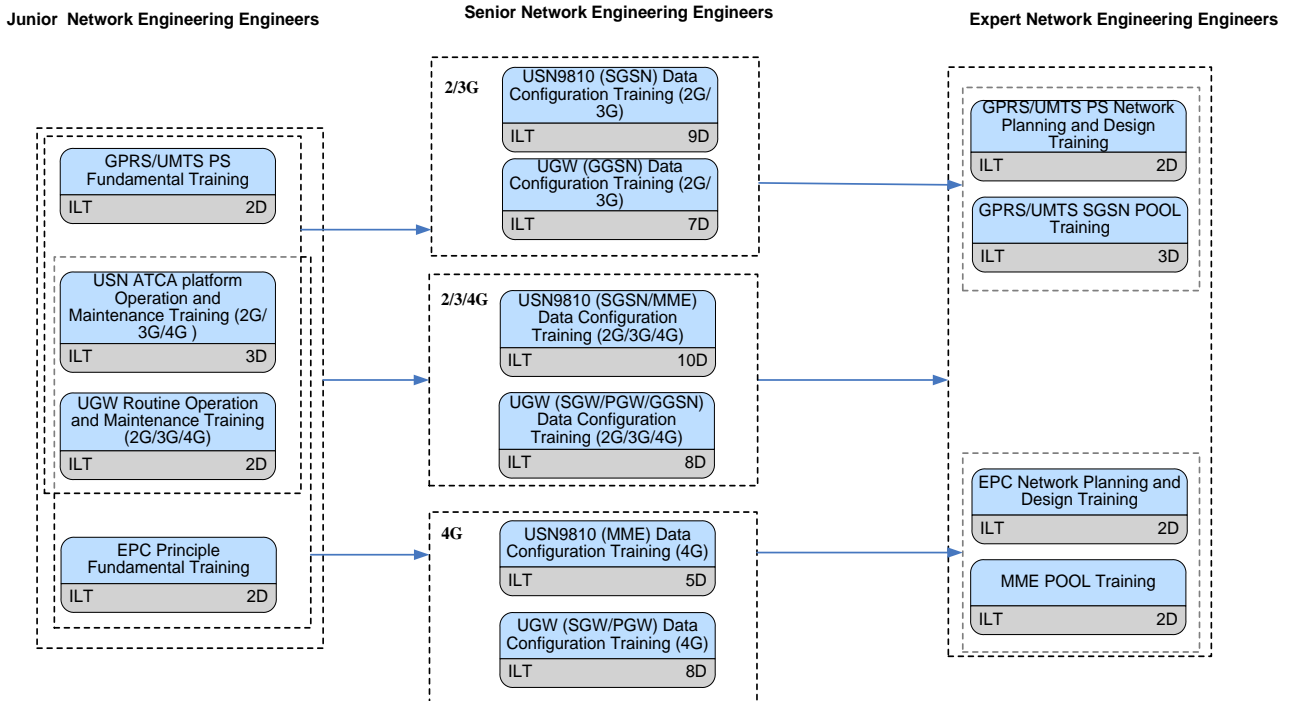


Figure5. Network engineering Training Path



Figure6.Huawei Certification Training Path

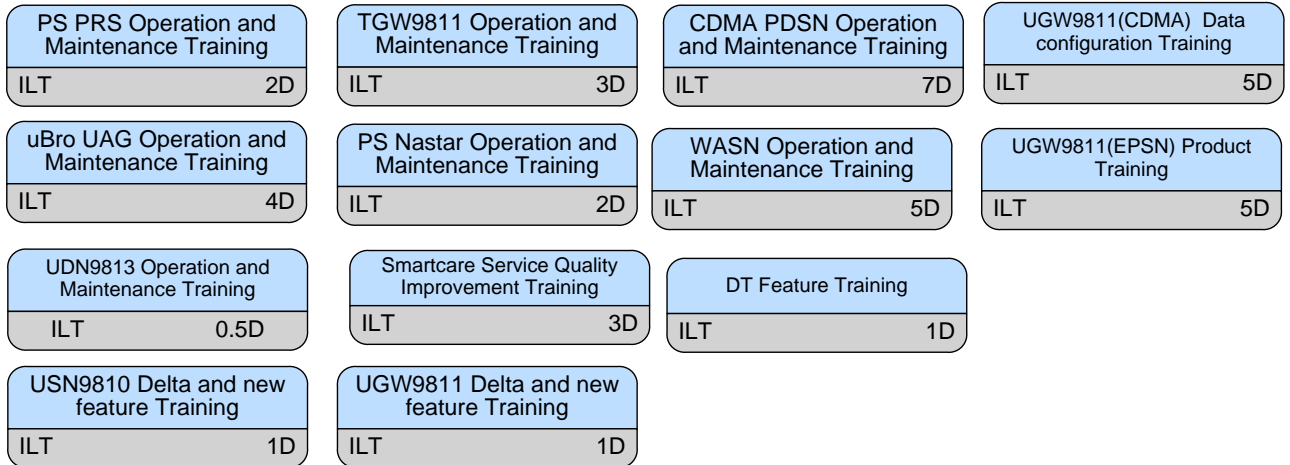


Figure7. Other Training Path

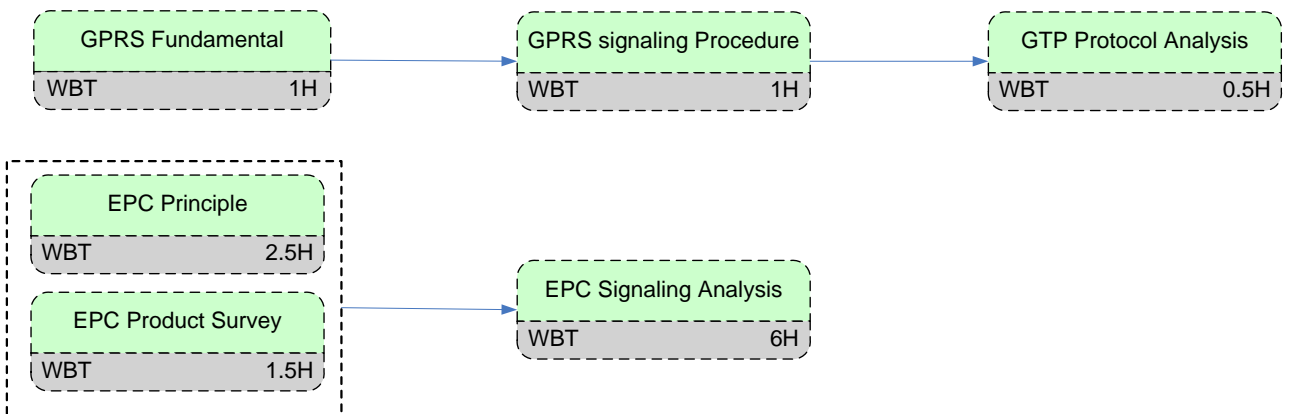


Figure8. WBT Training Path

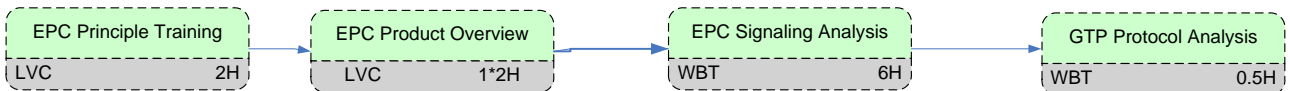


Figure9. LVC Training Path

2 Training Programs

PS Training Programs are designed as follows:

Training Programs	Level	Duration (working days)	Training Location	Class Size
PS				
GPRS/UMTS PS Fundamental Training	I	2		6 ~ 12
EPC Principle Fundamental Training	II	2		6 ~ 12
EPC product (USN&UGW&CG) overview	II	2		6 ~ 12
USN ATCA platform Operation and Maintenance Training (2G/3G/4G)	II	3		6 ~ 12
USN9810 (MME) Data Configuration Training (4G)	III	5		6 ~ 12
USN9810 (SGSN/MME) Data Configuration Training (2G/3G/4G)	III	10		6 ~ 12
USN9810 (SGSN) Data Configuration Training (2G/3G)	III	9		6 ~ 12
USN9810 Delta and new feature Training	III	1		6 ~ 12
USN9810 APN and Roaming Solution Training	III	2		6 ~ 12
UGW Routine Operation and Maintenance Training (2G/3G/4G)	II	2		6 ~ 12
UGW (SGW/PGW) Data Configuration Training (4G)	III	8		6 ~ 12
UGW (SGW/PGW/GGSN) Data Configuration Training (2G/3G/4G)	III	8		6 ~ 12
UGW (GGSN) Data Configuration Training (2G/3G)	III	7		6 ~ 12
UGW9811 Delta and new feature Training	III	1		6 ~ 12
CG9812 Operation and Maintenance Training (Windows)	II	2		6 ~ 12
CG9812 Operation and Maintenance Training (UNIX)	II	2		6 ~ 12
CG9812 Operation and Maintenance Training(ATCA)	II	2		6 ~ 12
PS Alarm Monitoring and Management Training	II	1		6 ~ 12
EPC Alarm Monitoring and Management Training	II	1		6 ~ 12
PS Performance Monitoring and Management Training	III	1		6 ~ 12
EPC Performance Monitoring and Management Training	III	1		6 ~ 12
EPC Network Security Training	III	1		6 ~ 12
GUL Convergence Training	III	2		6 ~ 12
EPC VOLTE Solution Training (CSFB)	IV	2		6 ~ 12

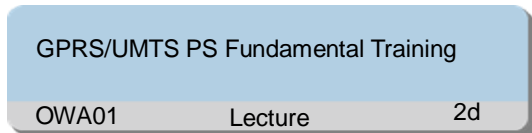
EPC VOLTE Solution Training (SRVCC)	IV	2		6 ~ 12
PS IPv6 Feature Training	IV	1		6 ~ 12
GPRS/UMTS SGSN POOL Training	III	3		6 ~ 12
MME POOL Training	III	2		6 ~ 12
PS QOS Training	IV	1		6 ~ 12
IP Convergence for Packet Core Training	III	4		6 ~ 12
PS Signaling Procedure Analysis and Troubleshooting Training	IV	2		6 ~ 12
PS Interface Signaling Analysis and Troubleshooting Training	IV	3		6 ~ 12
PS Data Transfer Troubleshooting Training	IV	2		6 ~ 12
EPC Interface Protocol Analysis Training	IV	2		6 ~ 12
EPC Signaling Analysis Training	IV	2		6 ~ 12
EPC Troubleshooting Training	IV	3		6 ~ 12
GPRS/UMTS PS Network Optimize Training	IV	2		6 ~ 12
GPRS/UMTS PS Network Planning and Design Training	IV	2		6 ~ 12
EPC Network Planning and Design Training	IV	2		6 ~ 12
EPC Network Optimize Training	IV	2		6 ~ 12
iManager M2000 PS Operation and Maintenance Training	II	2		6 ~ 12
DNS9816 Operation and Maintenance Training	II	1		6 ~ 12
uBro UAG Operation and Maintenance Training	II	4		6 ~ 12
WASN Operation and Maintenance Training	II	5		6 ~ 12
TGW9811 Operation and Maintenance Training	II	3		6 ~ 12
CDMA PDSN Operation and Maintenance Training	II	7		6 ~ 12
UGW9811(CDMA) PDSN Data configuration Training	II	5		6 ~ 12
PS Nastar Operation and Maintenance Training	II	1		6 ~ 12
PS PRS Operation and Maintenance Training	II	1		6 ~ 12
UGW9811(EPSN) Product Training	II	5		6 ~ 12
UDN9813 Operation and Maintenance Training	II	0.5		6 ~ 12
DT Feature Training	II	1		6 ~ 12

Smartcare Service Quality Improvement Training	III	3		6 ~ 12
HCNA LTE HUAWEI Certification	II	6		6 ~ 12
HCNP EPC HUAWEI Certification	III	13		6 ~ 12
HCIE EPC HUAWEI Certification	IV	8		6 ~ 12

2.1 PS Training Programs

2.1.1 GPRS/UMTS PS Fundamental Training

Training Path



Target Audience

All Technical and non-Technical Persons

Prerequisites

- A general understanding about mobile communication and data communication.

Objectives

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

- Outline the UMTS PS Network Structure.
- Describe the PS Core Network interface and Protocol.
- Describe the PS Core Network Working Principle.

Duration

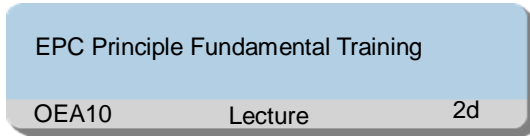
2 working days

Class Size

Min 6, Max 12

2.1.2 EPC Principle Fundamental Training

Training Path



Target Audience

All Technical and non-Technical Persons

Prerequisites

A general understanding about mobile communication and data communication

Be familiar with Windows operating system.

Objectives

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

- Outline the EPC network structure.
- Describe the EPC network interface and protocol.
- Describe the EPC network working procedures.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.3 EPC product (USN&UGW&CG) overview

Training Path

EPC product (USN&UGW&CG) overview		
OEB90	Lecture, Lab, Demo	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program EPC
Principle Fundamental Training

Objectives

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

- Outline USN9810 background, function, feature and specification.
- Outline UGW9811 background, function, feature and specification.
- Outline CG9812 background, function, feature and specification.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.4 USN9810 ATCA platform Operation and Maintenance Training (2G/3G/4G)

Training Path

USN ATCA platform Operation and Maintenance Training		
OEB9B	Lecture, Lab, Demo	3d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program EPC
Principle Fundamental Training

Objectives

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

- Describe system structure and hardware structure of USN9810.
- Perform software related installation and upgrade procedure.
- Perform hardware operation and maintenance.
- Perform the Routine Operation and Maintenance including security management, system information management, alarm management, trace management, data management, license management, performance management.

Duration

3 working days

Class Size

Min 6, Max 12

2.1.5 USN9810 (MME) Data Configuration Training (4G)

Training Path

USN9810 (MME) Data Configuration
Training (4G)

OEB9B Lecture, Lab, Demo 5d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer
Second line Maintenance Engineer, Senior
Maintenance Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program USN ATCA
platform Operation and Maintenance Training

Objectives

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

- Describe the functions of protocol stacks of
different interfaces.
- Perform configuration of USN hardware,
System Information, interworking with eNodeB,
HSS, MME, S-GW, DNS and NTP.
- Perform configuration of mobility management
and session management.

Duration

5 working days

Class Size

Min 6, Max 12

2.1.6 USN9810 (SGSN/MME) Data Configuration Training (2G/3G/4G)

Training Path

USN9810 (SGSN/MME) Data
Configuration Training (2G/3G/4G)
OEB9B Lecture, Lab, Demo 10d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer
Second line Maintenance Engineer, Senior
Maintenance Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program USN ATCA
platform Operation and Maintenance Training

Objectives

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

- Describe the functions of protocol stacks of different interfaces.
- Perform configuration of SGSN Gb, Iu-PS, Gn, Ga and Gr interfaces.
- Perform configuration of SGSN basic service.
- Perform configuration of USN hardware, System Information, interworking with eNodeB, HSS, MME, S-GW, DNS and NTP.
- Perform configuration of mobility management and session management.

Duration

10 working days

Class Size

Min 6, Max 12

2.1.7 USN9810 (SGSN) Data Configuration Training (2G/3G)

Training Path

USN9810 (SGSN) Data Configuration Training (2G/3G)		
OEB91	Lecture, Lab, Demo	9d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer
Second line Maintenance Engineer, Senior
Maintenance Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Successful completion of the program USN ATCA
platform Operation and Maintenance Training

Objectives

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

- Perform configuration of SGSN hardware.
- Perform configuration of SGSN Gb, Iu-PS, Gn,
Ga and Gr interfaces.
- Perform configuration of SGSN basic service.

Duration

9 working days

Class Size

Min 6, Max 12

2.1.8 USN9810 Delta and new feature Training

Training Path

USN9810 Delta and new feature Training		
OEB10	Lecture	1d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Successful completion of the program USN ATCA
platform Operation and Maintenance Training

Objectives

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

- Describe USN9810 new feature in new version

Duration

1 working day

Class Size

Min 6, Max 12

2.1.9 USN9810 APN and Roaming Solution Training

Training Path

USN9810 APN and Roaming Solution Training		
OEB31	Lecture, Lab, Demo	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program USN ATCA
platform Operation and Maintenance Training

Objectives

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

- Describe principle of international roaming.
- Perform roaming data configurations of SGSN/GGSN/DNS/FW.
- Describe principle of APN rectify.
- Perform data configurations of APN rectify.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.10 UGW9811 Routine Operation and Maintenance Training (2G/3G/4G)

Training Path

UGW Routine Operation and Maintenance Training		
OEB21	Lecture, Lab, Demo	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program EPC
Principle Training

Objectives

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

- Describe system structure and hardware structure of UGW9811.
- Perform software related installation and upgrade procedure.
- Perform hardware operation and maintenance.
- Perform the Routine Operation and Maintenance including authorization management, system information management, alarm management, trace management ,log management, license management ,patch management ,data backup and restore.

Duration

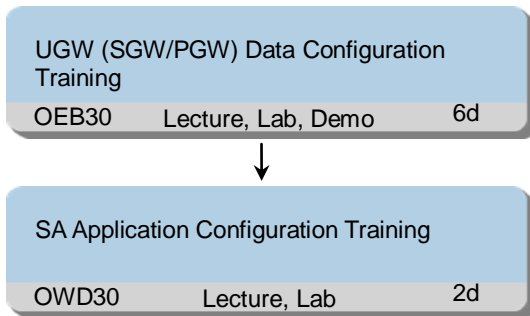
2 working days

Class Size

Min 6, Max 12

2.1.11 UGW9811 (SGW/PGW) Data Configuration Training (4G)

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer, Second line Maintenance Engineer,
Senior Maintenance Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program of UGW
Routine Operation and Maintenance Training

Objectives

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

- Describe data configuration of S1-U/S11, S5/S8 and SGi interfaces.
- Describe basic concept of VPN, APN and charging.
- Perform configuration of VPN, APN and charging.
- Describe the SA principles, content based charging principles and PCC concepts.
- Perform configuration of the SA function, content-based charging function and PCC.

Duration

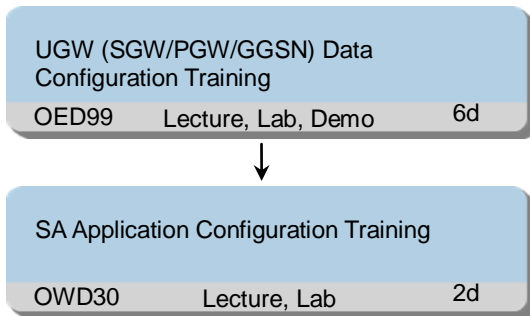
8 working days

Class Size

Min 6, Max 12

2.1.12 UGW9811 (SGW/PGW/GGSN) Data Configuration Training (2G/3G/4G)

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer
Second line Maintenance Engineer, Senior
Maintenance Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program of UGW
Routine Operation and Maintenance Training

Objectives

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

- Describe data configuration of S1-U/S11, S5/S8 and SGi interfaces
- Describe basic concept of VPN, APN and charging.
- Perform configuration of VPN, APN and charging.
- Describe the SA principles, content based charging principles and PCC concepts.
- Perform configuration of the SA function, service control function and PCC.
- Perform the SA application content base charging and service control.

Duration

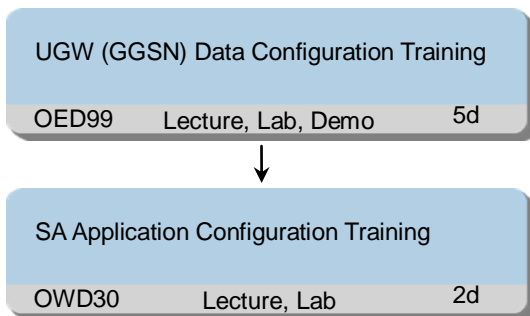
8 working days

Class Size

Min 6, Max 12

2.1.13 UGW9811 (GGSN) Data Configuration Training (2G/3G)

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer
Second line Maintenance Engineer, Senior
Maintenance Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program of UGW
Routine Operation and Maintenance Training

Objectives

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

- Perform configuration of Gn/Gp, Ga and Gi interfaces and route.
- Describe data Describe basic concept of VPN, APN and charging.
- Perform configuration of VPN, APN and charging.
- Describe the SA principles, content based charging principles and PCC concepts.
- Perform configuration of the SA function, service control function and PCC.
- Perform the SA application content base charging and service control.

Duration

7 working days

Class Size

Min 6, Max 12

2.1.14 UGW9811 Delta and new feature Training

Training Path

UGW9811 Delta and new feature Training		
OED10	Lecture	1d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Successful completion of the program of UGW
Routine Operation and Maintenance Training

Objectives

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

- Describe UGW9811 new feature in new version

Duration

1 working day

Class Size

Min 6, Max 12

2.1.15 CG9812 Operation and Maintenance Training (Windows)

Training Path

CG9812 Administration (Windows) Training		
OWI30	Lecture, Lab	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program
GPRS/UMTS PS Fundamental Training

Objectives

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

- Describe the charging principle of PS core network.
- Describe the CG9812 system structure.
- Perform key maintenance parameters configuration in CG server.
- Perform Routine Operation and Maintenance of CG server.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.16 CG9812 Operation and Maintenance Training (UNIX)

Training Path

CG9812 Administration (UNIX) Training		
OWI31	Lecture, Lab	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program
GPRS/UMTS PS Fundamental Training

Objectives

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

- Outline the charging principle of PS core network.
- Describe the CG9812 system structure.
- Perform key maintenance parameters configuration in CG server.
- Perform the Routine Operation and Maintenance of CG server.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.17 CG9812 Operation and Maintenance Training(ATCA)

Training Path

CG9812 Operation and Maintenance Training (ATCA)		
OWI50	Lecture, Lab, Demo	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Get familiar with TCP/IP.

Objectives

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

- Perform CG9812 routine maintenance.
- Perform CG9812 client software installation and CDR browsing/query.

Duration

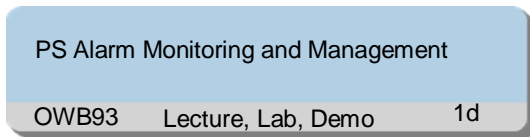
2 working days

Class Size

Min 6, Max 12

2.1.18 PS Alarm Monitoring and Management Training

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Get familiar with TCP/IP.
1 years related experience in PS equipment
maintenance.

Successful completion of the program of
GPRS/UMTS PS Fundamental Training

Objectives

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

- Describe basic alarm.
- Perform basic method of alarm monitoring and
management.

Duration

1 working day

Class Size

Min 6, Max 12

2.1.19 EPC Alarm Monitoring and Management Training

Training Path

EPC Alarm Monitoring and Management Training		
OEB93	Lecture, Lab, Demo	1d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Get familiar with TCP/IP.
2 years related experience in PS equipment

maintenance.

Successful completion of the program of
GPRS/UMTS PS Fundamental Training

Objectives

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

- Perform the basic alarm monitoring.
- Perform the basic alarm analysis and process.

Duration

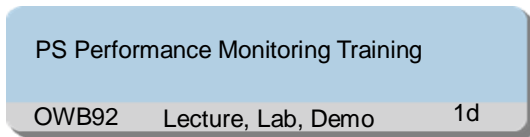
1 working day

Class Size

Min 6, Max 12

2.1.20 PS Performance Monitoring and Management Training

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Get familiar with TCP/IP.
3 years related experience in PS equipment
maintenance.

Successful completion of the program of
GPRS/UMTS PS Fundamental Training

Objectives

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

- Describe Key Performance Indicator of SGSN.
- Describe Key Performance Indicator of GGSN.
- Perform KPI collection method.

Duration

1 working day

Class Size

Min 6, Max 12

2.1.21 EPC Performance Monitoring and Management Training

Training Path

EPC Performance Monitoring and Management Training		
OEB92	Lecture, Lab, Demo	1d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Get familiar with TCP/IP.
5 years related experience in PS equipment
maintenance.

Successful completion of the program of
GPRS/UMTS PS Fundamental Training

Objectives

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

- Describe the KPIs in USN.
- Describe the KPIs in UGW.
- Describe the KPIs in CG.
- Describe the observation method of KPI.

Duration

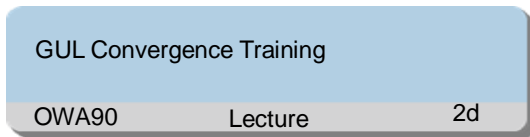
1 working day

Class Size

Min 6, Max 12

2.1.22 GUL Convergence Training

Training Path



Target Audience

All Technical and non-Technical Persons

Prerequisites

A general understanding of mobile communication and data communication

Successful completion of the program EPC Principle Fundamental and GPRS/UMTS PS Fundamental Training

Objectives

On completion of this program, the participants will

be able to:

- Describe EPC Principle.
- Describe EPC Network Deployment Policy.
- Describe EPC Network Element Deployment Policy.
- Describe the networking of GUL interoperation.
- Describe the principle of GUL Interoperation.
- Describe key point of GUL Interoperation Deployment.

Duration

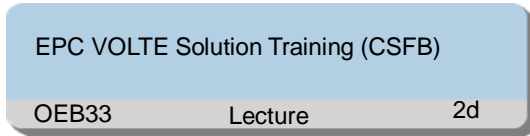
2 working days

Class Size

Min 6, Max 12

2.1.23 EPC VOLTE Solution Training (CSFB)

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication
and data communication

Successful completion of the program EPC
Principle Fundamental Training

Objectives

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

- Describe network structure of CSFB.
- Perform signaling analysis of CSFB.

Duration

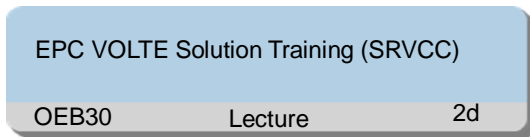
2 working day

Class Size

Min 6, Max 12

2.1.24 EPC VOLTE Solution Training (SRVCC)

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication
and data communication

Successful completion of the program EPC
Principle Fundamental Training

Objectives

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

- Describe network structure of SRVCC.
- Perform signaling analysis of SRVCC.

Duration

2 working day

Class Size

Min 6, Max 12

2.1.25 PS IPv6 Feature Training

Training Path

IPv6 Solution for PS/EPC		
OEY00	Lecture, Lab, Demo	1d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Get familiar with TCP/IP.
Successful completion of the program of EPC Data
Configuration Training

Successful completion of the program of EPC
Equipment Commissioning Training

Objectives

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

- Describe the IPv6 implementation for PS and EPC.
- Describe the data configuration for IPv6 solution in PS and EPC.

Duration

1 working day

Class Size

Min 6, Max 12

2.1.26 GPRS/UMTS SGSN POOL Training

Training Path

SGSN POOL Training		
OWB76	Lecture, Lab	3d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general mobile communication and data
communication
Successful completion of the program
GPRS/UMTS Principle Training
Successful completion of the program SGSN

Routine Operation and Maintenance training
Successful completion of the program SGSN data
configuration Training

Objectives

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

- Describe the principle of SGSN POOL.
- Perform data configuration of SGSN POOL.
- Perform Operation and Maintenance of SGSN
POOL.

Duration

3 working days

Class Size

Min 6, Max 12

2.1.27 MME POOL Training

Training Path

MME POOL Training		
OEB32	Lecture, Lab	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Successful completion of the program of USN
ATCA platform Operation and Maintenance

Training (2G/3G/4G).

Successful completion of the program of USN9810
Data Configuration Training

Objectives

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

- Describe principle of MME pool.
- Perform data configuration of MME pool.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.28 PS QOS Training

Training Path

PS QOS Training		
OWA11	Lecture	1d

Target Audience

Routine Maintenance Engineer, Optimization Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication and data communication
Get familiar with TCP/IP and GPRS principle.
2 years related experience in PS domain.

Objectives

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

- Describe PS QoS parameter.
- Describe PS QoS negotiation process.
- Describe PS service QoS parameter default value.
- Describe SGSN QoS handling.
- Describe UE and Radio Part QoS handling.

Duration

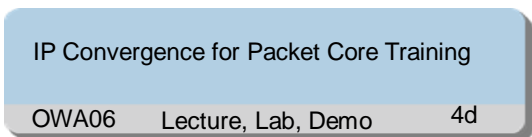
1 working day

Class Size

Min 6, Max 12

2.1.29 IP Convergence for Packet Core Training

Training Path



Target Audience

Routine Maintenance Engineer, Optimization Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication and data communication
Get familiar with TCP/IP and GPRS Principle.

Objectives

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

- Describe TCP/IP fundamental related to GPRS/UMTS PS network.
- Describe IP backbone and key Data communication technology.

- Describe interconnection solution between PS and CE.
- Perform IP Planning between PS and CE.
- Perform Data configuration between PS and CE.
- Perform Iu/Gb/Gr/Gn/Ga interface networking and reliability solution.
- Execute OM interface networking and reliability solution.
- Describe PS networking troubleshooting method.
- Perform common troubleshooting according to case study.

Duration

4 working days

Class Size

Min 6, Max 12

2.1.30 PS Signaling Procedure Analysis and Troubleshooting Training

Training Path

PS Signaling Procedure Analysis and Troubleshooting		
OWB76	Lecture, Lab, Demo	2d

Target Audience

Routine Maintenance Engineer, Optimization Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication and data communication
Get familiar with TCP/IP.
1 years related experience in PS equipment maintenance.

Successful completion of the program of GPRS/UMTS PS Fundamental Training

Objectives

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

- Describe important procedures and parameters of MM/SM.
- Perform MM/SM/Service Troubleshooting.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.31 PS Interface Signaling Analysis and Troubleshooting Training

Training Path

PS Interface Signaling Analysis and Troubleshooting Training		
OWB77	Lecture, Lab, Demo	3d

Target Audience

Routine Maintenance Engineer, Optimization Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication and data communication
Get familiar with TCP/IP.
1 years related experience in PS equipment maintenance.

Successful completion of the program of GPRS/UMTS PS Fundamental Training

Objectives

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

- Describe important procedures and parameters of RANAP/MAP/GTP.
- Perform signaling procedures analysis.

Duration

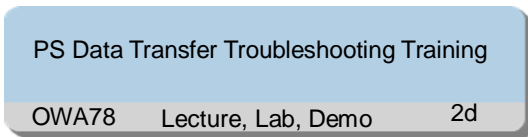
3 working days

Class Size

Min 6, Max 12

2.1.32 PS Data Transfer Troubleshooting Training

Training Path



Target Audience

Routine Maintenance Engineer, Optimization Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication and data communication
Get familiar with TCP/IP.
1 years related experience in PS equipment maintenance.

Successful completion of the program of GPRS/UMTS PS Fundamental Training

Objectives

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

- Perform locating method of Data Transfer fault.
- Perform Troubleshooting method of Data Transfer fault.

Duration

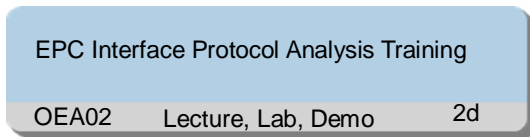
2 working days

Class Size

Min 6, Max 12

2.1.33 EPC Interface Protocol Analysis Training

Training Path



Target Audience

EPC Engineer and Experts, PS Network Planning Engineer, System Design Engineer

Prerequisites

A general understanding of GPRS network principle, mobile communication and data communication.

Objectives

On completion of this program, the participants will

be able to:

- Perform USN9810 signaling tracing method.
- Perform S1-MME interface signaling flow and key parameters analysis.
- Perform S6a interface signaling flow and key parameters analysis.
- Perform S5/S8 interface signaling flow and key parameters analysis.

Duration

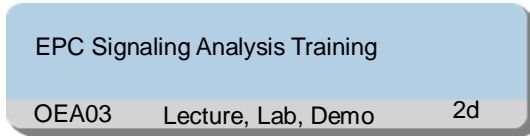
2 working days

Class Size

Min 6, Max 12

2.1.34 EPC Signaling Analysis Training

Training Path



Target Audience

EPC Engineer and Experts, PS Network Planning Engineer, System Design Engineer

Prerequisites

A general understanding of GPRS network principle, mobile communication and data communication.

Objectives

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

- Perform USN9810 signaling tracing method.
- Perform UGW9811 signaling tracing method.
- Perform EMM signaling flow and key parameters analysis.
- Perform ESM signaling flow and key parameters analysis.

Duration

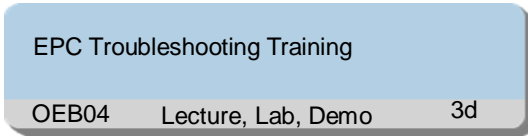
2 working days

Class Size

Min 6, Max 12

2.1.35 EPC Troubleshooting Training

Training Path



Target Audience

Senior maintenance Engineer, Specialist, Experts

Prerequisites

A general understanding of mobile communication and data communication

Get familiar with TCP/IP.

EPC USN9810 Data Configuration Training

EPC UGW9811 Data Configuration Training

Objectives

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

- Describe USN9810/UGW9811 EMM/ESM troubleshooting method.
- Perform USN9810/UGW9811 EMM/ESM related fault located with signaling analysis.

Duration

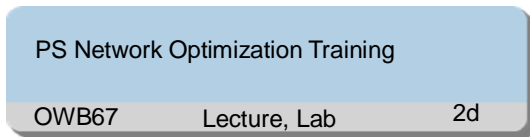
3 working days

Class Size

Min 6, Max 12

2.1.36 GPRS/UMTS PS Network Optimize Training

Training Path



Target Audience

GPRS/UMTS PS Network Optimization Engineer,
System Design Engineer, Senior Engineer and
Experts

Prerequisites

A general mobile communication and data
communication
Successful completion of the program
GPRS/UMTS Principle Training
Successful completion of the program
SGSN/GGSN Routine Operation and Maintenance
training

Successful completion of the program
SGSN/GGSN data configuration Training

Objectives

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

- Describe the general procedure of PS core
network optimization.
- Analyze the PS core network KPI.
- Describe Traffic Statistics Model Extraction.
- Perform Evaluation and Optimization of the
SGSN9810/GGSN9811/DNS/CG Resource
Capacity.

Duration

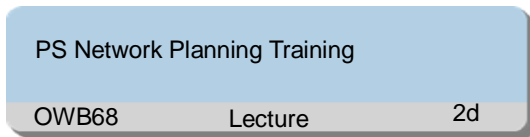
2 working days

Class Size

Min 6, Max 12

2.1.37 GPRS/UMTS PS Network Planning and Design Training

Training Path



Target Audience

GPRS/UMTS PS Network Planning Engineer,
System Design Engineer, Senior Engineer and
Experts

Prerequisites

A general mobile communication and data
communication

Successful completion of the program
GPRS/UMTS Principle Training

Successful completion of the program
SGSN/GGSN Routine Operation and Maintenance
training

Successful completion of the program
SGSN/GGSN data configuration Training

Objectives

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

- Describe PS Network Planning Principle.
- Perform the Networking Scheme for
Gb/Iu/SS7/Gn/Gp/OM/Ga/Li/Gy and
GGSN-SUR, GGSN-SCCG networking
scheme.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.38 EPC Network Planning and Design Training

Training Path

EPC Network Planning and Design Training
OEA07 Lecture, Case, Discussion 2d

Target Audience

PS Network Planning Engineer, System Design Engineer, Senior Engineer and Experts

Prerequisites

A general understanding of mobile communication and data communication
Get familiar with TCP/IP.
Successful completion of the program of EPC Protocol and Procedure Training
Successful completion of the program of EPC Equipment Commissioning Training

Objectives

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

- Describe EPC planning and designing steps.
- Determine IP address, QoS, APN needs for different services.
- Determine capacity for different interfaces.
- Determine the internetworking for different interfaces.

Duration

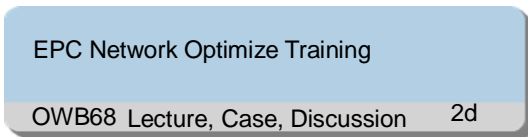
2 working days

Class Size

Min 6, Max 12

2.1.39 EPC Network Optimize Training

Training Path



Target Audience

PS Network Optimization Engineer, System Design Engineer, Senior Engineer and Experts

Prerequisites

- A general understanding of mobile communication and data communication
- Successful completion of the program EPC Principle Training.
- Successful completion of the program USN9810 /UGW9811 Routine Operation and Maintenance training.
- Successful completion of the program USN9810/UGW9811 data configuration Training.

Objectives

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

- Perform Evaluation and Optimization of the USN9810 and UGW9811 Resource Capacity.
- Analyze and optimize the EPC network KPI including Attach Success rate, TAU Success rate, Handover success rate, Dedicated bearer activation success rate.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.40 iManager M2000 PS Operation and Maintenance Training

Training Path

M2000 Routine Operation and Maintenance Training

OWL21

Lecture, Lab

2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general mobile communication and data
communication

Objectives

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

- Describe the overall architecture, hardware architecture, software architecture, typical configuration and interfaces of the M2000.
- Describe the software structure of the M2000 equipment, the functions of different parts.
- Describe the system reliability of the M2000 system from the aspects of system security.
- Perform the Routine Operation and Maintenance of M2000 client.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.41 DNS9816 Operation and Maintenance Training

Training Path

DNS9816 Operation and Maintenance Training		
OEN11	Lecture, Lab, Demo	1d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer.

Prerequisites

A general understanding of mobile communication
and data communication
Get familiar with TCP/IP and GPRS Principle.

Objectives

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

- Describe the main functions and key features

of DNS9816.

- Describe the theory of system realizing and query procedure of DNS9816.
- Describe the hardware and software architecture of DNS9816.
- Perform the basic data configurations of DNS9816.
- Perform the data configurations of optional features about equipment.
- Perform the routine operation and maintenance.

Duration

1 working day

Class Size

Min 6, Max 12

2.1.42 uBro UAG Operation and Maintenance Training

Training Path

UAG Operation and Maintenance Training		
OWB34	Lecture, Lab	4d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Objectives

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

- Describe the physical and logical structure of UAG equipment.
- Explain the functions of different boards in UAG.
- Perform the hardware, eIU, lu-PS, lu-Cs and AHR/NTP interface data configuration of UAG.

Duration

4 working days

Class Size

Min 6, Max 12

2.1.43 WASN Operation and Maintenance Training

Training Path

WASN9770 Operation and Maintenance Training		
OXE30	Lecture, Lab	5d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Objectives

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

- Describe system structure and hardware

structure of WASN9770.

- Describe signaling flow and message.
- Perform operation and maintenance of hardware and software.
- Perform data configuration of basic service, route, and VPN.
- Describe typical application scenarios of IP-CS authentication access, Mobile IP, hot-lining, Eth-CS.
- Perform system commissioning and performance management.

Duration

5 working days

Class Size

Min 6, Max 12

2.1.44 TGW9811 Operation and Maintenance Training

Training Path

TGW9811 Operation and Maintenance Training		
OXT11	Lecture, Lab, Demo	3d

Target Audience

TGW9811 Operation and Maintenance Engineer,
Second line Engineer, Technical Support Engineer

Prerequisites

A general understanding of mobile communication
and data communication
Get familiar with TCP/IP and Principle.

Objectives

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

- Describe WLAN solution and product overview.

- Describe the physical and logical structure of the TGW.
- Describe the board function of TGW.
- Perform the software upgrade and patch/license loading procedure.
- Perform the routine operation and maintenance.
- Perform configuration of Wa, Wa' and Gn' interfaces.
- Perform configuration of Charging.
- Perform configuration to AAA.
- Perform commissioning of TGW.

Duration

3 working days

Class Size

Min 6, Max 12

2.1.45 CDMA PDSN Operation and Maintenance Training

Training Path

CDMA PDSN Operation and Maintenance Training		
ORP03	Lecture, Lab	7d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Objectives

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

- Perform the routine and emergency operation of CDMA PDSN equipments.
- Perform data configuration for equipment interconnection and charging of PDSN.
- Implement data configuration for service of CDMA PDSN.

Duration

7 working days

Class Size

Min 6, Max 12

2.1.46 UGW9811(CDMA) Data configuration Training

Training Path

UGW9811 (CDMA) Data configuration Training		
OEB99	Lecture, Lab, Demo	5d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

- A general understanding of mobile communication and data communication
- Successful completion of the program of CDMA principle training.

Objectives

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

- Describe UGW9811 system structure and function.
- Describe UGW9811 hardware structure.
- Describe UGW9811 software structure.
- Perform UGW9811 routine operation and maintenance.
- Perform UGW9811 interface data configuration and system data configuration.
- Describe principle of content based charging.
- Describe CSN/Mobile IP/Follow control feature.

Duration

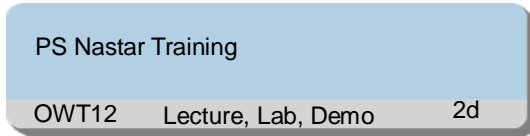
5 working days

Class Size

Min 6, Max 12

2.1.47 PS Nastar Operation and Maintenance Training

Training Path



Target Audience

Routine Maintenance Engineer, Optimization Engineer, Senior Maintenance Engineer.

Prerequisites

A general understanding of mobile communication and data communication
Get familiar with TCP/IP and GPRS Principle.

Objectives

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

- Describe PS Nastar architecture, hardware deployment and feature function.
- Grasp PS Nastar typical networking, software installation.
- Perform client service operation, configuration and maintenance.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.48 PS PRS Operation and Maintenance Training

Training Path

PS PRS Engineer Training		
OWW01	Lecture, Lab, Demo	2d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general mobile communication and data
communication
Successful completion of the program
GPRS/UMTS Principle Training
Successful completion of the program GGSN

Routine Operation and Maintenance training
Successful completion of the program GGSN data
configuration Training

Objectives

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

- Describe function and system structure of PRS.
- Perform hardware deployment.
- Perform PRS operation and maintenance.

Duration

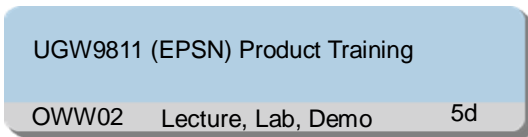
2 working days

Class Size

Min 6, Max 12

2.1.49 UGW9811(EPSN) Product Training

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

- A general understanding of mobile communication and data communication
- Successful completion of the program of GPRS fundamental Training.
- Successful completion of the program EPC Principle Training.

Objectives

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

- Perform hardware operation and maintenance.
- Perform the Routine Operation and Maintenance including authorization

management, system information management, alarm management, trace management ,log management, license management ,patch management ,data backup and restore.

- Outline the EPSN network architecture.
- Outline the main features of the EPSN.
- Outline key features and specifications of the EPSN.
- Be familiar with the EPSN and its three service deployment modes.
- Understand EPSN access principles.
- Understand EPSN access configurations.
- Complete access data configuration on the EPSN.
- Understand EPSN charging feature.
- Grasp how to deploy EPSN PCC feature.

Duration

5 working days

Class Size

Min 6, Max 12

2.1.50 UDN9813 Operation and Maintenance Training

Training Path

UDN9813 Operation and Maintenance Training		
OWW03	Lecture, Demo	0.5d

Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

- A general understanding of mobile communication and data communication.
- Get familiar with TCP/IP and GPRS Principle.
- Successful completion of the program GPRS/UMTS PS Fundamental Training.

Objectives

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

- Describe the principle of UDN9813 equipment and network.
- Describe the UDN9813 system hardware and software structure.
- Configure key maintenance parameters in CG server.
- Perform Routine Operation and Maintenance of CG server.

Duration

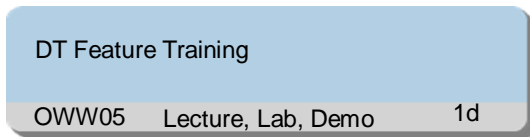
0.5 working day

Class Size

Min 6, Max 12

2.1.51 DT Feature Training

Training Path



Target Audience

PS Advance Engineer, PS Routine Maintenance Engineer

Prerequisites

- A general mobile communication and data communication.
- Successful completion of the program GPRS/UMTS Principle Training.
- Successful completion of the program SGSN Routine Operation and Maintenance training.

- Successful completion of the program SGSN data configuration Training.

Objectives

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

- Describe the principle of PS Direct Tunnel.
- Perform data configuration of PS Direct Tunnel.
- Perform Operation and Maintenance of PS Direct Tunnel.

Duration

1 working day

Class Size

Min 6, Max 12

2.1.52 Smartcare Service Quality Improvement Training

Training Path

Smartcare Service Quality Improvement Training		
OSE03	Lecture	3d

Target Audience

- PS network optimization engineers
- PS network performance monitoring engineers

Prerequisites

- At least two years experience of operation and maintenance of GPRS/UMTS/EPC telecommunication equipments
- A basic knowledge of SmartCare Platform
- Familiar with PS network KPI evaluation and optimization

Objectives

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

- Describe the theory of SmartCare KQI modeling of packet service
- Master PS KPI monitoring and analysis methods in SmartCare NPM
- Master PS KQI monitoring and analysis methods in SmartCare SQM
- Master VIP/VVIP/VAC/Roaming analysis methods in SmartCare CEM

Duration

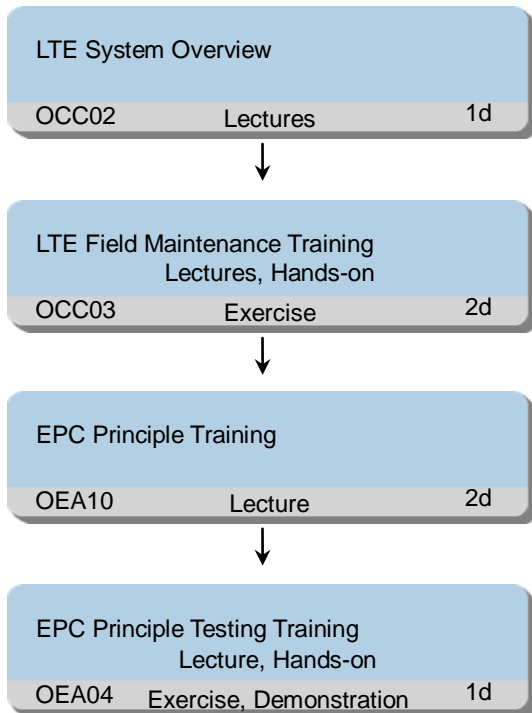
3 working days

Class Size

Min 6, Max 12

2.1.53 HCNA LTE HUAWEI Certification

Training Path



Target Audience

Field Maintenance Engineer, First line
Maintenance Engineer, Routine Maintenance
Engineer

Prerequisites

A general understanding of mobile communication
and data communication

Objectives

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

- Describe the radio interface techniques used in uplink and downlink.
- Describe the channel structure of the radio interface.
- Describe the time-domain structure in the radio interface in UL and DL for both FDD and TDD mode.
- Describe the Frequency-domain structure in the radio interface in UL and DL for both FDD

- and TDD mode.
- Have a good understanding of the OFDM principle, signal generation and processing.
- Detail the reference symbols in DL.
- Describe MIMO technology.
- Outline MBMS for LTE.
- Have a good understanding of the SC-FDMA principle, signal generation and processing.
- Describe Huawei eNodeB Family.
- Describe Huawei LTE products and application scenarios.
- Describe Huawei LTE products Operation and Maintenance System.
- Power up/down the eNodeB and connect up LMT to the node.
- Find the alarm list of eNodeB.
- Perform corrective and preventive maintenance on eNodeB.
- Find faulty hardware units and replace them.
- Describe EPC architecture
- Describe function of each node in EPC
- Describe PDN connection
- Describe EPC bearers and TFT(s)
- Describe tracking areas and tracking area lists
- Describe concepts of ISR (Idle mode Signaling Reduction)
- Describe identifiers and legacy IDs
- Describe security mechanisms in EPC
- Describe QoS in EPC
- Describe the selection function in EPC
- Describe the protocol used in EPC (GTP, PMIP, diameter, etc.)
- Describe attach and detach procedure
- Describe tracking area update procedure
- Describe handover procedure
- Describe bearer activation/modification/deactivation procedure
- Describe SRVCC for voice service
- Describe CSFB for voice service

- Perform USN9810 signaling tracing method.
- Perform UGW9811 signaling tracing method.
- Perform EMM signaling flow and key parameters analysis.
- Perform ESM signaling flow and key parameters analysis.

Duration

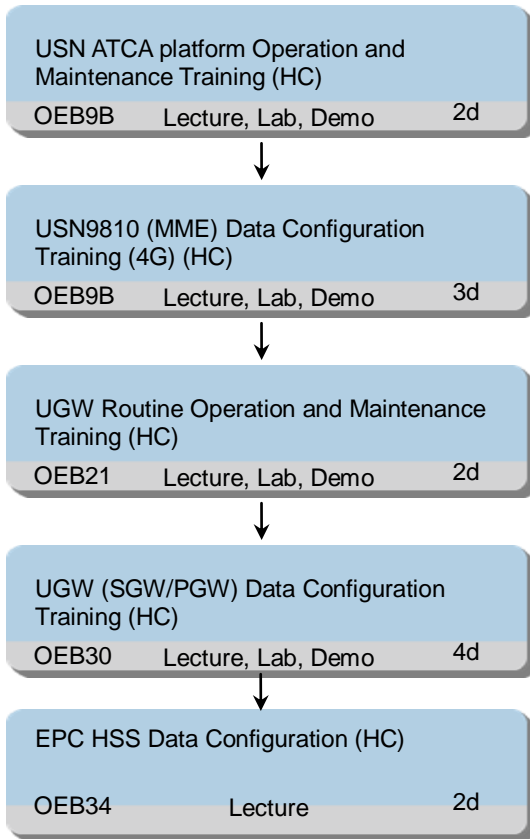
6 working days

Class Size

Min 6, Max 12

2.1.54 HCNP EPC HUAWEI Certification

Training Path



Target Audience

Operation and Maintenance Engineer; Technical Support Engineer

Prerequisites

A general understanding of mobile communication and data communication

Objectives

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

- Describe system structure and hardware structure of USN9810.
- Perform software related installation and upgrade procedure.
- Perform hardware operation and maintenance.
- Perform the Routine Operation and Maintenance including security management,

system information management, alarm management, trace management, data management, license management, performance management.

- Describe the functions of protocol stacks of different interfaces.
- Perform configuration of USN hardware, System Information, interworking with eNodeB, HSS, MME, S-GW, DNS and NTP.
- Perform configuration of mobility management and session management.
- Describe system structure and hardware structure of UGW9811.
- Perform software related installation and upgrade procedure.
- Perform hardware operation and maintenance.
- Perform the Routine Operation and Maintenance including authorization management, system information management, alarm management, trace management ,log management, license management ,patch management ,data backup and restore.
- Perform data configuration of S1-U/S11, S5/S8 and SGi interfaces Describe basic concept of VPN, APN and charging.
- Perform configuration of VPN, APN and charging.
- Describe the SA principles, content based charging principles and PCC concepts.
- Perform configuration of the SA function, service control function and PCC.
- Describe HSS9820 product function and application.
- Describe HSS9820 interface protocol function.
- Describe HSS9820 physical and logical structure.
- Describe HSS9820 board function.
- Describe HSS9820 signaling flow.
- Describe HSS9820 software structure.
- Describe HSS9820 IP planning.
- Perform installation of operation PGW client.

- Perform the method of adding or deleting subscriber.
- Modify subscription according to customer requirement.
- Perform configuration of subscription data.
- Describe the steps of HSS9820 data configuration.
- Perform hardware and system data configuration.
- Perform interface data configuration.
- Check the data configuration correctness and validity.
- Perform basic debugging of EPC-HSS9820.
- Describe Board configuration principle.

- Describe data configuration principles and steps.
- Perform Hardware Data Configuration of USCDB.
- Perform Local Office Data Configuration of USCDB.
- Perform Signaling Data Configuration of USCDB.

Duration

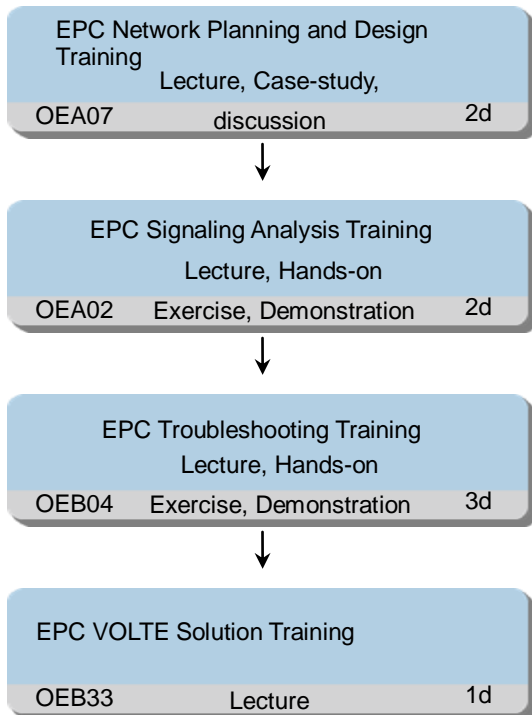
13 working days

Class Size

Min 6, Max 12

2.1.55 HCIE EPC HUAWEI Certification

Training Path



Target Audience

All Technical and non-Technical Persons, PS Network Planning Engineers, System Design Engineers, Senior Engineers and Experts

Prerequisites

A general understanding of mobile communication and data communication

Objectives

On completion of this program, the participants will

be able to:

- Perform USN9810 signaling tracing method.
- Perform UGW9811 signaling tracing method.
- Perform EMM signaling flow and key parameters analysis.
- Perform ESM signaling flow and key parameters analysis.
- Describe USN9810/UGW9811 EMM/ESM troubleshooting method.
- Common USN9810/UGW9811 EMM/ESM related troubleshooting case study.
- Perform USN9810/UGW9811 EMM/ESM related fault located with signaling analysis.
- Describe EPC planning and designing steps.
- Determine IP address, QoS, APN needs for different services.
- Determine capacity for different interfaces.
- Determine the internetworking for different interfaces.
- Describe network structure of CSFB.
- Perform signaling analysis of CSFB.

Determine the internetworking for different interfaces

Duration

8 working days

Class Size

Min 6, Max 12