

Training Proposal for WCDMA Product Technical Training Project



HUAWEI
HUAWEI Learning Service
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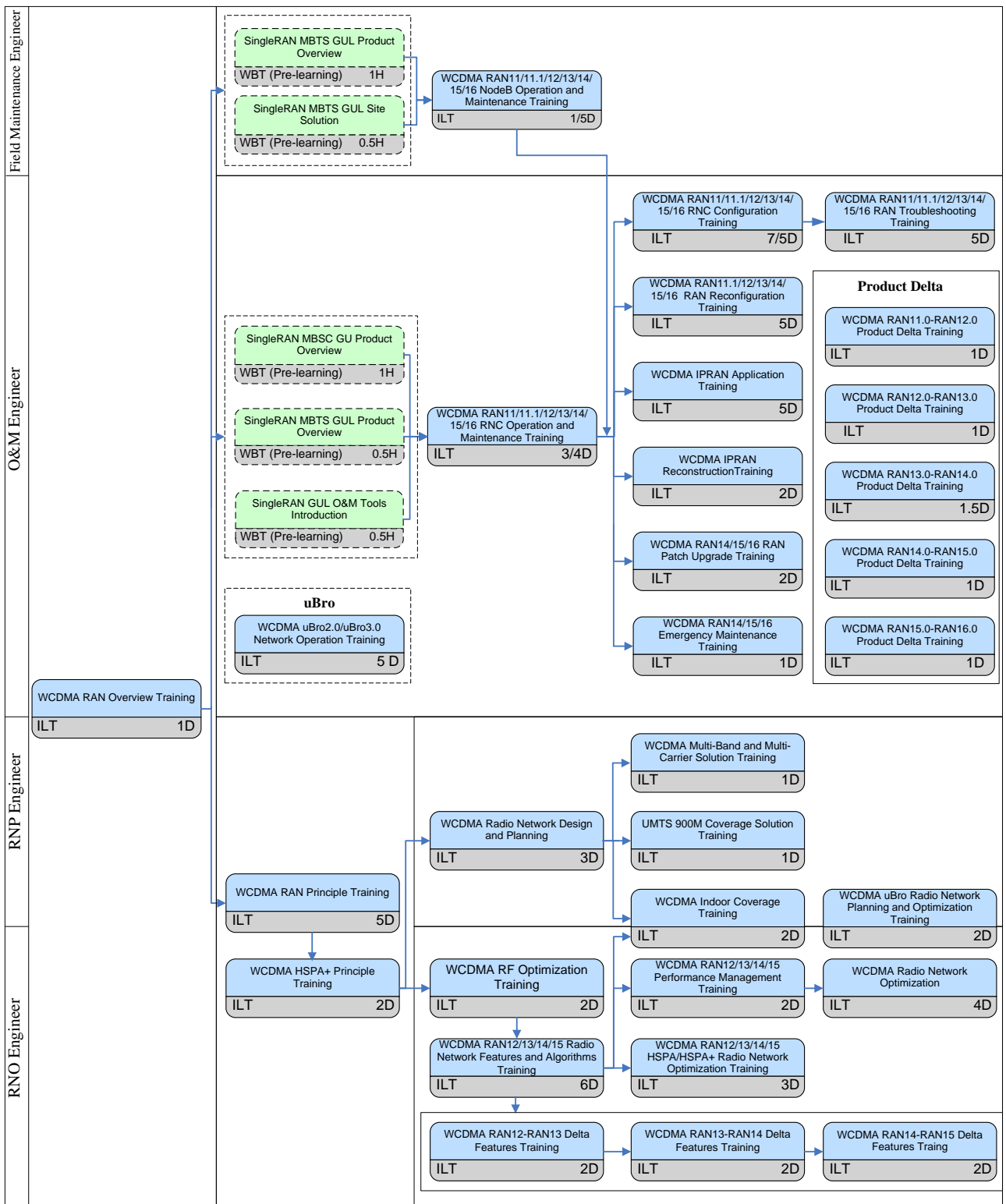
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1 Training Solution

1.1 Background Introduction

1.2 Overview

1.3 WCDMA Product Technical Training Path



1.4 Required Training Programs

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

Training Program	Program Level	Duration (workdays)	Training Location	Class Size
Principle				
WCDMA RAN Overview Training	II	1		6 ~ 12
WCDMA RAN Principle Training	III	5		6 ~ 12
WCDMA HSPA+ Principle Training	III	2		6 ~ 12
RNP and RNO				
WCDMA Radio Network Design and Planning Training	III	2		6 ~ 12
WCDMA Multi-Band and Multi-Carrier Solution Training	IV	1		6 ~ 12
UMTS 900M Coverage Solution Training	IV	1		6 ~ 12
WCDMA Indoor Coverage Training	III	2		6 ~ 12
WCDMA RF Optimization Training	III	2		6 ~ 12
WCDMA RAN12 Radio Network Features and Algorithms Training	III	5		6 ~ 12
WCDMA RAN13 Radio Network Features and Algorithms Training	III	6		6 ~ 12
WCDMA RAN14 Radio Network Features and Algorithms Training	III	6		6 ~ 12
WCDMA RAN15 Radio Network Features and Algorithms Training	III	6		6 ~ 12
WCDMA RAN12 Performance Management Training	IV	2		6 ~ 12
WCDMA RAN13 Performance Management Training	IV	2		6 ~ 12
WCDMA RAN14 Performance Management Training	IV	2		6 ~ 12
WCDMA RAN15 Performance Management Training	IV	2		6 ~ 12
WCDMA Radio Network Optimization	IV	4		6 ~ 12
WCDMA RAN12 HSPA/HSPA+ Radio Network Optimization Training	IV	3		6 ~ 12
WCDMA RAN13 HSPA/HSPA+ Radio Network Optimization Training	IV	3		6 ~ 12
WCDMA RAN14 HSPA/HSPA+ Radio Network Optimization Training	IV	3		6 ~ 12

WCDMA RAN15 HSPA/HSPA+ Radio Network Optimization Training	IV	3		6 ~ 12
WCDMA RAN12-RAN13 Delta Features Training	IV	2		6 ~ 12
WCDMA RAN13-RAN14 Delta Features Training	IV	2		6 ~ 12
WCDMA RAN14-RAN15 Delta Features Training	IV	2		6 ~ 12
WCDMA uBro Radio Network Planning and Optimization Training	IV	2		6 ~ 12
WCDMA Product				
WCDMA RAN11 NodeB Training	II	5		6 ~ 12
WCDMA RAN11 RNC Operation Training	II	3		6 ~ 12
WCDMA RAN11 RNC Configuration Training	II	7		6 ~ 12
WCDMA RAN11 RAN Troubleshooting Training	III	5		6 ~ 12
WCDMA RAN11.1 NodeB Training	II	5		6 ~ 12
WCDMA RAN11.1 RNC Operation Training	II	3		6 ~ 12
WCDMA RAN11.1 RNC Configuration Training	II	7		6 ~ 12
WCDMA RAN11.1 RAN Troubleshooting Training	III	5		6 ~ 12
WCDMA RAN11.1 RAN Reconfiguration Training	III	5		6 ~ 12
WCDMA RAN12.0 NodeB Training	II	5		6 ~ 12
WCDMA RAN12.0 RNC Operation Training	II	3		6 ~ 12
WCDMA RAN12.0 RNC Configuration Training	II	7		6 ~ 12
WCDMA RAN12.0 RAN Troubleshooting Training	III	5		6 ~ 12
WCDMA RAN12.0 RAN Reconfiguration Training	III	5		6 ~ 12
WCDMA RAN11.0-RAN12.0 Product Delta Training	III	1		6 ~ 12
WCDMA uBro2.0 Network Operation Training	II	5		6 ~ 12
WCDMA RAN13.0 NodeB Training	II	5		6 ~ 12
WCDMA RAN13.0 RNC Operation Training	II	4		6 ~ 12
WCDMA RAN13.0 RNC Configuration Training	II	7		6 ~ 12
WCDMA RAN13.0 RAN Reconfiguration Training	III	5		6 ~ 12
WCDMA RAN13.0 RAN Troubleshooting Training	III	5		6 ~ 12

WCDMA RAN12.0-RAN13.0 Product Delta Training	III	1		6 ~ 12
WCDMA uBro3.0 Network Operation Training	II	5		6 ~ 12
WCDMA RAN14.0 NodeB Training	II	5		6 ~ 12
WCDMA RAN14.0 RNC Operation Training	II	4		6 ~ 12
WCDMA RAN14.0 RNC Configuration Training	II	7		6 ~ 12
WCDMA RAN14.0 RAN Reconfiguration Training	III	5		6 ~ 12
WCDMA RAN14.0 RAN Troubleshooting Training	III	5		6 ~ 12
WCDMA RAN13.0-RAN14.0 Product Delta Training	III	1.5		6 ~ 12
WCDMA RAN14.0 RAN Upgrade Training	III	2		6 ~ 12
WCDMA RAN14.0 Emergency Maintenance Training	III	1		6 ~ 12
WCDMA IPRAN Application Training	III	5		6 ~ 12
WCDMA IPRAN Reconstruction Training	III	2		6 ~ 12
WCDMA RAN15.0 BSC6900/6910 Operation and Maintenance Training	II	4		6 ~ 12
WCDMA RAN15.0 BSC6900/6910 Configuration Training	II	7		6 ~ 12
WCDMA RAN15.0 RAN Reconfiguration Training	III	5		6 ~ 12
WCDMA RAN15.0 RAN Troubleshooting Training	III	5		6 ~ 12
WCDMA RAN14.0-RAN15.0 Product Delta Training	III	1.5		6 ~ 12
WCDMA RAN15.0 RAN Patch Upgrade Training	III	2		6 ~ 12
WCDMA RAN15.0 Emergency Maintenance Training	III	1		6 ~ 12
WCDMA RAN15.0 NodeB Operation and Maintenance Training	II	5		6 ~ 12
WCDMA RAN16.0 BSC6900/6910 Operation and Maintenance Training	II	4		6 ~ 12
WCDMA RAN16.0 BSC6900/6910 Configuration Training	II	7		6 ~ 12
WCDMA RAN16.0 RAN Reconfiguration Training	III	5		6 ~ 12
WCDMA RAN16.0 RAN Troubleshooting Training	III	5		6 ~ 12
WCDMA RAN15.0-RAN16.0 Product Delta Training	III	1.5		6 ~ 12

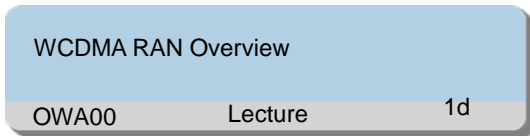
WCDMA RAN16.0 RAN Patch Upgrade Training	III	2		6 ~ 12
WCDMA RAN16.0 Emergency Maintenance Training	III	1		6 ~ 12
WCDMA RAN16.0 NodeB Operation and Maintenance Training	II	5		6 ~ 12
WBT				
BSC6900 V900R013 WCDMA Product Description(WBT)	I	1 h		No limit
WCDMA BSC6900 Operation and Maintenance(WBT)	II	0.5 h		No limit
WCDMA BSC6900 V900R013 Initial Data Configuration Based on CME(WBT)	II	1 h		No limit
3900 Series WCDMA NodeB V100R004 Product Description(WBT)	I	1 h		No limit
WCDMA BTS3900 V100R004 Operation and Maintenance(WBT)	II	0.5 h		No limit
MBTS 3900 V100R004 WCDMA Initial Data Configuration(WBT)	II	0.5 h		No limit
WCDMA RAN14.0 New Features Overview(WBT)	II	1 h		No limit

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

1.5 Principle

1.5.1 WCDMA RAN Overview Training

Training Path



Target Audience

All Technical People

Prerequisites

- Basic knowledge of mobile communications

Objectives

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

- Outline the development of 3G
- Describe the architecture of WCDMA system
- Describe the key features and technologies of WCDMA
- Describe the voice coding of WCDMA
- Outline the channel coding of WCDMA
- Describe the spreading code of different services in WCDMA system
- Describe the scrambling code of WCDMA
- Describe the modulation methods used in WCDMA system
- Explain the usage of transmit diversity and RAKE receiver in WCDMA system
- Describe the concept of Soft Handover

Training Content

OWA00 WCDMA RAN Overview

- WCDMA RAN Overview
 - 3G Overview
 - CDMA Principle
 - WCDMA Network Architecture and protocol structure
 - WCDMA Wireless Fundamental

Duration

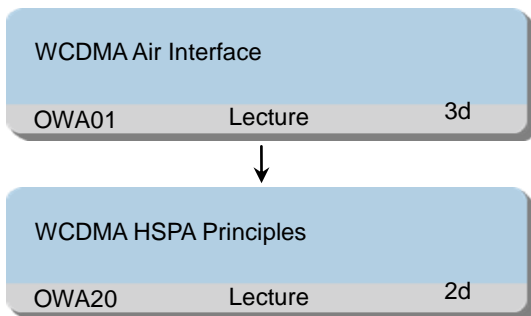
1 working day

Class Size

Min 6, Max 12

1.5.2 WCDMA RAN Principle Training

Training Path



Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training

Objectives

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

- Describe the WCDMA radio interface protocol architecture
- Describe the WCDMA RAN channel structure
- Outline WCDMA RAN physical layer procedures
- Describe the WCDMA RAN signaling procedures: paging, call process, handover, etc
- Describe the UTRAN basic RRM methods (power control, handover, load control, etc)
- Describe WCDMA and HSDPA evolution
- Describe HSDPA key technologies
- Describe HSDPA physical channels
- Describe HSDPA Network and UE protocol stack architecture
- Describe WCDMA and HSUPA evolution
- Describe HSUPA key technologies
- Describe HSUPA physical channels
- Describe HSUPA Network and UE protocol stack architecture

Training Content

OWA01 WCDMA Air Interface

- WCDMA Radio Interface and Physical Layer
 - Physical Layer Overview
 - Physical Channels
 - Physical Channel Structure and Functions

-
- Channel Mapping
 - Physical Layer Procedure
 - WCDMA Radio Resource Management Overview
 - RRM Overview
 - Channel Configuration
 - Power Control
 - Handover
 - Load Control

OWA20 WCDMA HSPA Principles

- WCDMA HSDPA Principles
 - HSDPA Introduction
 - HSDPA Key Techniques
 - HSDPA Physical Layer Channel
 - HSDPA Layer2 Protocol
- WCDMA HSUPA Principles
 - Introduction of HSUPA
 - HSUPA Concepts
 - Physical Layer Channels and Processing
 - MAC Protocols and Procedure

Duration

5 working days

Class Size

Min 6, Max 12

1.5.3 WCDMA HSPA+ Principle Training

Training Path

WCDMA HSPA+ Principles		
OWA21	Lecture	2d

Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training

Objectives

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

- Describe HSPA+ evolution and standards
- Describe HSPA+ key technologies realized in RAN11, such as DL 64QAM, DL MIMO, E-FACH, etc.
- Describe HSPA+ key technologies realized in RAN12, such as DC-HSDPA, MIMO + DL 64QAM, UL 16QAM, etc
- Describe HSPA+ key technologies realized in RAN13, such as DC-HSDPA+MIMO, E-DPCCH Boosting, E-RACH, etc.
- Describe HSPA+ key technologies realized in RAN14, such as DC-HSUPA, etc.
- Describe HSPA+ key technologies realized in RAN15, such as DB-HSDPA, Flexible DC DB-HSDPA, 4C-HSDPA, etc.

Training Content

OWA21 WCDMA HSPA+ Principles

- WCDMA HSPA+ Principles
 - HSPA+ Introduced in RAN 11
 - HSPA+ Introduced in RAN 12
 - HSPA+ Introduced in RAN 13
 - HSPA+ Introduced in RAN 14
 - HSPA+ Introduced in RAN 15

Duration

2 working days

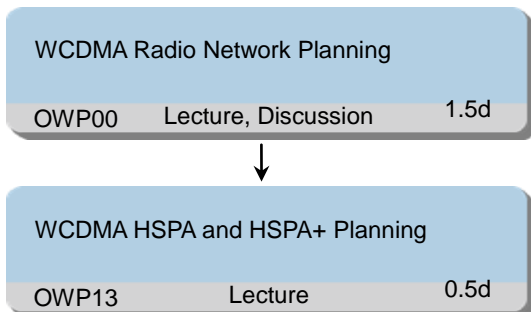
Class Size

Min 6, Max 12

1.6 RNP and RNO

1.6.1 WCDMA Radio Network Design and Planning Training

Training Path



Target Audience

Network Deployment Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training

Objectives

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

- Describe the principle of radio network planning
- Explain the difference between WCDMA and GSM radio network planning
- Explain the principle of WCDMA coverage planning
- Describe the traffic model of WCDMA
- Analyze the WCDMA uplink and downlink radio capacity
- Analyze the WCDMA CE capacity
- Describe Paging Area Planning
- Describe Scrambling Code Planning
- Describe Neighbor Cell Planning
- Describe HSDPA dimensioning principle, including link budget, capacity dimensioning, channel element dimensioning
- Describe HSUPA dimensioning principle, including link budget, capacity dimensioning, channel element dimensioning
- Describe impacts of HSPA+ features on dimensioning, including DL 64QAM , MIMO, CPC,DC-HSDPA, 64QAM+MIMO, UL16QAM, DC-MIMO, DC-HSUPA, etc

Training Content

OWP00 WCDMA Radio Network Planning

- WCDMA Radio Network Coverage Dimensioning
 - WCDMA Radio Network Planning Process
 - R99 Coverage Planning
 - Process of R99 Coverage Planning
 - R99 Uplink Budget
 - R99 Downlink Budget
 - HSDPA Coverage Planning
- WCDMA Radio Network Capacity Dimensioning
 - Traffic Model
 - Overview of traffic model
 - CS traffic model
 - PS traffic model
 - Interference Analysis
 - Uplink Interference Analysis
 - Downlink Interference Analysis
 - Capacity Dimensioning
 - R99 Capacity Dimensioning
 - HSDPA Dimensioning
 - CE Dimensioning
 - Network Dimensioning Flow

OWP13 WCDMA HSPA and HSPA+ Planning

- WCDMA HSPA and HSPA+ Dimensioning
 - HSDPA Dimensioning
 - HSDPA Link Budget
 - HSDPA Capacity Dimensioning
 - HSDPA CE Dimensioning
 - HSUPA Dimensioning
 - HSUPA Link Budget
 - HSUPA Capacity Dimensioning
 - HSUPA CE Dimensioning
 - HSPA+ Dimensioning
 - HSPA+ Dimensioning Overview
 - Impact on Dimensioning - DL 64QAM
 - Impact on Dimensioning - MIMO
 - Impact on Dimensioning - CPC
 - Impact on Dimensioning - DC-HSDPA
 - Impact on Dimensioning - MIMO + DL 64QAM
 - Impact on Dimensioning - UL 16QAM
 - Impact on Dimensioning - DC-MIMO

- Impact on Dimensioning - DC-HSUPA

Duration

2 working days

Class Size

Min 6, Max 12

1.6.2 WCDMA Multi-Band and Multi-Carrier Solution Training

Training Path

WCDMA Multi-Band and Multi-Carrier Solution		
OWP20	Lecture	1d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN11/12/13/14 Radio Network Features and Algorithms Training

Objectives

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

- Describe the policies of multi-band and multi-carrier
- Describe the application scenarios of the multi-band and multi-carrier solution
- Describe the main solutions in various scenarios

Training Content

OWP20 WCDMA Multi-Band and Multi-Carrier Solution

- WCDMA Multi-Band and Multi-Carrier Solution
 - Requirements of expansion
 - Network policies
 - Network application scenario and solution
 - Carriers in the Same Band
 - 3 or 4 Carriers in the Same Band
 - 2,3 or 4 Carriers in the Different Band
 - Strategy evaluation

Duration

1 working day

Class Size

Min 6, Max 12

1.6.3 UMTS 900M Coverage Solution Training

Training Path

UMTS 900M Coverage Solution		
OWP21	Lecture	1d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN11/12/13/14 Radio Network Features and Algorithms Training

Objectives

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

- Describe the application scenarios of the UMTS 900M coverage solution
- Describe UMTS 900M Refarming Solution
- Describe UMTS 900M Deployment
- Describe UMTS 900M Application Cases

Training Content

OWP21 UMTS 900M Coverage Solution

- UMTS 900M Coverage Solution
 - U900 Background
 - U900 Principle
 - U900 solution
 - U900 Application

Duration

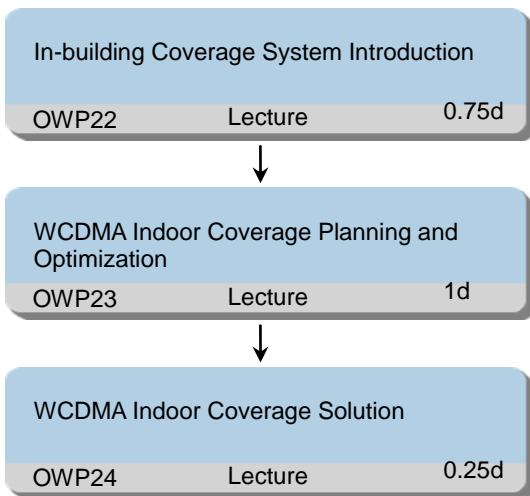
1 working day

Class Size

Min 6, Max 12

1.6.4 WCDMA Indoor Coverage Training

Training Path



Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN11/12/13/14 Radio Network Features and Algorithms Training

Objectives

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

- Describe the structure of indoor coverage
- Describe the functions of common components for indoor coverage
- Describe the functions of repeaters
- Describe the method of WCDMA indoor coverage planning
- Describe the method of WCDMA indoor coverage optimization
- Describe the method of indoor and outdoor inter-operation
- Describe the stadium coverage solution
- Describe the metro coverage solution
- Describe the airport coverage solution
- Describe the resident location coverage solution
- Describe the commercial building coverage solution
- Describe the campus coverage solution

Training Content

OWP22 In-building Coverage System Introduction

OWP23 WCDMA Indoor Coverage Planning and Optimization

- Indoor Coverage Survey and Design
 - Indoor Coverage Survey and Design Process
 - Indoor Coverage Survey
 - Indoor Coverage Design Basis
 - Indoor Coverage System Design
- UMTS In-building Coverage Optimization
 - Indoor Coverage Network Optimization Conception
 - Solution Evaluation
 - RF Optimization
 - Service Performance Optimization
- UMTS IBS Indoor and Outdoor Inter-Optimization Solution
 - Overview
 - KPI Evaluation of the Indoor Distribution System
 - Indoor and Outdoor RF Inter-Optimization
 - Service Performance Optimization

OWP24 WCDMA Indoor Coverage Solution

- Campus Coverage Solution
 - Campus Scenarios Analyze
 - Huawei Campus Coverage Solution
 - Successful Cases

Duration

2 working days

Class Size

Min 6, Max 12

1.6.5 WCDMA RF Optimization Training

Training Path

WCDMA Radio Network Tuning		
OWO00	Lecture, Discussion	2d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training

Objectives

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

- Describe WCDMA Radio Network Optimization Flow
- Describe the steps of single site verification
- Describe how to do single site verification
- Describe how to solve the ordinary problems in single site verification
- Describe how to solve the neighbor list related problems in RF optimization

Training Content

OWO00 WCDMA Radio Network Tuning

- WCDMA UTRAN Optimization Flow
 - Introduction of Optimization Flow
 - The preparation for the Optimization Project
 - Single Site Verification
 - RF Optimization
 - Parameters Optimization
 - Optimization Report
- WCDMA RF Optimization
 - RF Optimization Workflow
 - Typical Problems Analysis in RF optimization
 - RF case related to neighbor cell list
 - RF case related to bad coverage
 - RF case related to interference

Duration

2 working days

Class Size

Min 6, Max 12

1.6.6 WCDMA RAN12 Radio Network Features and Algorithms Training

Training Path

WCDMA RAN12 Radio Network Features and Algorithms		
OWO21	Lecture, Demo	5d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training

Objectives

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

- Describe WCDMA RAN12 Idle Mode Behaviors (including cell selection and reselection, paging, access etc) and list the main parameters
- Describe WCDMA RAN12 open loop power control algorithm and list the main parameters
- Describe WCDMA RAN12 closed loop power control algorithm and list the main parameters
- Describe WCDMA RAN12 intra-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN12 inter-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN12 inter-RAT handover algorithm and list the main parameters
- Describe WCDMA RAN12 admission control algorithms and list the main parameters
- Describe WCDMA RAN12 load control algorithms and list the main parameters

Training Content

OWO21 WCDMA RAN12 Radio Network Features and Algorithms

- WCDMA RAN12 UE Behaviors in Idle Mode
 - PLMN Selection
 - System Information Reception
 - Cell Selection and Reselection
 - Location Registration
 - Paging Procedure
 - Access Procedure
- WCDMA RAN12 Power Control Algorithm and Parameters
 - Power Control Overview
 - Open Loop Power Control
 - Open Loop Power Control Overview

-
- PRACH Open Loop Power Control
 - Downlink Dedicated Channel Open Loop Power Control
 - Uplink Dedicated Channel Open Loop Power Control
 - Closed Loop Power Control
 - Closed Loop Power Control Overview
 - Uplink Inner Loop Power Control
 - Downlink Inner Loop Power Control
 - Outer Loop Power Control
 - WCDMA RAN12 Handover Algorithm and Parameters
 - Intra-Frequency Handover
 - Intra-Frequency Handover Overview
 - Intra-Frequency Handover Measurement
 - Intra-Frequency Handover Decision and Execution
 - Signaling Procedures for Intra-Frequency Handover
 - Inter-Frequency Handover
 - Inter-Frequency Handover Overview
 - Inter-Frequency Handover Measurement
 - Inter-Frequency Handover Decision and Execution
 - Signaling Procedures for Inter-Frequency Handover
 - Inter-RAT Handover
 - Inter-RAT Handover Overview
 - 3G-to-2G Handover Measurement
 - 3G-to-2G Handover Decision and Execution
 - Signaling Procedures for Inter-RAT Handover
 - WCDMA RAN12 Load Control Algorithm and Parameters
 - Load Control Overview
 - Load Control Algorithms Overview
 - Load Measurement
 - Priorities Involved in Load Control
 - Load Control Algorithms
 - PUC (Potential User Control)
 - LDB (Intra-Frequency Load Balancing)
 - CAC (Call Admission Control)
 - IAC (Intelligent Admission Control)
 - LDR (Load Reshuffling)
 - OLC (Overload Control)

Duration

5 working days

Class Size

Min 6, Max 12

1.6.7 WCDMA RAN13 Radio Network Features and Algorithms Training

Training Path

WCDMA RAN13 Radio Network Features and Algorithms		
OWO22	Lecture, Demo	6d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training

Objectives

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

- Describe WCDMA RAN13 Idle Mode Behaviors (including cell selection and reselection, paging, access etc) and list the main parameters
- Describe WCDMA RAN13 open loop power control algorithm and list the main parameters
- Describe WCDMA RAN13 closed loop power control algorithm and list the main parameters
- Describe WCDMA RAN13 intra-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN13 inter-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN13 inter-RAT handover algorithm and list the main parameters
- Describe WCDMA RAN13 Service-Based PS Redirection from UMTS to LTE
- Describe WCDMA RAN13 admission control algorithms and list the main parameters
- Describe WCDMA RAN13 load control algorithms and list the main parameters

Training Content

OWO22 WCDMA RAN13 Radio Network Features and Algorithms

- WCDMA RAN13 UE Behaviors in Idle Mode
 - PLMN Selection
 - System Information Reception
 - Cell Selection and Reselection
 - Location Registration
 - Paging Procedure
 - Access Procedure
- WCDMA RAN13 Power Control Algorithm and Parameters
 - Power Control Overview
 - Open Loop Power Control

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- Open Loop Power Control Overview
 - PRACH Open Loop Power Control
 - Downlink Dedicated Channel Open Loop Power Control
 - Uplink Dedicated Channel Open Loop Power Control
 - Closed Loop Power Control
 - Closed Loop Power Control Overview
 - Uplink Inner Loop Power Control
 - Downlink Inner Loop Power Control
 - Outer Loop Power Control
 - WCDMA RAN13 Handover Algorithm and Parameters
 - Intra-Frequency Handover
 - Intra-Frequency Handover Overview
 - Intra-Frequency Handover Measurement
 - Intra-Frequency Handover Decision and Execution
 - Signaling Procedures for Intra-Frequency Handover
 - Inter-Frequency Handover
 - Inter-Frequency Handover Overview
 - Inter-Frequency Handover Measurement
 - Inter-Frequency Handover Decision and Execution
 - Signaling Procedures for Inter-Frequency Handover
 - Inter-RAT Handover
 - Inter-RAT Handover Overview
 - 3G-to-2G Handover Measurement
 - 3G-to-2G Handover Decision and Execution
 - Signaling Procedures for Inter-RAT Handover
 - Service-Based PS Service Redirection from UMTS to LTE
 - Service Redirection to LTE Overview
 - Service Redirection to LTE Measurement
 - Service Redirection to LTE Decision and Execution
 - Signaling Procedures for Service Redirection to LTE
 - WCDMA RAN13 Admission Control Algorithm and Parameters
 - Load Control Overview
 - Load Control Algorithms Overview
 - Load Measurement
 - Priorities Involved in Load Control
 - CAC (Call Admission Control)
 - CAC Overview
 - CAC Based on Code Resource
 - CAC Based on Power Resource
 - CAC Based on NodeB Credit Resource
 - CAC Based on Iub Resource
 - CAC Based on the Number of HSPA Users

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- WCDMA RAN13 Load Congestion Control Algorithm and Parameters
 - LCC Overview
 - LDR(Load Reshuffling) Algorithm and Parameters
 - Basic Congestion Triggering
 - LDR Procedure
 - LDR Actions
 - OLC(Overload Control) Algorithm and Parameters
 - Overload Triggering
 - OLC Procedure
 - OLC Actions
 - WCDMA RAN13 Direct Retry Decision Algorithm and Parameters
 - Overview of WCDMA RAN13 DRD
 - RRC DRD
 - RAB Non-Periodic DRD
 - Non-Periodic DRD Overview
 - Blind-handover-based Non-Periodic DRD
 - Measurement-based Non-Periodic DRD
 - RAB Periodic DRD
 - Overview
 - Switches for Periodic DRD
 - Triggering Periodic DRD
 - Periodic DRD Procedure

Duration

6 working days

Class Size

Min 6, Max 12

1.6.8 WCDMA RAN14 Radio Network Features and Algorithms Training

Training Path

WCDMA RAN14 Radio Network Features and Algorithms		
OWO23	Lecture, Demo	6d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training

Objectives

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

- Describe WCDMA RAN14 Idle Mode Behaviors (including cell selection and reselection, paging, access etc) and list the main parameters
- Describe WCDMA RAN14 open loop power control algorithm and list the main parameters
- Describe WCDMA RAN14 closed loop power control algorithm and list the main parameters
- Describe WCDMA RAN14 intra-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN14 inter-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN14 inter-RAT handover algorithm and list the main parameters
- Describe WCDMA RAN14 Service-based UMTS-to-LTE PS Redirection and Handover
- Describe WCDMA RAN14 admission control algorithms and list the main parameters
- Describe WCDMA RAN14 load control algorithms and list the main parameters

Training Content

OWO23 WCDMA RAN14 Radio Network Features and Algorithms

- WCDMA RAN14 UE Behaviors in Idle Mode
 - PLMN Selection
 - System Information Reception
 - Cell Selection and Reselection
 - Location Registration
 - Paging Procedure
 - Access Procedure
- WCDMA RAN14 Power Control Algorithm and Parameters
 - Power Control Overview
 - Open Loop Power Control

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- Open Loop Power Control Overview
 - PRACH Open Loop Power Control
 - Downlink Dedicated Channel Open Loop Power Control
 - Uplink Dedicated Channel Open Loop Power Control
 - Closed Loop Power Control
 - Closed Loop Power Control Overview
 - Uplink Inner Loop Power Control
 - Downlink Inner Loop Power Control
 - Outer Loop Power Control
 - WCDMA RAN14 Handover Algorithm and Parameters
 - Intra-Frequency Handover
 - Intra-Frequency Handover Overview
 - Intra-Frequency Handover Procedure
 - Intra-Frequency Handover Measurement
 - Intra-Frequency Handover Decision and Execution
 - Signaling Procedures for Intra-Frequency Handover
 - Inter-Frequency Handover
 - Inter-Frequency Handover Overview
 - Inter-Frequency Handover Measurement
 - Inter-Frequency Handover Decision and Execution
 - Signaling Procedures for Inter-Frequency Handover
 - Inter-RAT Handover
 - Inter-RAT Handover Overview
 - 3G-to-2G Handover Measurement
 - 3G-to-2G Handover Decision and Execution
 - Signaling Procedures for Inter-RAT Handover
 - Service-based UMTS-to-LTE PS Redirection and Handover
 - Overview
 - LTE Measurement
 - Decision and Execution of Redirection and Handover
 - Signaling Procedures for Redirection and Handover
 - WCDMA RAN14 Admission Control Algorithm and Parameters
 - Load Control Overview
 - Load Control Algorithms Overview
 - Load Measurement
 - Priorities Involved in Load Control
 - CAC (Call Admission Control)
 - CAC Overview
 - CAC Based on Code Resource
 - CAC Based on Power Resource
 - CAC Based on NodeB Credit Resource
 - CAC Based on Iub Resource

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- CAC Based on the Number of HSPA Users
 - WCDMA RAN14 Load Congestion Control Algorithm and Parameters
 - LCC Overview
 - LDR(Load Reshuffling) Algorithm and Parameters
 - Basic Congestion Triggering
 - LDR Procedure
 - LDR Actions
 - OLC(Overload Control) Algorithm and Parameters
 - Overload Triggering
 - OLC Procedure
 - OLC Actions
 - WCDMA RAN14 Direct Retry Decision Algorithm and Parameters
 - Overview of DRD
 - RRC DRD
 - RAB Non-Periodic DRD
 - Non-Periodic DRD Overview
 - Blind-handover-based Non-Periodic DRD
 - Measurement-based Non-Periodic DRD
 - RAB Periodic DRD
 - RAB Periodic DRD Overview
 - Switches for Periodic DRD
 - Triggering Periodic DRD
 - Periodic DRD Procedure

Duration

6 working days

Class Size

Min 6, Max 12

1.6.9 WCDMA RAN15 Radio Network Features and Algorithms Training

Training Path

WCDMA RAN15 Radio Network Features and Algorithms		
OWO24	Lecture, Demo	6d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training

Objectives

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

- Describe WCDMA RAN15 Idle Mode Behaviors (including cell selection and reselection, paging, access etc) and list the main parameters
- Describe WCDMA RAN15 open loop power control algorithm and list the main parameters
- Describe WCDMA RAN15 closed loop power control algorithm and list the main parameters
- Describe WCDMA RAN15 intra-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN15 inter-frequency handover algorithm and list the main parameters
- Describe WCDMA RAN15 inter-RAT handover algorithm and list the main parameters
- Describe WCDMA RAN15 UMTS-to-LTE PS Redirection and Handover algorithm and list the main parameters
- Describe WCDMA RAN15 admission control algorithms and list the main parameters
- Describe WCDMA RAN15 load control algorithms and list the main parameters

Training Content

OWO24 WCDMA RAN15 Radio Network Features and Algorithms

- WCDMA RAN15 UE Behaviors in Idle Mode
 - PLMN Selection
 - System Information Reception
 - Cell Selection and Reselection
 - Location Registration
 - Paging Procedure
 - Access Procedure
- WCDMA RAN15 Power Control Algorithm and Parameters
 - Power Control Overview

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- Open Loop Power Control
 - Open Loop Power Control Overview
 - PRACH Open Loop Power Control
 - Downlink Dedicated Channel Open Loop Power Control
 - Uplink Dedicated Channel Open Loop Power Control
 - Closed Loop Power Control
 - Closed Loop Power Control Overview
 - Uplink Inner Loop Power Control
 - Downlink Inner Loop Power Control
 - Outer Loop Power Control
 - WCDMA RAN15 Handover Algorithm and Parameters
 - Intra-Frequency Handover
 - Intra-Frequency Handover Overview
 - Intra-Frequency Handover Procedure
 - Intra-Frequency Handover Measurement
 - Intra-Frequency Handover Decision and Execution
 - Signaling Procedures for Intra-Frequency Handover
 - Inter-Frequency Handover
 - Inter-Frequency Handover Overview
 - Inter-Frequency Handover Measurement
 - Inter-Frequency Handover Decision and Execution
 - Signaling Procedures for Inter-Frequency Handover
 - Inter-RAT Handover
 - Inter-RAT Handover Overview
 - 3G-to-2G Handover Measurement
 - 3G-to-2G Handover Decision and Execution
 - Signaling Procedures for Inter-RAT Handover
 - UMTS-to-LTE PS Redirection and Handover
 - UMTS-to-LTE PS Redirection and Handover Overview
 - Service-based UMTS-to-LTE PS Redirection and Handover
 - Coverage-based UMTS-to-LTE PS Redirection and Handover
 - Load-based UMTS-to-LTE PS Redirection and Handover
 - WCDMA RAN15 Admission Control Algorithm and Parameters
 - Load Control Overview
 - Load Control Algorithms Overview
 - Load Measurement
 - Priorities Involved in Load Control
 - CAC (Call Admission Control)
 - CAC Overview
 - CAC Based on Code Resource
 - CAC Based on Power Resource
 - CAC Based on NodeB Credit Resource

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- CAC Based on Iub Resource
 - CAC Based on the Number of HSPA Users
 - WCDMA RAN15 Load Congestion Control Algorithm and Parameters
 - LCC Overview
 - LDR(Load Reshuffling) Algorithm and Parameters
 - Basic Congestion Triggering
 - LDR Procedure
 - LDR Actions
 - OLC(Overload Control) Algorithm and Parameters
 - Overload Triggering
 - OLC Procedure
 - OLC Actions
 - WCDMA RAN15 Direct Retry Decision Algorithm and Parameters
 - Overview of DRD
 - RRC DRD
 - RAB Non-Periodic DRD
 - Non-Periodic DRD Overview
 - Blind-handover-based Non-Periodic DRD
 - Measurement-based Non-Periodic DRD
 - RAB Periodic DRD
 - RAB Periodic DRD Overview
 - Switches for Periodic DRD
 - Triggering Periodic DRD
 - Periodic DRD Procedure

Duration

6 working days

Class Size

Min 6, Max 12

1.6.10 WCDMA RAN12 Performance Management Training

Training Path

WCDMA RAN12 Radio Network Performance Management		
OWO31	Lecture, Lab, Demo	2d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN12 Radio Network Features and Algorithms Training

Objectives

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

- Master the concept related to Performance Management
- Master how to collect counters and KPIs with M2000
- Describe WCDMA RAN12 access KPI and relative counters
- Describe WCDMA RAN12 call drop KPI and relative counters
- Describe WCDMA RAN12 mobility KPI and relative counters
- Describe WCDMA RAN12 traffic KPI and relative counters
- Describe WCDMA RAN12 cell algorithm KPI and relative counters, such as load control, DCCC

Training Content

OWO31 WCDMA RAN12 Radio Network Performance Management

- WCDMA Performance Management based on M2000
 - Basic Setting of Performance Measurement
 - Querying Measure Result
 - Managing Performance Thresholds
- WCDMA RAN12 Access KPI and Relative Counters
 - Overview of Access Procedure
 - RRC Establishment KPI and Relative Counters
 - RAB Establishment KPI and Relative Counters
 - Paging KPI and Relative Counters
- WCDMA RAN12 Call Drop KPI and Relative Counters
 - Definition Of a Call Drop
 - Typical Call Drop KPI and Related Counters

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- Counters Indicating the Call Drop Reason
 - WCDMA RAN12 Mobility KPI and Relative Counters
 - Handover KPI and Counters for All Services
 - Soft Handover Factor
 - Soft Handover Success Rate
 - Inter-Freq Hard Handover Success Rate
 - CS Inter-RAT Handover Success Rate
 - PS Inter-RAT Handover Success Rate
 - Handover KPI and Counters for HSDPA Service
 - HS-DSCH Service Cell Change Success Rate (with A-DCH SHO)
 - HS-DSCH Service Cell Change Success Rate (with Intra A-DCH HHO)
 - HS-DSCH Service Cell Change Success Rate (with Inter HHO)
 - HS-DSCH to DCH Handover Success Rate
 - DCH to HS-DSCH Handover Success Rate
 - Handover KPI and Counters for HSUPA Service
 - E-DCH Soft Handover Success Rate
 - E-DCH Service Cell Change Success Rate with SHO
 - E-DCH Service Cell Change Success Rate with Inter-HHO
 - WCDMA RAN12 Traffic KPI and Relative Counters
 - Traffic KPI and Related Counters
 - User Number KPI and Related Counters of each service
 - Traffic Volume KPI and Related Counters of each service
 - Cell load KPI and Related Counters
 - Service Integrity KPI and Related Counters
 - Average UL Throughput for PS R99 Service
 - Average DL Throughput for PS R99 Service
 - Average UL BLER for CS Service
 - Average UL BLER for PS Service
 - HSDPA Throughput
 - HSUPA Throughput
 - PS UL Throughput of RNC
 - PS DL Throughput of RNC
 - WCDMA RAN12 Cell Algorithm KPI and Relative Counters
 - Counters Related to Load Control
 - Counters Related to Load Reshuffling
 - Counters Related to Over Load Control
 - Counters Related to DCCC
 - Counters Related to Rate Reallocation
 - Counters Related to UE State Transition

Duration

2 working days

Class Size

Min 6, Max 12

1.6.11 WCDMA RAN13 Performance Management Training

Training Path

WCDMA RAN13 Radio Network Performance Management		
OWO32	Lecture, Lab, Demo	2d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN13 Radio Network Features and Algorithms Training

Objectives

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

- Master the concept related to Performance Management
- Master how to collect counters and KPIs with M2000
- Describe WCDMA RAN13 access KPI and relative counters
- Describe WCDMA RAN13 call drop KPI and relative counters
- Describe WCDMA RAN13 mobility KPI and relative counters
- Describe WCDMA RAN13 traffic KPI and relative counters
- Describe WCDMA RAN12 cell algorithm KPI and relative counters, such as load control, DCCC

Training Content

OWO32 WCDMA RAN13 Radio Network Performance Management

- WCDMA Performance Management based on M2000
 - Basic Setting of Performance Measurement
 - Querying Measure Result
 - Managing Performance Thresholds
- WCDMA RAN13 Access KPI and Relative Counters
 - Overview of Access Procedure
 - RRC Establishment KPI and Relative Counters
 - RAB Establishment KPI and Relative Counters
 - Paging KPI and Relative Counters
- WCDMA RAN13 Call Drop KPI and Relative Counters
 - Definition Of a Call Drop
 - Typical Call Drop KPI and Related Counters

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- Counters Indicating the Call Drop Reason
 - WCDMA RAN13 Mobility KPI and Relative Counters
 - Handover KPI and Counters for All Services
 - Soft Handover Factor
 - Soft Handover Success Rate
 - Inter-Freq Hard Handover Success Rate
 - CS Inter-RAT Handover Success Rate
 - PS Inter-RAT Handover Success Rate
 - Handover KPI and Counters for HSDPA Service
 - HS-DSCH Service Cell Change Success Rate (with A-DCH SHO)
 - HS-DSCH Service Cell Change Success Rate (with Intra A-DCH HHO)
 - HS-DSCH Service Cell Change Success Rate (with Inter HHO)
 - HS-DSCH to DCH Handover Success Rate
 - DCH to HS-DSCH Handover Success Rate
 - Handover KPI and Counters for HSUPA Service
 - E-DCH Soft Handover Success Rate
 - E-DCH Service Cell Change Success Rate with SHO
 - E-DCH Service Cell Change Success Rate with Inter-HHO
 - WCDMA RAN13 Traffic KPI and Relative Counters
 - RNC Traffic KPI and Related Counters
 - RNC Traffic KPI for AMR 12.2kbps Services
 - RNC Traffic KPI for Video Phone 64kbps Services
 - RNC Traffic KPI for PS R99 DL Throughput
 - RNC Traffic KPI for HSDPA DL Throughput
 - RNC Traffic KPI for HSUPA UL Throughput
 - RNC Traffic KPI for PS MBMS DL Throughput
 - Cell Traffic KPI and Related Counters
 - Cell Traffic KPI for Common Channels
 - Cell Traffic KPI for All Services
 - Cell Traffic KPI for HSDPA DL Throughput
 - Cell Traffic KPI for HSUPA UL Throughput
 - Cell Load KPI and Related Counters
 - Cell Load KPI for Power
 - Cell Load KPI for Channel Element
 - Cell Load KPI for DL OVFS Code
 - WCDMA RAN13 Cell Algorithm KPI and Relative Counters
 - Counters Related to Load Control
 - Counters Related to Load Reshuffling
 - Counters Related to Over Load Control
 - Counters Related to DCCC
 - Counters Related to Rate Reallocation
 - Counters Related to UE State Transition

Duration

2 working days

Class Size

Min 6, Max 12

1.6.12 WCDMA RAN14 Performance Management Training

Training Path

WCDMA RAN14 Radio Network Performance Management		
OWO33	Lecture, Lab, Demo	2d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN14 Radio Network Features and Algorithms Training

Objectives

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

- Master the concept related to Performance Management
- Master how to collect counters and KPIs with M2000
- Describe WCDMA RAN14 access KPI and relative counters
- Describe WCDMA RAN14 call drop KPI and relative counters
- Describe WCDMA RAN14 mobility KPI and relative counters
- Describe WCDMA RAN14 traffic KPI and relative counters
- Describe WCDMA RAN14 cell algorithm KPI and relative counters, such as load control, DCCC

Training Content

OWO33 WCDMA RAN14 Radio Network Performance Management

- WCDMA Performance Management based on M2000
 - Basic Setting of Performance Measurement
 - Querying Measure Result
 - Managing Performance Thresholds
- WCDMA RAN14 Access KPI and Relative Counters
 - Overview of Access Procedure
 - RRC Establishment KPI and Relative Counters
 - Detailed Procedure of RRC Establishment
 - Typical RRC Establishment KPI and Relative Counters
 - Counters Indicating RRC Establishment Failures
 - RAB Establishment KPI and Relative Counters
 - Detailed Procedure of RAB Establishment

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- Typical RAB Establishment KPI and Relative Counters
 - Counters Indicating RAB Establishment Failures
 - Paging KPI and Relative Counters
 - Overview of Paging Procedure
 - Paging KPI and Relative Counters
 - WCDMA RAN14 Call Drop KPI and Relative Counters
 - Definition Of a Call Drop
 - Typical Call Drop KPI and Related Counters
 - Counters Indicating the Call Drop Reason
 - WCDMA RAN14 Mobility KPI and Relative Counters
 - Handover KPI and Counters for All Services
 - Soft Handover Factor
 - Soft Handover Success Rate
 - Softer Handover Success Ratio
 - Inter-Freq Hard Handover Success Rate
 - CS Inter-RAT Handover Success Rate
 - PS Inter-RAT Handover Success Rate
 - Handover KPI and Counters for HSDPA Service
 - H2H Intra-frequency Hard Handover Success Ratio (Cell)
 - H2H Inter-frequency Hard Handover Success Ratio (Cell)
 - H2D Inter-frequency Hard Handover Success Ratio (Cell)
 - H2D Channel Handover Success Ratio
 - D2H Channel Handover Success Ratio
 - Handover KPI and Counters for HSUPA Service
 - E-DCH Soft Handover Success Rate
 - E-DCH Service Cell Change Success Rate with SHO
 - E-DCH Service Cell Change Success Rate with Inter-HHO
 - WCDMA RAN14 Traffic KPI and Relative Counters
 - RNC Traffic KPI and Related Counters
 - RNC Traffic KPI for AMR 12.2kbps Services
 - RNC Traffic KPI for Video Phone 64kbps Services
 - RNC Traffic KPI for PS R99 DL Throughput
 - RNC Traffic KPI for HSDPA DL Throughput
 - RNC Traffic KPI for HSUPA UL Throughput
 - RNC Traffic KPI for PS MBMS DL Throughput
 - Cell Traffic KPI and Related Counters
 - Cell Traffic KPI for Common Channels
 - Cell Traffic KPI for All Services
 - Cell Traffic KPI for HSDPA DL Throughput
 - Cell Traffic KPI for HSUPA UL Throughput
 - Cell Load KPI and Related Counters
 - Cell Load KPI for Power

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- Cell Load KPI for Channel Element
 - Cell Load KPI for DL OVSF Code
 - WCDMA RAN14 Cell Algorithm KPI and Relative Counters
 - Counters Related to Load Control
 - Counters Related to Load Reshuffling
 - Counters Related to Over Load Control
 - Counters Related to DCCC
 - Counters Related to Rate Reallocation
 - Counters Related to UE State Transition

Duration

2 working days

Class Size

Min 6, Max 12

1.6.13 WCDMA RAN15 Performance Management Training

Training Path

WCDMA RAN15 Radio Network Performance Management		
OWO34	Lecture, Lab, Demo	2d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN15 Radio Network Features and Algorithms Training

Objectives

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

- Master the concept related to Performance Management
- Master how to collect counters and KPIs with M2000
- Describe WCDMA RAN15 access KPI and relative counters
- Describe WCDMA RAN15 call drop KPI and relative counters
- Describe WCDMA RAN15 mobility KPI and relative counters
- Describe WCDMA RAN15 traffic KPI and relative counters
- Describe WCDMA RAN15 cell algorithm KPI and relative counters, such as load control, DCCC

Training Content

OWO34 WCDMA RAN15 Radio Network Performance Management

- WCDMA Performance Management based on M2000
 - Basic Setting of Performance Measurement
 - Querying Measure Result
 - Managing Performance Thresholds
- WCDMA RAN15 Access KPI and Relative Counters
 - Overview of Access Procedure
 - RRC Establishment KPI and Relative Counters
 - Detailed Procedure of RRC Establishment
 - Typical RRC Establishment KPI and Relative Counters
 - Counters Indicating RRC Establishment Failures
 - RAB Establishment KPI and Relative Counters
 - Detailed Procedure of RAB Establishment

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- Typical RAB Establishment KPI and Relative Counters
 - Counters Indicating RAB Establishment Failures
 - Paging KPI and Relative Counters
 - Overview of Paging Procedure
 - Paging KPI and Relative Counters
 - WCDMA RAN15 Call Drop KPI and Relative Counters
 - Definition Of a Call Drop
 - Typical Call Drop KPI and Related Counters
 - Counters Indicating the Call Drop Reason
 - WCDMA RAN15 Mobility KPI and Relative Counters
 - Handover KPI and Counters for All Services
 - Soft Handover Factor
 - Soft Handover Success Rate
 - Softer Handover Success Ratio
 - Intra-Freq Hard Handover Success Rate
 - Inter-Freq Hard Handover Success Rate
 - CS Inter-RAT Handover Success Rate
 - PS Inter-RAT Handover Success Rate
 - Handover KPI and Counters for HSDPA Service
 - H2H Intra-frequency Hard Handover Success Ratio (Cell)
 - H2H Inter-frequency Hard Handover Success Ratio (Cell)
 - H2D Inter-frequency Hard Handover Success Ratio (Cell)
 - H2D Channel Handover Success Ratio
 - D2H Channel Handover Success Ratio
 - Handover KPI and Counters for HSUPA Service
 - E-DCH Soft Handover Success Rate
 - E-DCH Service Cell Change Success Rate with SHO
 - E-DCH Service Cell Change Success Rate with Inter-HHO
 - WCDMA RAN15 Traffic KPI and Relative Counters
 - RNC Traffic KPI and Related Counters
 - RNC Traffic KPI for AMR 12.2kbps Services
 - RNC Traffic KPI for Video Phone 64kbps Services
 - RNC Traffic KPI for PS R99 DL Throughput
 - RNC Traffic KPI for HSDPA DL Throughput
 - RNC Traffic KPI for HSUPA UL Throughput
 - RNC Traffic KPI for PS MBMS DL Throughput
 - Cell Traffic KPI and Related Counters
 - Cell Traffic KPI for Common Channels
 - Cell Traffic KPI for All Services
 - Cell Traffic KPI for HSDPA DL Throughput
 - Cell Traffic KPI for HSUPA UL Throughput
 - Cell Load KPI and Related Counters

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- Cell Load KPI for Power
 - Cell Load KPI for Channel Element
 - Cell Load KPI for DL OVSF Code
 - WCDMA RAN15 Cell Algorithm KPI and Relative Counters
 - Counters Related to Load Control
 - Counters Related to Load Reshuffling
 - Counters Related to Over Load Control
 - Counters Related to DCCC
 - Counters Related to Rate Reallocation
 - Counters Related to UE State Transition

Duration

2 working days

Class Size

Min 6, Max 12

1.6.14 WCDMA Radio Network Optimization

Training Path

WCDMA Radio Network Optimization		
OWO01	Lecture, Lab, Discussion	4d

Target Audience

Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN12/13/14/15 Radio Network Features and Algorithms Training
- WCDMA RAN12/13/14/15 Performance Management Training

Objectives

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

- List the main items of RNC trace and monitoring
- Execute signaling trace and real-time monitoring and collect data
- Describe the signaling of type procedures
- Describe how to analyze coverage problem and solve it
- Describe how to improve coverage capability
- Locate the resource of interference
- Describe how to solve interference problem
- Evaluate the network access performance
- Locate and solve common access problems
- Evaluate the network paging performance
- Locate and solve paging problem
- Evaluate the network handover performance
- Locate and solve handover problem
- Evaluate the network retention performance
- Locate and solve call drop problem

Training Content

OWO01 WCDMA Radio Network Optimization

- WCDMA Coverage Problems Analysis
 - Classification Of Coverage Problem
 - Coverage Optimization Flow

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- Case Analysis
 - WCDMA Interference Problem Analysis
 - Relative Concepts regarding Interference
 - UL Interference Analysis
 - DL Interference Analysis
 - Case Study
 - WCDMA Access Problem Analysis
 - Access Failure Concept
 - Flow and Methods for Analyzing Access
 - Site Alarm Check
 - Related Parameters Check
 - Related Counters Check
 - Signaling analysis
 - KPI Trend Analysis
 - Coverage Analysis
 - Interference Analysis
 - Typical Access Case Study
 - WCDMA Paging Problems Analysis
 - Paging Overview
 - Paging Problem Analysis Process
 - Problem Analysis Flow
 - Network Information Collection
 - Optimization Target Confirmation
 - Paging Problem Locating
 - Typical Paging Problem Analysis
 - Optimization Verification
 - WCDMA Handover Problems Analysis
 - Basic Concepts of Handover Problem Optimization
 - Soft Handover Problem Analysis
 - SHO DT Optimization Flow
 - SHO Performance Statistics Optimization Flow
 - SHO Problem Analysis
 - SHO Problem Cases
 - Hard Handover Problem Analysis
 - HHO DT Optimization Flow
 - HHO Performance Statistics Optimization Flow
 - HHO Problem Analysis
 - HHO Problem Cases
 - Inter-RAN Handover Problem Analysis
 - Inter-RAT Handover DT Optimization Flow
 - Inter-RAT Handover Performance Statistics Optimization Flow
 - Inter-RAT Handover Problem Analysis

-
- Inter-RAT Handover Problem Cases
 - WCDMA Call Drop Problems Analysis
 - Definition of Call Drop and Traffic Statistics Indexes
 - DT/CQT Optimization Flow
 - Optimization Flow
 - Call Drop Cause Analysis
 - Optimization Flow for Tracing Data
 - Case Analysis
 - HUAWEI UTRAN Trace and Monitoring
 - RNC Trace and Monitoring Overview
 - Signaling Trace
 - Real-time Monitoring
 - Case Study
 - Signaling Analysis of Typical UTRAN Procedures
 - Category of UTRAN interfaces and signaling
 - Signaling Analysis of Typical UTRAN Procedures
 - System Information Analysis
 - Paging Signaling Analysis
 - RRC Setup Signaling Analysis
 - NAS Signaling Analysis
 - RAB Assignment Signaling Analysis
 - Intra-Frequency Handover Signaling Analysis
 - Inter-Frequency/Inter-RAT Handover Signaling Analysis

Duration

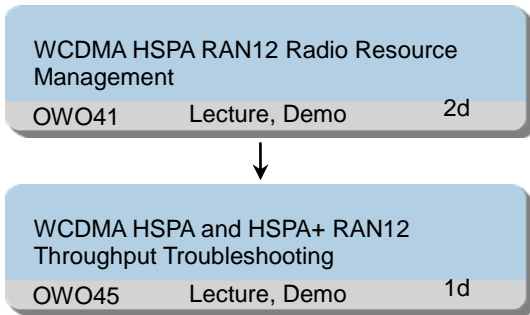
4 working days

Class Size

Min 6, Max 12

1.6.15 WCDMA RAN12 HSPA/HSPA+ Radio Network Optimization Training

Training Path



Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN12 Radio Network Features and Algorithms Training

Objectives

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

- Describe HSDPA RAN12 Radio Resource Algorithm (RRM) such as channel type mapping, code resource allocation, power allocation, HSDPA mobility management, scheduling, etc.
- Describe HSUPA RAN12 Radio Resource Algorithm (RRM) such as channel type mapping, DCCC, power allocation, HSUPA mobility management, scheduling, etc.
- Describe the troubleshooting process for HSDPA throughput problems
- Describe the troubleshooting process for HSUPA throughput problems
- Describe the troubleshooting process for HSPA+ throughput problems

Training Content

OWO41 WCDMA HSPA RAN12 Radio Resource Management

- WCDMA HSDPA RAN12 RRM and Parameters
 - HSDPA Bearer Mapping
 - HSDPA Code Resource Management
 - HSDPA Power Resource Management
 - HSDPA Mobility Management
 - HSDPA Channel Switching
 - HSDPA Mac-hs Scheduling Algorithm

-
- HSDPA TFRC Selection
 - WCDMA HSUPA RAN12 RRM and Parameters
 - HSUPA Bearer Mapping
 - Channel Switching
 - HSUPA Fast Scheduling
 - HSUPA Dynamic CE Management
 - Uplink Macro Diversity Intelligent Receiving
 - HSUPA Adaptive Retransmission
 - HSUPA QoS Management
 - HSUPA Mobility Management
 - OWO45 WCDMA HSPA and HSPA+ RAN12 Throughput Troubleshooting
 - WCDMA HSPA+ RAN12 Throughput Troubleshooting
 - HSDPA Throughput Problems
 - HSDPA Throughput Overview
 - Low or Fluctuating HSDPA Throughput Troubleshooting
 - No HSDPA Throughput Troubleshooting
 - HSUPA Throughput Problems
 - HSUPA Throughput Overview
 - Low or Fluctuating HSUPA Throughput Troubleshooting
 - Failure to Establish the HSUPA Service
 - Failure to Establish an HSUPA 5.76 Mbit/s Service
 - HSPA+ Throughput Problems
 - HSPA+ 64QAM Problems
 - HSPA+ MIMO Problems
 - HSPA+ DC-HSDPA Problems

Duration

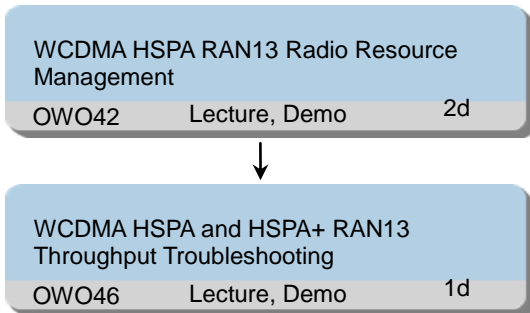
3 working days

Class Size

Min 6, Max 12

1.6.16 WCDMA RAN13 HSPA/HSPA+ Radio Network Optimization Training

Training Path



Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN13 Radio Network Features and Algorithms Training

Objectives

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

- Describe HSDPA RAN13 Radio Resource Algorithm (RRM) such as channel type mapping, code resource allocation, power allocation, HSDPA mobility management, scheduling, etc.
- Describe HSUPA RAN13 Radio Resource Algorithm (RRM) such as channel type mapping, DCCC, power allocation, HSUPA mobility management, scheduling, etc.
- Describe the troubleshooting process for HSDPA throughput problems
- Describe the troubleshooting process for HSUPA throughput problems
- Describe the troubleshooting process for HSPA+ throughput problems

Training Content

OWO42 WCDMA HSPA RAN13 Radio Resource Management

- WCDMA HSDPA RAN13 RRM and Parameters
 - HSDPA Bearer Mapping
 - HSDPA Code Resource Management
 - HSDPA Power Resource Management
 - HSDPA Mobility Management
 - HSDPA Channel Switching
 - HSDPA Mac-hs Scheduling Algorithm

-
- HSDPA TFRC Selection
 - WCDMA HSUPA RAN13 RRM and Parameters
 - HSUPA Bearer Mapping
 - Channel Switching
 - HSUPA Fast Scheduling
 - HSUPA Dynamic CE Management
 - Uplink Macro Diversity Intelligent Receiving
 - HSUPA Adaptive Retransmission
 - HSUPA QoS Management
 - HSUPA Mobility Management
 - OWO46 WCDMA HSPA and HSPA+ RAN13 Throughput Troubleshooting
 - WCDMA HSPA+ RAN13 Throughput Troubleshooting
 - HSDPA Throughput Problems
 - HSDPA Throughput Overview
 - Low or Fluctuating HSDPA Throughput Troubleshooting
 - No HSDPA Throughput Troubleshooting
 - HSUPA Throughput Problems
 - HSUPA Throughput Overview
 - Low or Fluctuating HSUPA Throughput Troubleshooting
 - Failure to Establish the HSUPA Service
 - Failure to Establish an HSUPA 5.76 Mbit/s Service
 - HSPA+ Throughput Problems
 - HSPA+ 64QAM Problems
 - HSPA+ MIMO Problems
 - HSPA+ DC-HSDPA Problems

Duration

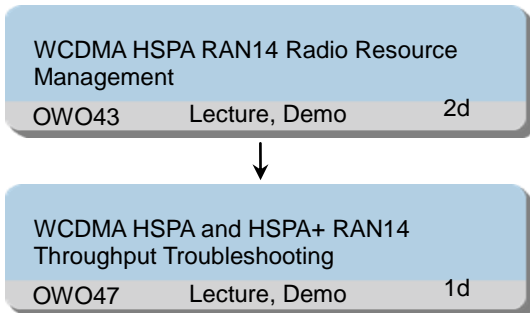
3 working days

Class Size

Min 6, Max 12

1.6.17 WCDMA RAN14 HSPA/HSPA+ Radio Network Optimization Training

Training Path



Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN14 Radio Network Features and Algorithms Training

Objectives

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

- Describe HSDPA RAN14 Radio Resource Algorithm (RRM) such as channel type mapping, code resource allocation, power allocation, HSDPA mobility management, scheduling, etc.
- Describe HSUPA RAN14 Radio Resource Algorithm (RRM) such as channel type mapping, DCCC, power allocation, HSUPA mobility management, scheduling, etc.
- Describe the troubleshooting process for HSDPA throughput problems
- Describe the troubleshooting process for HSUPA throughput problems
- Describe the troubleshooting process for HSPA+ throughput problems

Training Content

OWO43 WCDMA HSPA RAN14 Radio Resource Management

- WCDMA HSDPA RAN14 RRM and Parameters
 - HSDPA Bearer Mapping
 - HSDPA Code Resource Management
 - HSDPA Power Resource Management
 - HSDPA Mobility Management
 - HSDPA Channel Switching
 - HSDPA Mac-hs Scheduling Algorithm

-
- HSDPA TFRC Selection
 - WCDMA HSUPA RAN14 RRM and Parameters
 - HSUPA Bearer Mapping
 - Channel Switching
 - HSUPA Fast Scheduling
 - HSUPA Dynamic CE Management
 - Uplink Macro Diversity Intelligent Receiving
 - HSUPA Adaptive Retransmission
 - HSUPA QoS Management
 - HSUPA Mobility Management
 - OWO47 WCDMA HSPA and HSPA+ RAN14 Throughput Troubleshooting
 - WCDMA HSPA+ RAN14 Throughput Troubleshooting
 - HSDPA Throughput Problems
 - HSDPA Throughput Overview
 - Low or Fluctuating HSDPA Throughput Troubleshooting
 - No HSDPA Throughput Troubleshooting
 - HSUPA Throughput Problems
 - HSUPA Throughput Overview
 - Low or Fluctuating HSUPA Throughput Troubleshooting
 - Failure to Establish the HSUPA Service
 - Failure to Establish an HSUPA 5.76 Mbit/s Service
 - HSPA+ Throughput Problems
 - HSPA+ 64QAM Problems
 - HSPA+ MIMO Problems
 - HSPA+ DC-HSDPA Problems

Duration

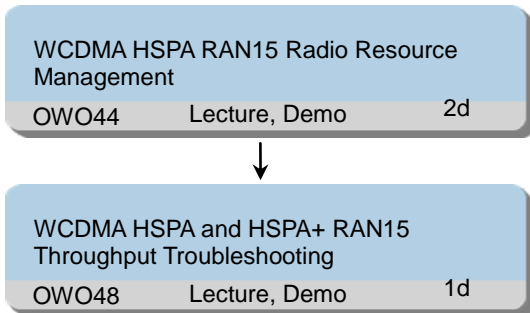
3 working days

Class Size

Min 6, Max 12

1.6.18 WCDMA RAN15 HSPA/HSPA+ Radio Network Optimization Training

Training Path



Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN15 Radio Network Features and Algorithms Training

Objectives

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

- Describe HSDPA RAN15 Radio Resource Algorithm (RRM) such as channel type mapping, code resource allocation, power allocation, HSDPA mobility management, scheduling, etc.
- Describe HSUPA RAN15 Radio Resource Algorithm (RRM) such as channel type mapping, DCCC, power allocation, HSUPA mobility management, scheduling, etc.
- Describe the troubleshooting process for HSDPA throughput problems
- Describe the troubleshooting process for HSUPA throughput problems
- Describe the troubleshooting process for HSPA+ throughput problems

Training Content

OWO44 WCDMA HSPA RAN15 Radio Resource Management

- WCDMA HSDPA RAN15 RRM and Parameters
 - HSDPA Bearer Mapping
 - HSDPA Code Resource Management
 - HSDPA Power Resource Management
 - HSDPA Mobility Management
 - HSDPA Channel Switching
 - HSDPA Mac-hs Scheduling Algorithm

-
- HSDPA TFRC Selection
 - WCDMA HSUPA RAN15 RRM and Parameters
 - HSUPA Bearer Mapping
 - Channel Switching
 - HSUPA Fast Scheduling
 - HSUPA Dynamic CE Management
 - Uplink Macro Diversity Intelligent Receiving
 - HSUPA Adaptive Retransmission
 - HSUPA QoS Management
 - HSUPA Mobility Management
 - OWO48 WCDMA HSPA and HSPA+ RAN15 Throughput Troubleshooting
 - WCDMA HSPA+ RAN15 Throughput Troubleshooting
 - HSDPA Throughput Problems
 - HSDPA Throughput Overview
 - Low or Fluctuating HSDPA Throughput Troubleshooting
 - No HSDPA Throughput Troubleshooting
 - HSUPA Throughput Problems
 - HSUPA Throughput Overview
 - Low or Fluctuating HSUPA Throughput Troubleshooting
 - Failure to Establish the HSUPA Service
 - Failure to Establish an HSUPA 5.76 Mbit/s Service
 - HSPA+ Throughput Problems
 - HSPA+ 64QAM Problems
 - HSPA+ MIMO Problems
 - HSPA+ DC-HSDPA Problems

Duration

3 working days

Class Size

Min 6, Max 12

1.6.19 WCDMA RAN12-RAN13 Delta Features Training

Training Path

WCDMA RAN12 - RAN13 Delta Features		
OWO51	Lecture, Demo	2d

Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN13 Radio Network Features and Algorithms Training

Objectives

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

- Outline the important new features realized in RAN13 version
- Describe WCDMA RAN13 DC-HSDPA+MIMO Feature
- Describe WCDMA RAN13 Traffic-Based Activation and Deactivation of Secondary Carrier in DC-HSDPA Feature
- Describe WCDMA RAN13 Enhanced Uplink CELL FACH Feature
- Describe WCDMA RAN13 E-DPCCH Boosting Feature
- Describe WCDMA RAN13 Enhanced Fast Dormancy Feature
- Describe WCDMA RAN13 P2P Downloading Rate Control during Busy Hour Feature
- Describe WCDMA RAN13 Web Page Access Acceleration Feature
- Describe WCDMA RAN13 Optimization of R99 and HSUPA Users Fairness Feature
- Describe WCDMA RAN13 Anti-Interference Scheduling for HSUPA Feature
- Describe WCDMA RAN13 Multi-Carrier Switch off Based on QoS Feature
- Describe WCDMA RAN13 HSUPA Coverage Enhancement at UE Power Limitation Feature
- Describe WCDMA RAN13 Adaptive Configuration of Data Channel Power Offset for HSUPA Feature
- Describe WCDMA RAN13 Dual-Threshold Scheduling with HSUPA Interference Cancellation Feature
- Describe WCDMA RAN13 GU 2.0MHZ Central Frequency Spacing(U3.8MHZ) Feature

Training Content

OWO51 WCDMA RAN12 - RAN13 Delta Features

-
- WCDMA RAN13 New Features Introduction
 - RAN13 Features Overview
 - HSPA+ Evolution
 - Mobility Between UMTS and LTE
 - Enhanced Fast Dormancy
 - Packet Inspection
 - Optimization of R99 and HSUPA Users Fairness
 - WCDMA RAN13 DC-HSDPA+MIMO Feature Description
 - Description of DC-HSDPA+MIMO
 - Implementation of DC-HSDPA+MIMO
 - Configuration of DC-HSDPA+MIMO
 - Performance of DC-HSDPA+MIMO
 - WCDMA RAN13 Traffic-Based Activation and Deactivation of Secondary Carrier in DC-HSDPA
 - Description of Traffic-Based Activation and Deactivation of Secondary Carrier in DC-HSDPA
 - Implementation of Traffic-Based Activation and Deactivation of Secondary Carrier in DC-HSDPA
 - Configuration of Traffic-Based Activation and Deactivation of Secondary Carrier in DC-HSDPA
 - Performance of Traffic-Based Activation and Deactivation of Secondary Carrier in DC-HSDPA
 - WCDMA RAN13 Enhanced Uplink CELL FACH
 - Description of Enhanced Uplink CELL FACH
 - Implementation of Enhanced Uplink CELL FACH
 - Configuration of Enhanced Uplink CELL FACH
 - Performance of Enhanced Uplink CELL FACH
 - WCDMA RAN13 E-DPCCH Boosting Feature Description
 - Description of E-DPCCH Boosting
 - Implementation of E-DPCCH Boosting
 - Configuration of E-DPCCH Boosting
 - Performance of E-DPCCH Boosting
 - WCDMA RAN13 Enhanced Fast Dormancy Feature
 - Fast Dormancy
 - Enhanced Fast Dormancy and Standard Fast Dormancy
 - Configuration and Related Counters
 - WCDMA RAN13 P2P Downloading Rate Control during Busy Hour
 - Description of P2P Downloading Rate Control during Busy Hour
 - Implementation of P2P Downloading Rate Control during Busy Hour
 - Configuration of P2P Downloading Rate Control during Busy Hour
 - Performance of P2P Downloading Rate Control during Busy Hour
 - WCDMA RAN13 Web Page Access Acceleration
 - Description of Web Page Access Acceleration

-
- Implementation of Web Page Access Acceleration
 - Configuration of Web Page Access Acceleration
 - Performance of Web Page Access Acceleration
 - WCDMA RAN13 Optimization of R99 and HSUPA Users Fairness
 - Description of Optimization of R99 and HSUPA Users Fairness
 - Implementation of Optimization of R99 and HSUPA Users Fairness
 - Configuration of Optimization of R99 and HSUPA Users Fairness
 - Performance of Optimization of R99 and HSUPA Users Fairness
 - WCDMA RAN13 Multi-Carrier Switch off Based on QoS
 - Description of Multi-Carrier Switch off Based on QoS
 - Implementation of Multi-Carrier Switch off Based on QoS
 - Configuration of Multi-Carrier Switch off Based on QoS
 - Performance of Multi-Carrier Switch off Based on QoS
 - WCDMA RAN13 HSUPA Coverage Enhancement at UE Power Limitation
 - Description of HSUPA Coverage Enhancement at UE Power Limitation
 - Implementation of HSUPA Coverage Enhancement at UE Power Limitation
 - Configuration of HSUPA Coverage Enhancement at UE Power Limitation
 - Performance of HSUPA Coverage Enhancement at UE Power Limitation
 - WCDMA RAN13 Adaptive Configuration of Data Channel Power Offset for HSUPA
 - Description of Adaptive Configuration of Data Channel Power Offset for HSUPA
 - Implementation of Adaptive Configuration of Data Channel Power Offset for HSUPA
 - Configuration of Adaptive Configuration of Data Channel Power Offset for HSUPA
 - Performance of Adaptive Configuration of Data Channel Power Offset for HSUPA
 - WCDMA RAN13 Anti-Interference Scheduling for HSUPA
 - Description of Anti-Interference Scheduling for HSUPA
 - Implementation of Anti-Interference Scheduling for HSUPA
 - Configuration of Anti-Interference Scheduling for HSUPA
 - Performance of Anti-Interference Scheduling for HSUPA
 - WCDMA RAN13 Dual-Threshold Scheduling with HSUPA Interference Cancellation
 - Description of Dual-Threshold Scheduling with HSUPA Interference Cancellation
 - Implementation of Dual-Threshold Scheduling with HSUPA Interference Cancellation
 - Configuration of Dual-Threshold Scheduling with HSUPA Interference Cancellation
 - Performance of Dual-Threshold Scheduling with HSUPA Interference Cancellation
 - WCDMA RAN13 GU 2.0MHZ Central Frequency Spacing(U3.8MHZ) Feature
 - Refarming Overview
 - GU 2.0MHz Overview
 - GU 2.0MHz Solution and Implementation
 - GU 2.0MHz Configuration and Verification

Duration

2 working days

Class Size

Min 6, Max 12

1.6.20 WCDMA RAN13-RAN14 Delta Features Training

Training Path

WCDMA RAN13 - RAN14 Delta Features		
OWO52	Lecture, Demo	2d

Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN14 Radio Network Features and Algorithms Training

Objectives

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

- Outline the important new features realized in RAN14 version
- Describe WCDMA RAN14 Multi Sector Solution Feature
- Describe WCDMA RAN14 HSPA+ DC-HSUPA Feature
- Describe WCDMA RAN14 Voice Service Experience Improvement for Weak Reception UEs Feature
- Describe WCDMA RAN14 Service-Based PS Handover from UMTS to LTE Feature
- Describe WCDMA RAN14 Layered Paging in URA_PCH Feature
- Describe WCDMA RAN14 Control Channel Parallel Interference Cancellation Phase2 Feature
- Describe WCDMA RAN14 Dynamical HSDPA CQI Feedback Period Feature
- Describe WCDMA RAN14 Adaptive Adjustment of HSUPA Small Target Retransmissions Feature
- Describe WCDMA RAN14 Intelligent Access Class Control Feature
- Describe WCDMA RAN14 Dynamic Target ROT Adjustment Feature
- Describe WCDMA RAN14 Inter-Frequency Load Balance Based on Configurable Load Threshold Feature
- Describe WCDMA RAN14 Inter-frequency Load Handover based CE Congestion Feature
- Describe WCDMA RAN14 CE Overbooking Feature
- Describe WCDMA RAN14 Load-based Uplink Target BLER Configuration Feature
- Describe WCDMA RAN14 HSDPA Scheduling Based on UE Location Feature

Training Content

OWO52 WCDMA RAN13 - RAN14 Delta Features

- WCDMA RAN14 New Features Description
 - RAN14 Features Overview
 - Capacity for Hot Spot
 - HSPA+ Evolution
 - User Experience Improvement
 - Smart Phone
 - Performance Improvement
 - Easy Network
- WCDMA RAN14 Multi Sector Solution
 - Description of Multi Sector Solution
 - Implementation of Multi Sector Solution
 - Configuration of Multi Sector Solution
 - Performance of Multi Sector Solution
- WCDMA RAN14 HSPA+ DC-HSUPA Feature
 - Description of DC-HSUPA
 - Implementation of DC-HSUPA
 - Configuration of DC-HSUPA
 - Performance of DC-HSUPA
- WCDMA RAN14 Voice Service Experience Improvement for Weak Reception UEs
 - Description of Voice Service Experience Improvement for Weak Reception UEs
 - Implementation of Voice Service Experience Improvement for Weak Reception UEs
 - Configuration of Voice Service Experience Improvement for Weak Reception UEs
 - Performance of Voice Service Experience Improvement for Weak Reception UEs
- WCDMA RAN14 Service-Based PS Handover from UMTS to LTE
 - Description of Service-Based PS Handover from UMTS to LTE
 - Implementation of Service-Based PS Handover from UMTS to LTE
 - Configuration of Service-Based PS Handover from UMTS to LTE
 - Performance of Service-Based PS Handover from UMTS to LTE
- WCDMA RAN14 Layered Paging in URA_PCH
 - Description of Layered Paging in URA_PCH
 - Implementation of Layered Paging in URA_PCH
 - Configuration of Layered Paging in URA_PCH
 - Performance of Layered Paging in URA_PCH
- WCDMA RAN14 Control Channel Parallel Interference Cancellation Phase2
 - Description of Control Channel Parallel Interference Cancellation Phase2
 - Implementation of Control Channel Parallel Interference Cancellation Phase2
 - Configuration of Control Channel Parallel Interference Cancellation Phase2
 - Performance of Control Channel Parallel Interference Cancellation Phase2
- WCDMA RAN14 Dynamical HSDPA CQI Feedback Period

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- Description of Dynamical HSDPA CQI Feedback Period
 - Implementation of Dynamical HSDPA CQI Feedback Period
 - Configuration of Dynamical HSDPA CQI Feedback Period
 - Performance of Dynamical HSDPA CQI Feedback Period
 - WCDMA RAN14 Adaptive Adjustment of HSUPA Small Target Retransmissions
 - Description of Adaptive Adjustment of HSUPA Small Target Retransmissions
 - Implementation of Adaptive Adjustment of HSUPA Small Target Retransmissions
 - Configuration of Adaptive Adjustment of HSUPA Small Target Retransmissions
 - Performance of Adaptive Adjustment of HSUPA Small Target Retransmissions
 - WCDMA RAN14 Intelligent Access Class Control
 - Description of Intelligent Access Class Control
 - Implementation of Intelligent Access Class Control
 - Configuration of Intelligent Access Class Control
 - Performance of Intelligent Access Class Control
 - WCDMA RAN14 Dynamic Target ROT Adjustment
 - Description of Dynamic Target ROT Adjustment
 - Implementation of Dynamic Target ROT Adjustment
 - Configuration of Dynamic Target ROT Adjustment
 - Performance of Dynamic Target ROT Adjustment
 - WCDMA RAN14 Inter-Frequency Load Balance Based on Configurable Load Threshold
 - Description of Inter-Frequency Load Balance Based on Configurable Load Threshold
 - Implementation of Inter-Frequency Load Balance Based on Configurable Load Threshold
 - Configuration of Inter-Frequency Load Balance Based on Configurable Load Threshold
 - Performance of Inter-Frequency Load Balance Based on Configurable Load Threshold
 - WCDMA RAN14 Inter-frequency Load Handover based CE Congestion
 - Description of Inter-frequency Load Handover based CE Congestion
 - Implementation of Inter-frequency Load Handover based CE Congestion
 - Configuration of Inter-frequency Load Handover based CE Congestion
 - Performance of Inter-frequency Load Handover based CE Congestion
 - WCDMA RAN14 CE Overbooking
 - Description of CE Overbooking
 - Implementation of CE Overbooking
 - Configuration of CE Overbooking
 - Performance of CE Overbooking
 - WCDMA RAN14 Load-based Uplink Target BLER Configuration
 - Description of Load-based Uplink Target BLER Configuration
 - Implementation of Load-based Uplink Target BLER Configuration
 - Configuration of Load-based Uplink Target BLER Configuration
 - Performance of Load-based Uplink Target BLER Configuration

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- WCDMA RAN14 HSDPA Scheduling Based on UE Location
 - Description of HSDPA Scheduling Based on UE Location
 - Implementation of HSDPA Scheduling Based on UE Location
 - Configuration of HSDPA Scheduling Based on UE Location
 - Performance of HSDPA Scheduling Based on UE Location

Duration

2 working days

Class Size

Min 6, Max 12

1.6.21 WCDMA RAN14-RAN15 Delta Features Training

Training Path

WCDMA RAN14 - RAN15 Delta Features		
OWO53	Lecture, Demo	2d

Target Audience

Network Deployment Engineers
Optimization Engineers
System Technicians
System Engineers

Prerequisites

- WCDMA RAN Overview Training
- WCDMA RAN Principle Training
- WCDMA HSPA+ Principles Training
- WCDMA RAN15 Radio Network Features and Algorithms Training

Objectives

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

- Outline the important new features realized in RAN15 version
- Describe WCDMA RAN15 HSPA+ DB-HSDPA Feature
- Describe WCDMA RAN15 HSPA+ Flexible DC DB-HSDPA Feature
- Describe WCDMA RAN15 HSPA+ 4C-HSDPA Feature
- Describe WCDMA RAN15 Turbo Interference Cancellation Feature
- Describe WCDMA RAN15 HSUPA Time Division Scheduling Feature
- Describe WCDMA RAN15 Load Based Dynamic Adjustment of PCPICH Power Feature
- Describe WCDMA RAN15 DL DPCH Maximum Power Restriction Feature
- Describe WCDMA RAN15 DL DPCH Pilot Power Adjustment Feature
- Describe WCDMA RAN15 Platinum User Prioritizing Feature
- Describe WCDMA RAN15 Differentiated Service Based on Resource Reservation Feature
- Describe WCDMA RAN15 Layered Paging in Idle Mode Feature
- Describe WCDMA RAN15 HSUPA Scheduling Based on UE Location Feature
- Describe WCDMA RAN15 UMTS-to-LTE Fast Return Feature
- Describe WCDMA RAN15 Macro and Micro Co-carrier Uplink Interference Control Feature
- Describe WCDMA RAN15 Multiband Direct Retry Based on UE Location Feature
- Describe WCDMA RAN15 Narrowband Interference Suppression Feature

Training Content

- OWO53 WCDMA RAN14 - RAN15 Delta Features
- WCDMA RAN15 New Features Overview

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- RAN15 Features Overview
 - HSPA+ Evolution
 - Capacity Improvement
 - User Experience Improvement
 - Performance Improvement
 - Network Collaboration
 - WCDMA RAN15 HSPA+ DB-HSDPA Feature
 - Description of DB-HSDPA
 - Implementation of DB-HSDPA
 - Configuration of DB-HSDPA
 - Performance of DB-HSDPA
 - WCDMA RAN15 HSPA+ Flexible DC DB-HSDPA Feature
 - Description of Flexible DC DB-HSDPA
 - Implementation of Flexible DC DB-HSDPA
 - Configuration of Flexible DC DB-HSDPA
 - Performance of Flexible DC DB-HSDPA
 - WCDMA RAN15 HSPA+ 4C-HSDPA Feature
 - Description of 4C-HSDPA
 - Implementation of 4C-HSDPA
 - Configuration of 4C-HSDPA
 - Performance of 4C-HSDPA
 - WCDMA RAN15 Turbo Interference Cancellation
 - Description of Turbo IC
 - Implementation of Turbo IC
 - Configuration of Turbo IC
 - Performance of Turbo IC
 - WCDMA RAN15 HSUPA Time Division Scheduling
 - Description of HSUPA Time Division Scheduling
 - Implementation of HSUPA Time Division Scheduling
 - Configuration of HSUPA Time Division Scheduling
 - Performance of HSUPA Time Division Scheduling
 - WCDMA RAN15 Load Based Dynamic Adjustment of PCPICH Power
 - Description of Load Based Dynamic Adjustment of PCPICH Power
 - Implementation of Load Based Dynamic Adjustment of PCPICH Power
 - Configuration of Load Based Dynamic Adjustment of PCPICH Power
 - Performance of Load Based Dynamic Adjustment of PCPICH Power
 - WCDMA RAN15 DL DPCH Maximum Power Restriction
 - Description of DL DPCH Maximum Power Restriction
 - Implementation of DL DPCH Maximum Power Restriction
 - Configuration of DL DPCH Maximum Power Restriction
 - Performance of DL DPCH Maximum Power Restriction
 - WCDMA RAN15 DL DPCH Pilot Power Adjustment

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- Description of DL DPCH Pilot Power Adjustment
 - Implementation of DL DPCH Pilot Power Adjustment
 - Configuration of DL DPCH Pilot Power Adjustment
 - Performance of DL DPCH Pilot Power Adjustment
 - WCDMA RAN15 Platinum User Prioritizing
 - Description of Platinum User Prioritizing
 - Implementation of Platinum User Prioritizing
 - Configuration of Platinum User Prioritizing
 - Performance of Platinum User Prioritizing
 - WCDMA RAN15 Differentiated Service Based on Resource Reservation
 - Description of Differentiated Service Based on Resource Reservation
 - Implementation of Differentiated Service Based on Resource Reservation
 - Configuration of Differentiated Service Based on Resource Reservation
 - Performance of Differentiated Service Based on Resource Reservation
 - WCDMA RAN15 Layered Paging in Idle Mode
 - Description of Layered Paging in Idle Mode
 - Implementation of Layered Paging in Idle Mode
 - Configuration of Layered Paging in Idle Mode
 - Performance of Layered Paging in Idle Mode
 - WCDMA RAN15 HSUPA Scheduling Based on UE Location
 - Description of HSUPA Scheduling Based on UE Location
 - Implementation of HSUPA Scheduling Based on UE Location
 - Configuration of HSUPA Scheduling Based on UE Location
 - Performance of HSUPA Scheduling Based on UE Location
 - WCDMA RAN15 UMTS-to-LTE Fast Return
 - Description of UMTS-to-LTE Fast Return
 - Implementation of UMTS-to-LTE Fast Return
 - Configuration of UMTS-to-LTE Fast Return
 - Performance of UMTS-to-LTE Fast Return
 - WCDMA RAN15 Macro and Micro Co-carrier Uplink Interference Control
 - Description of Macro and Micro Co-carrier Uplink Interference Control
 - Implementation of Macro and Micro Co-carrier Uplink Interference Control
 - Configuration of Macro and Micro Co-carrier Uplink Interference Control
 - Performance of Macro and Micro Co-carrier Uplink Interference Control
 - WCDMA RAN15 Multiband Direct Retry Based on UE Location
 - Description of Multiband Direct Retry Based on UE Location
 - Implementation of Multiband Direct Retry Based on UE Location
 - Configuration of Multiband Direct Retry Based on UE Location
 - Performance of Multiband Direct Retry Based on UE Location
 - WCDMA RAN15 Narrowband Interference Suppression
 - Description of Narrowband Interference Suppression
 - Implementation of Narrowband Interference Suppression

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- Configuration of Narrowband Interference Suppression
 - Performance of Narrowband Interference Suppression

Duration

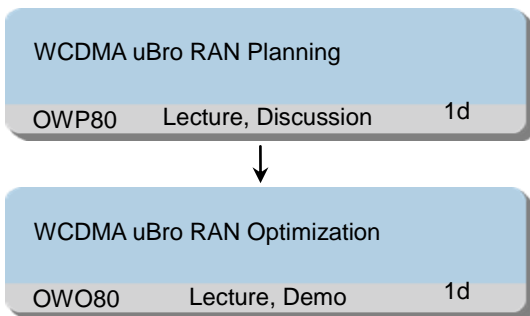
2 working days

Class Size

Min 6, Max 12

1.6.22 WCDMA uBro Radio Network Planning and Optimization Training

Training Path



Target Audience

uBro Optimization Engineers
uBro Technicians
System Technicians
System Engineers

Prerequisites

- Basic knowledge of mobile communications
- OWA00 WCDMA RAN Overview
- OWA01 WCDMA Air Interface

Objectives

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

- Describe the applications scenario of Huawei AP products
- Describe the basic planning of Femto network such as PLMN planning, LAC/RAC/SAC planning, frequency planning, scrambling code planning and etc.
- Describe the camp and handover policy in Femto network
- Describe the deployment of the typical case
- Describe interference test cases for typical networking scenarios
- Describe interference mitigation methods for typical networking scenarios

Training Content

OWP80 WCDMA uBro RAN Planning

- WCDMA uBro Planning Solution
 - Application Scenario of Femto Network
 - Planning of Area Parameters in Femto Network
 - Planning of Radio Parameters in Femto Network
 - Network Deployment Policy of Femto Network
 - A Deployment Example for ePico in Live Network
- UMTS Femto AP Coverage Test Cases
 - Test Case in Apartment Scenario

-
- Test Case in Office Scenario
 - Typical Cases for Deployment
 - UMTS Femto Interference Mitigation
 - Femto Interference Scenarios
 - Test Cases for Femto Interference
 - Interference between Femto and Macro while Femto and Macro Use the Same Frequency
 - Interference between APs while the APs Provide Discontinuous Coverage
 - Interference between APs while the APs Provide Continuous Coverage
 - Femto Interference Mitigation

OWO80 WCDMA uBro RAN Optimization

- UMTS Femto Signaling Procedures
 - UE Registration Procedure
 - Service Procedure
 - Handover Procedure
- UMTS Femto AP Performance KPI and Related Counters Introduction
 - Introduction to PRS
 - Typical KPI for AP
 - Accessibility
 - Mobility
 - Retainability
 - Traffic Volume
 - Others

Duration

2 working days

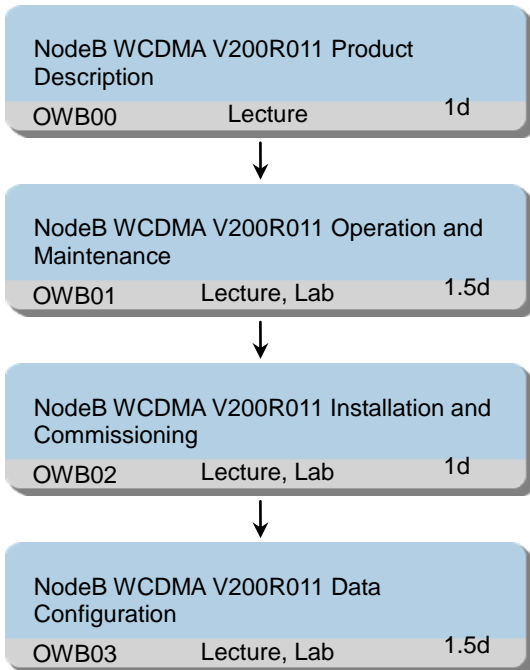
Class Size

Min 6, Max 12

1.7 WCDMA Product

1.7.1 WCDMA RAN11 NodeB Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure of DBS3900
- Detail the functions of different subsystems and boards of DBS3900
- Describe the typical hardware configurations of DBS3900
- Describe the hardware structure of BTS3900
- Detail the functions of different subsystems and boards of BTS3900
- Describe the cables connection of BTS3900
- Describe the expansion and networking of BTS3900
- Explain the architecture of hardware and software components of NodeB operation and maintenance system

-
- Get to know how to use NodeB operation and maintenance tool - LMT
 - Perform corrective and preventive maintenance on NodeB
 - Manage alarms and faults handling
 - Manage data, for example: backuping system data, executing MML commands
 - Manage equipment, for example: checking board status and versions
 - Manage tracing message, for example: creating a tracing task, checking tracing result, saving result
 - Manage real-time monitoring, for example: creating a monitoring task, checking and saving monitoring result
 - Outline the main operation and maintenance tasks for one day, one week and one month
 - Install LMT software
 - Describe the procedure of NodeB commissioning
 - Check the compatibility of NodeB software version
 - Load NodeB software and configuration file
 - Verify local cell status
 - Measure RTWP
 - Monitor output power
 - Outline the user interface of CME configuration tool
 - Illustrate the data configuration procedure
 - Explain key parameters in each step during data configuration procedure
 - Implement the data configuration with template file
 - Perform initial data configuration and dynamic modification

Training Content

OWB00 NodeB WCDMA V200R011 Product Description

- BTS3900 WCDMA V200R011 Product Description
 - BTS3900 Overview
 - BTS3900 Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - BTS3900 Expansion and Networking

OWB01 NodeB WCDMA V200R011 Operation and Maintenance

- NodeB WCDMA V200R011 Operation and Maintenance
 - Operation and Maintenance System
 - NodeB Routine Operation
 - System Management
 - Alarm Management
 - Equipment Management
 - Cell Management

-
- Real-time Monitoring
 - Software Management
 - File Management
 - Tracing Management
 - NodeB Routine Maintenance

OWB02 NodeB WCDMA V200R011 Installation and Commissioning

- NodeB WCDMA V200R011 Installation and Commissioning
 - NodeB Software Installation
 - NodeB System Commissioning
 - Preparation for NodeB Commissioning
 - Procedure of NodeB Commissioning

OWB03 NodeB WCDMA V200R011 Data Configuration

- NodeB WCDMA V200R011 Data Configuration
 - Data Configuration Overview
 - Configuring Physical Equipment
 - Configuring Transport Layer
 - Configuring Radio Layer

Duration

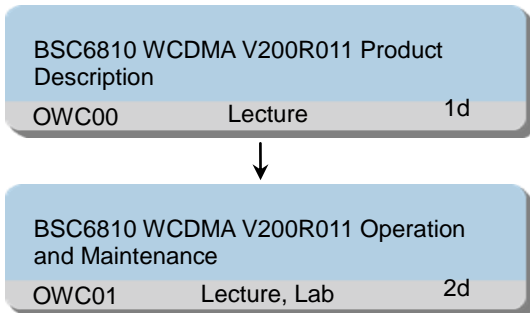
5 working days

Class Size

Min 6, Max 12

1.7.2 WCDMA RAN11 RNC Operation Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the RNC system functions, structures and key characteristics
- Describe the functions, indicators, ports and working mode of each board
- Explain the types and application situations of different fibers and cables
- Describe the signal processing flows of radio and terrestrial interfaces in RNC system
- Explain the typical RAN networking types and each networking type's characters
- Explain the RNC system hardware configuration rules, and calculate the numbers and types of boards in a typical network
- Explain the architecture of RAN Operation and Maintenance system, hardware and software components of the system
- Perform corrective and preventive maintenance on RNC
- Manage BAM server, for example: checking its running status and version
- Get to know how to use RNC operation and maintenance tool - LMT
- Manage authorities of users
- Manage alarms and faults handling
- Manage equipment, for example: checking board status and version
- Manage data, for example: backuping system data, executing MML commands
- Manage Logs, for example: querying logs, saving logs
- Manage tracing message, for example: creating a tracing task, checking tracing result, saving result

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- Manage real-time monitoring, for example: creating a monitoring task, checking and saving monitoring result
 - Outline the main operation and maintenance tasks for one day, one week and one month

Training Content

OWC00 BSC6810 WCDMA V200R011 Product Description

- BSC6810 WCDMA V200R011 Product Description
 - BSC6810 System Overview
 - BSC6810 Hardware Structure
 - BSC6810 Cabinets and Subracks
 - BSC6810 Boards
 - BSC6810 Cables
 - BSC6810 Signal Flows
 - BSC6810 Hardware Configuration

OWC01 BSC6810 WCDMA V200R011 Operation and Maintenance

- BSC6810 WCDMA V200R011 Routine Operation and Maintenance
 - Operation and Maintenance Subsystem
 - RNC Routine Operation
 - Authority Management
 - System Management
 - Alarm Management
 - Log Management
 - Equipment Management
 - Loading Management
 - Configuration Management
 - Real-time Monitoring Management
 - Tracing Management
 - RNC Routine Maintenance

Duration

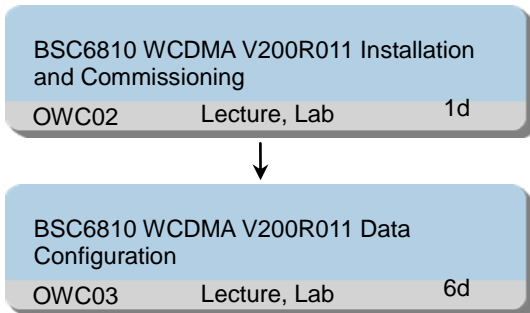
3 working days

Class Size

Min 6, Max 12

1.7.3 WCDMA RAN11 RNC Configuration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900 WCDMA RAN11 RNC Operation Training

Objectives

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

- Describe the structure of RNC operation and maintenance subsystem
- Install BAM software
- Install LMT software
- Describe the procedure of RNC Commissioning.
- Load RNC host software and data file
- Verify RNC interfaces and services
- Integrate RNC to M2000
- Describe the RNC data configuration method and procedure
- Compile transport network data files, including global data, equipment data and lub, lu , lur interfaces data
- Compile the radio network data files for cells
- Explain the configuration procedure for HSDPA services
- Generate the initial data configuration file with LMT software or CME software
- Check the data configuration files integrity and validity
- Load the date configuration file to RNC

Training Content

OWC02 BSC6810 WCDMA V200R011 Installation and Commissioning

- BSC6810 WCDMA V200R011 Software Installation
 - O/M System Introduction

-
- Software Installation and Checkup
 - BSC6810 WCDMA V200R011 System Commissioning
 - Introduction to RNC commissioning
 - Procedure of RNC commissioning
 - Commissioning RNC Equipment
 - Verifying Interfaces (Iub, Iu-CS, Iu-PS, Iur)
 - Handling Alarms During RNC Commissioning
 - Verifying RNC Services
 - Integrating the RNC into the M2000
 - Creating RNC Scheduled Tasks
 - Checking RNC Commissioning Results
 - OWC03 BSC6810 WCDMA V200R011 Data Configuration
 - BSC6810 WCDMA V200R011 Data Configuration(ATM+IP)
 - Data Configuration Overview
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Interface Data Configuration
 - Iub Interface Data Configuration (ATM)
 - Iu-CS Interface Data Configuration (ATM)
 - Iu-PS Interface Data Configuration (ATM)
 - Iur Interface Data Configuration (ATM)
 - Iub Interface Data Configuration (IP)
 - Iu-CS Interface Data Configuration (IP)
 - Iu-PS Interface Data Configuration (IP)
 - Iur Interface Data Configuration (IP)
 - Cell Data Configuration

Duration

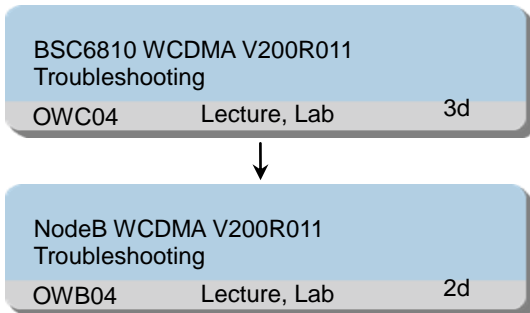
7 working days

Class Size

Min 6, Max 12

1.7.4 WCDMA RAN11 RAN Troubleshooting Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN11 RNC Configuration Training
- WCDMA RAN11 NodeB Training

Objectives

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

- Overview UTRAN Network
- Explain Basic Concepts about UTRAN
- Describe system information broadcast signaling procedure
- Describe paging signaling procedure
- Describe call process signaling procedure
- Describe handover signaling procedure
- Describe RAN troubleshooting process
- Handling Transport Faults
- Handling O/M Faults
- Handling Interface Faults
- Handling Service Faults
- Handling Abnormal RTWP
- Handling Abnormal Downlink Power
- Handling Failure to Deliver the License of the NodeB Through M2000
- Handling Failure to Install the LMT
- Handling Failure to Establish Cells
- Handling High Frequency Deviation (E1) of Clock
- Handling Intermittent Interruption of CPRI Link

-
- Handling Sleeping Cell

Training Content

OWC04 BSC6810 WCDMA V200R011 Troubleshooting

- WCDMA RAN Signaling Flow
 - UTRAN Network Overview
 - Basic Concepts about UTRAN
 - UTRAN Signaling Procedure
 - System Information Broadcast
 - Paging
 - Call Process
 - Handover
- BSC6810 WCDMA V200R011 Troubleshooting
 - Troubleshooting Overview
 - O/M Troubleshooting
 - Loading Troubleshooting
 - Interface Troubleshooting
 - Service Troubleshooting
- BSC6810 WCDMA V200R011 Transport Troubleshooting
 - Troubleshooting Overview
 - E1/T1 Fault Troubleshooting
 - FE/GE Fault Troubleshooting
- BSC6810 WCDMA V200R011 Troubleshooting Practice Guide
 - N/A

OWB04 NodeB WCDMA V200R011 Troubleshooting

- NodeB WCDMA V200R011 Troubleshooting
 - Troubleshooting Overview
 - Abnormal RTWP
 - Abnormal Downlink Power
 - Congestion of License CE
 - Failure to Deliver the NodeB License through M2000
 - Failure to Establish Cells
 - High Frequency Deviation (E1) of Clock
 - Intermittent Interruption of CPRI Link
 - Sleeping Cell
- NodeB WCDMA V200R011 Troubleshooting Practice Guide
 - N/A

Duration

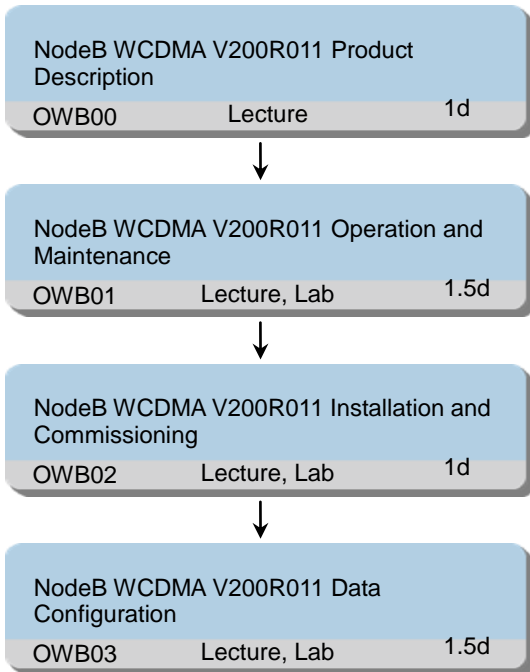
5 working days

Class Size

Min 6, Max 12

1.7.5 WCDMA RAN11.1 NodeB Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure of DBS3900
- Detail the functions of different subsystems and boards of DBS3900
- Describe the typical hardware configurations of DBS3900
- Describe the hardware structure of BTS3900
- Detail the functions of different subsystems and boards of BTS3900
- Describe the cables connection of BTS3900
- Describe the expansion and networking of BTS3900
- Explain the architecture of hardware and software components of NodeB operation and maintenance system
- Get to know how to use NodeB operation and maintenance tool - LMT
- Perform corrective and preventive maintenance on NodeB

-
- Manage alarms and faults handling
 - Manage data, for example: backuping system data, executing MML commands
 - Manage equipment, for example: checking board status and versions
 - Manage tracing message, for example: creating a tracing task, checking tracing result, saving result
 - Manage real-time monitoring, for example: creating a monitoring task, checking and saving monitoring result
 - Outline the main operation and maintenance tasks for one day, one week and one month
 - Install LMT software
 - Describe the procedure of NodeB commissioning
 - Check the compatibility of NodeB software version
 - Load NodeB software and configuration file
 - Verify local cell status
 - Measure RTWP
 - Monitor output power
 - Outline the user interface of CME
 - configuration tool
 - Illustrate the data configuration procedure
 - Explain key parameters in each step during data configuration procedure
 - Implement the data configuration with template file
 - Perform initial data configuration and dynamic modification

Training Content

OWB00 NodeB WCDMA V200R011 Product Description

- BTS3900 WCDMA V200R011 Product Description
 - BTS3900 Overview
 - BTS3900 Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - BTS3900 Expansion and Networking

OWB01 NodeB WCDMA V200R011 Operation and Maintenance

- NodeB WCDMA V200R011 Operation and Maintenance
 - Operation and Maintenance System
 - NodeB Routine Operation
 - System Management
 - Alarm Management
 - Equipment Management
 - Cell Management
 - Real-time Monitoring
 - Software Management

-
- File Management
 - Tracing Management
 - NodeB Routine Maintenance

OWB02 NodeB WCDMA V200R011 Installation and Commissioning

- NodeB WCDMA V200R011 Installation and Commissioning
 - NodeB Software Installation
 - NodeB System Commissioning
 - Preparation for NodeB Commissioning
 - Procedure of NodeB Commissioning

OWB03 NodeB WCDMA V200R011 Data Configuration

- NodeB WCDMA V200R011 Data Configuration
 - Data Configuration Overview
 - Configuring Physical Equipment
 - Configuring Transport Layer
 - Configuring Radio Layer

Duration

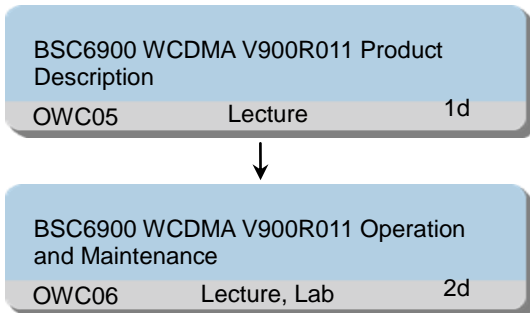
5 working days

Class Size

Min 6, Max 12

1.7.6 WCDMA RAN11.1 RNC Operation Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the system structure of BSC6900
- Detail the functions of the components of BSC6900
- Detail the signal flows in BSC6900
- List the typical hardware configuration of BSC6900
- Detail the structure of operation and maintenance subsystem
- Perform the RNC routine operation
- Perform the RNC routine maintenance

Training Content

OWC05 BSC6900 WCDMA V900R011 Product Description

- BSC6900 WCDMA V900R011 Product Description
 - BSC6900 System Overview
 - BSC6900 Hardware Structure
 - BSC6900 Cabinets and Subracks
 - BSC6900 subsystems and Boards
 - BSC6900 Cables
 - BSC6900 Signal Flows

OWC06 BSC6900 WCDMA V900R011 Operation and Maintenance

- BSC6900 WCDMA V900R011 Operation and Maintenance
 - Operation and Maintenance Subsystem Overview

-
- Running MML Command
 - Alarm Management
 - Device Panel
 - Routine Maintenance MML
 - Management of Operation Rights
 - Log Management
 - Performance Monitoring
 - Tracing Management
- BSC6900 WCDMA V900R011 Operation and Maintenance Practice Guide

Duration

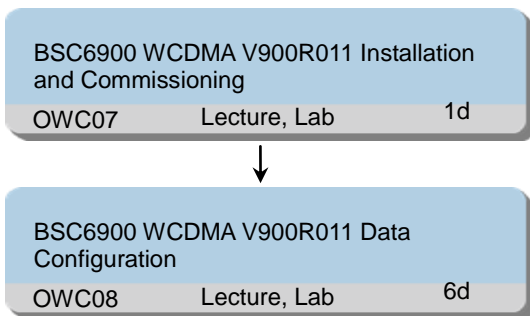
3 working days

Class Size

Min 6, Max 12

1.7.7 WCDMA RAN11.1 RNC Configuration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900 WCDMA RAN11.1 RNC Operation Training

Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline RNC data configuration procedure based on CME and LMT
- Complete RNC data configuration based on CME and LMT

Training Content

OWC07 BSC6900 WCDMA V900R011 Installation and Commissioning

- BSC6900 WCDMA V900R011 Installation / Commissioning
 - BSC6900 O/M System Introduction
 - BSC6900 Software Installation
 - BSC6900 Commissioning
 - BSC6900 Commissioning Introduction
 - BSC6900 Commissioning Procedure

-
- BSC6900 WCDMA V900R011 Installation / Commissioning Practice Guide

- N/A

OWC08 BSC6900 WCDMA V900R011 Data Configuration

- BSC6900 WCDMA V900R011 Data Configuration Based on CME
 - Overview of Multi-Mode BSC Data Configuration
 - MBSC(RNC) Data Configuration Preparation
 - MBSC(RNC) Data Configuring
 - MBSC(RNC) Data Exporting
- BSC6900 WCDMA V900R011 Data Configuration Based on CME Practice Guide
- BSC6900 WCDMA V900R011 Data Configuration Based on LMT
 - Data Configuration Overview
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Configuring the System Information
 - Configuring a Cabinet
 - Configuring a Subrack
 - Configuring a Board
 - Configuring the Clocks
 - Configuring the Time
 - Configuring the IP Address of the EMS Server
 - Interface Data Configuration
 - Iub Interface Data Configuration (ATM/IP)
 - Iu-CS Interface Data Configuration (ATM)
 - Iu-PS Interface Data Configuration (IP)
 - Iu-CS Interface Data Configuration (IP)
 - Iur Interface Data Configuration (ATM)
 - Iur Interface Data Configuration (IP)
 - Cell Data Configuration
- BSC6900 WCDMA V900R011 Data Configuration Based on MML Practice Guide

Duration

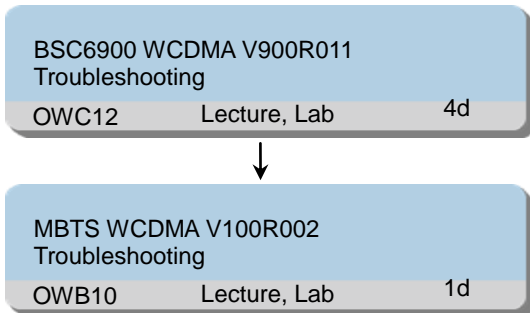
7 working days

Class Size

Min 6, Max 12

1.7.8 WCDMA RAN11.1 RAN Troubleshooting Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN11.1 RNC Configuration Training
- WCDMA RAN11.1 NodeB Training

Objectives

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

- Describe RAN troubleshooting process
- Handling Transmission Faults
- Handling Equipments Faults
- Handling O/M Faults
- Handling Basic Service Faults
- Handling NodeB Abnormal RTWP
- Handling Abnormal Downlink Power
- Handling Failure to Deliver the License of the NodeB Through M2000
- Handling Failure to Establish Cells
- Handling Intermittent Interruption of CPRI Link
- Handling Sleeping Cell

Training Content

OWC12 BSC6900 WCDMA V900R011 Troubleshooting

- WCDMA RAN Signaling Flow
 - UTRAN Network Overview
 - Basic Concepts about UTRAN
 - UTRAN Signaling Procedure
 - System Information Broadcast

-
- Paging
 - Call Process
 - Handover
 - BSC6900 WCDMA V900R011 Troubleshooting
 - Requirements for Maintenance Personnel
 - General Procedures of Troubleshooting
 - Basic Methods of Fault Judgment and Location
 - Approach to prevent BSC6900 fault
 - BSC6900 WCDMA V900R011 Troubleshooting Practice Guide
 - N/A
- OWB10 MBTS WCDMA V100R002 Troubleshooting
- BTS3900 WCDMA V200R011 Troubleshooting
 - Troubleshooting Overview
 - Abnormal RTWP
 - Abnormal Downlink Power
 - Congestion of License CE
 - Failure to Deliver the NodeB License through M2000
 - Failure to Establish Cells
 - Intermittent Interruption of CPRI Link
 - Sleeping Cell
 - BTS3900 WCDMA V200R011 Troubleshooting Practice Guide

Duration

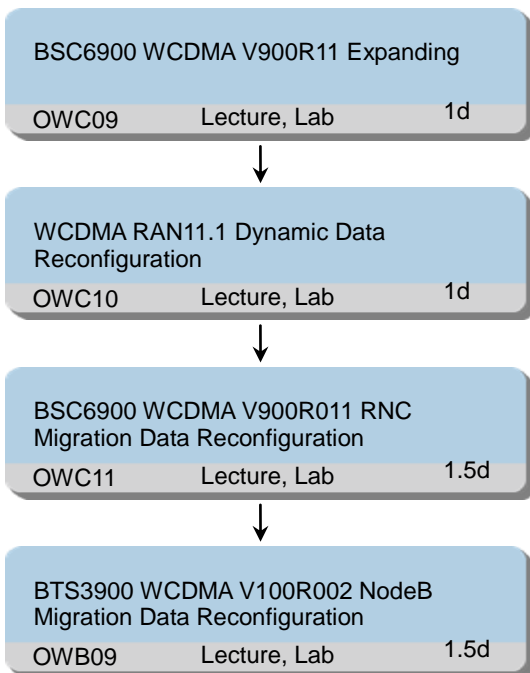
5 working days

Class Size

Min 6, Max 12

1.7.9 WCDMA RAN11.1 RAN Reconfiguration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN11.1 RNC Configuration Training
- WCDMA RAN11.1 NodeB Training

Objectives

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

- Describe the procedure of expanding the RNC capacity
- Perform how to add an RNC board
- Perform how to add an EPS
- Upon completion of this course, you will be able to:
- Perform how to Increase Frequencies on the UMTS Network
- Perform how to Reconfigure the Parameters of Physical NodeBs
- Perform how to Reconfigure the Data of Cells and Neighboring Cells in Batches
- Perform how to Reconfigure Cell Algorithm Parameters
- Describe the procedure of the RNC migration data reconfiguration
- Perform the RNC migration data reconfiguration

-
- Upon completion of this course, you will be able to:
 - Detail the scenarios of NodeB migration data reconfiguration
 - Detail the procedure of NodeB migration data reconfiguration
 - Perform the NodeB migration data reconfiguration

Training Content

OWC09 BSC6900 WCDMA V900R11 Expanding

- BSC6900 WCDMA V900R11 Expansion
 - Overview of Expanding the RNC Capacity
 - Adding an RNC Board
 - Adding an EPS Subrack
- BSC6900 WCDMA V900R11 Expansion Practice Guide

OWC10 WCDMA RAN11.1 Dynamic Data Reconfiguration

- WCDMA RAN11.1 Dynamic Data Reconfiguration
 - Increasing Frequencies on the UMTS Network
 - Reconfiguring the Parameters of Physical NodeBs
 - Reconfiguring the Data of Cells and Neighboring Cells in Batches
 - Reconfiguring Cell Algorithm Parameters
- WCDMA RAN11.1 Dynamic Data Reconfiguration Practice Guide

OWC11 BSC6900 WCDMA V900R011 RNC Migration Data Reconfiguration

- BSC6900 WCDMA V900R011 Migration Data Reconfiguration
 - RNC Migration Scenarios
 - Reparenting RNC Between MGWs
 - Reparenting RNC Between MSC Servers
 - Reparenting RNC Between SGSN
- BSC6900 WCDMA V900R011 Migration Data Reconfiguration Practice Guide

OWB09 BTS3900 WCDMA V100R002 NodeB Migration Data Reconfiguration

- BTS3900 WCDMA V200R011 NodeB Migration Data Reconfiguration
 - NodeB Reparenting Scenarios
 - Reparenting NodeBs Under an RNC
 - Reparenting NodeBs Between RNCs of the Same Version
- BTS3900 WCDMA V200R011 NodeB Migration Data Reconfiguration Practice Guide

Duration

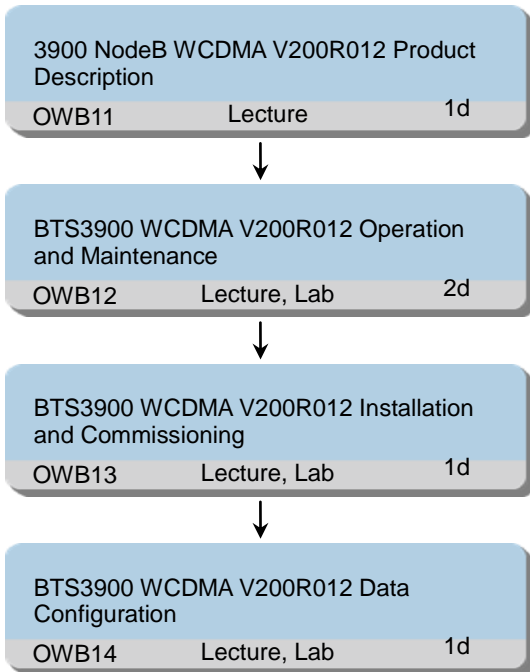
5 working days

Class Size

Min 6, Max 12

1.7.10 WCDMA RAN12.0 NodeB Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure and application scenario of NodeB
- Detail the functions of different subsystems and boards of NodeB
- Describe the cables connection of NodeB
- Describe the expansion and networking of NodeB
- Describe the structure of operation and maintenance system
- Detail routine operation of NodeB
- Detail routine maintenance of NodeB
- Detail the scenarios of NodeB commissioning
- Perform NodeB Remote commissioning
- Perform NodeB Local commissioning
- Outline NodeB data configuration procedure based on CME

-
- Complete NodeB data configuration

Training Content

OWB11 3900 NodeB WCDMA V200R012 Product Description

- BTS3900 WCDMA V200R012 Product Description
 - 3900 Series WCDMA NodeB Overview
 - NodeB Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - NodeB Expansion and Networking

OWB12 BTS3900 WCDMA V200R012 Operation and Maintenance

- BTS3900 WCDMA V200R012 Operation and Maintenance
 - Operation and Maintenance System Overview
 - NodeB Routine Operation
 - System Management
 - Alarm Management
 - Equipment Management
 - Cell Management
 - Real-time Monitoring
 - Software Management
 - File Management
 - Tracing Management
 - NodeB Routine Maintenance
- BTS3900 WCDMA V200R012 Operation and Maintenance Practice Guide

OWB13 BTS3900 WCDMA V200R012 Installation and Commissioning

- BTS3900 WCDMA V200R012 installation and commissioning
 - Introduction to NodeB Commissioning
 - Commissioning Scenarios
 - Commissioning Modes
 - Remote Commissioning NodeB
 - Local Commissioning NodeB
- BTS3900 WCDMA V200R012 installation and commissioning Practice Guide

OWB14 BTS3900 WCDMA V200R012 Data Configuration

- BTS3900 WCDMA V200R012 Data Configuration
 - Overview of Configuring Multi-Mode Base Stations
 - NodeB Data Configuration Preparation
 - NodeB Data Configuring (GUI mode)
 - NodeB Data Configuring (Template file mode)
 - NodeB Data Exporting and Activating
- BTS3900 WCDMA V200R012 Data Configuration Practice Guide

Duration

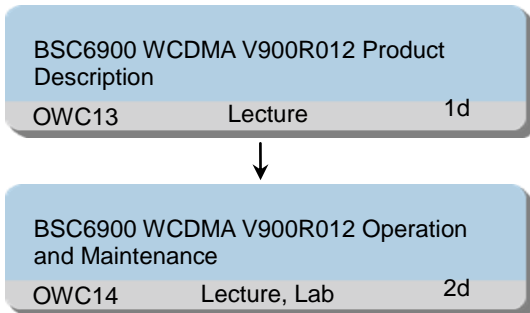
5 working days

Class Size

Min 6, Max 12

1.7.11 WCDMA RAN12.0 RNC Operation Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the system structure of BSC6900
- Detail the functions of the components of BSC6900
- Detail the signal flows in BSC6900
- List the typical hardware configuration of BSC6900
- Detail the structure of operation and maintenance subsystem
- Perform the RNC routine operation
- Perform the RNC routine maintenance

Training Content

OWC13 BSC6900 WCDMA V900R012 Product Description

- BSC6900 WCDMA V900R012 Product Description
 - BSC6900 System Overview
 - BSC6900 Hardware Structure
 - BSC6900 Cabinets and Subracks
 - BSC6900 subsystems and Boards
 - BSC6900 Cables
 - BSC6900 Signal Flows

OWC14 BSC6900 WCDMA V900R012 Operation and Maintenance

- BSC6900 WCDMA V900R012 Operation and Maintenance
 - Operation and Maintenance Subsystem Overview

-
- Running MML Command
 - Alarm Management
 - Device Panel
 - Routine Maintenance MML
 - Management of Operation Rights
 - Log Management
 - Performance Monitoring
 - Tracing Management
- BSC6900 WCDMA V900R012 Operation and Maintenance Practice Guide

Duration

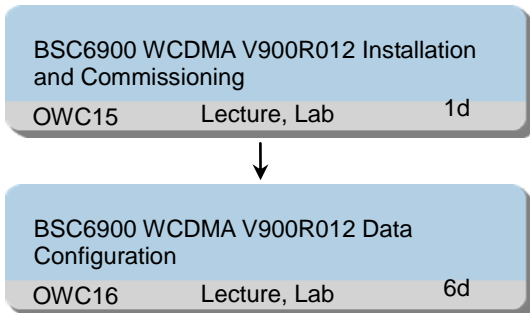
3 working days

Class Size

Min 6, Max 12

1.7.12 WCDMA RAN12.0 RNC Configuration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900 WCDMA RAN12 RNC Operation Training

Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline RNC data configuration procedure based on CME and LMT
- Complete RNC data configuration based on CME and LMT

Training Content

OWC15 BSC6900 WCDMA V900R012 Installation and Commissioning

- BSC6900 WCDMA V900R012 Commissioning
 - BSC6900 O/M System Introduction
 - BSC6900 Software Installation
 - BSC6900 Commissioning
 - BSC6900 Commissioning Introduction
 - BSC6900 Commissioning Procedure

-
- BSC6900 WCDMA V900R012 Installation / Commissioning Practice Guide

- N/A

OWC16 BSC6900 WCDMA V900R012 Data Configuration

- BSC6900 WCDMA V900R012 Data Configuration Based on CME
 - Overview of BSC6900 Data Configuration
 - BSC6900 Data Configuration Preparation
 - BSC6900 Configuring Based on CME
 - BSC6900 Data Exporting
- BSC6900 WCDMA V900R012 Data Configuration Based on CME Practice Guide
- BSC6900 WCDMA V900R012 Data Configuration Based on LMT
 - Data Configuration Overview
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Configuring the System Information
 - Configuring a Cabinet
 - Configuring a Subrack
 - Configuring a Board
 - Configuring the Clocks
 - Configuring the Time
 - Configuring the IP Address of the EMS Server
 - Interface Data Configuration
 - Iub Interface Data Configuration (ATM/IP)
 - Iu-CS Interface Data Configuration (ATM)
 - Iu-PS Interface Data Configuration (IP)
 - Iu-CS Interface Data Configuration (IP)
 - Iur Interface Data Configuration (ATM)
 - Iur Interface Data Configuration (IP)
 - Cell Data Configuration
- BSC6900 WCDMA V900R012 Data Configuration Based on LMT Practice Guide

Duration

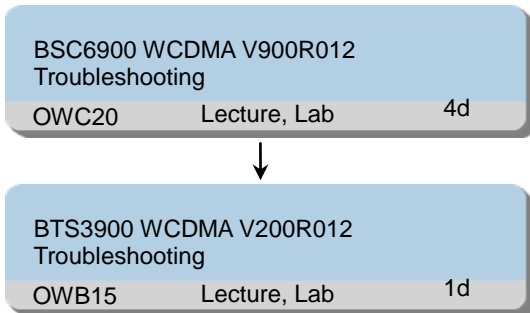
7 working days

Class Size

Min 6, Max 12

1.7.13 WCDMA RAN12.0 RAN Troubleshooting Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN12 RNC Configuration Training
- WCDMA RAN12 NodeB Training

Objectives

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

- Describe RAN troubleshooting process
- Handling Transmission Faults
- Handling Equipments Faults
- Handling O/M Faults
- Handling Basic Service Faults
- Handling NodeB Abnormal RTWP
- Handling Abnormal Downlink Power
- Handling Hardware Faults
- Handling Failure to Deliver the License of the NodeB Through M2000
- Handling Failure to Establish Cells
- Handling Sleeping Cell
- Handling OMCH Fault

Training Content

OWC20 BSC6900 WCDMA V900R012 Troubleshooting

- WCDMA RAN Signaling Flow
 - UTRAN Network Overview
 - Basic Concepts about UTRAN
 - UTRAN Signaling Procedure

-
- System Information Broadcast
 - Paging
 - Call Process
 - Handover
 - BSC6900 WCDMA V900R012 Troubleshooting
 - ATM Transmission Test Methodes
 - IP Transmission Test Methodes
 - Transmission Faults Troubleshooting
 - E1/T1 Fault Troubleshooting
 - IMA Fault Troubleshooting
 - SAALNK Fault Troubleshooting
 - AAL2PATH Fault Troubleshooting
 - FE Fault Troubleshooting
 - SCTP Fault Troubleshooting
 - IPPATH Fault Troubleshooting
 - Equipments Faults Troubleshooting
 - MSP Switch Fault
 - Reset Fault of Interface Boards
 - O/M Faults Troubleshooting
 - OMU Service Abnormality
 - RNC Active and Standby OMUs Synchronization Failure
 - RNC OMU Command Execution Timeout
 - Basic Service Faults Troubleshooting
 - BSC6900 WCDMA V900R012 Troubleshooting Practice Guide
 - OWB15 BTS3900 WCDMA V200R012 Troubleshooting
 - NodeB WCDMA V200R012 Troubleshooting
 - Troubleshooting Overview
 - Abnormal RTWP
 - CE Faults
 - Hardware Faults
 - License Delivery Failure
 - Clock Faults
 - Cell Setup Failure at NodeB side
 - Sleeping Cell
 - OMCH Faults
 - NodeB WCDMA V200R012 Troubleshooting Practice Guide

Duration

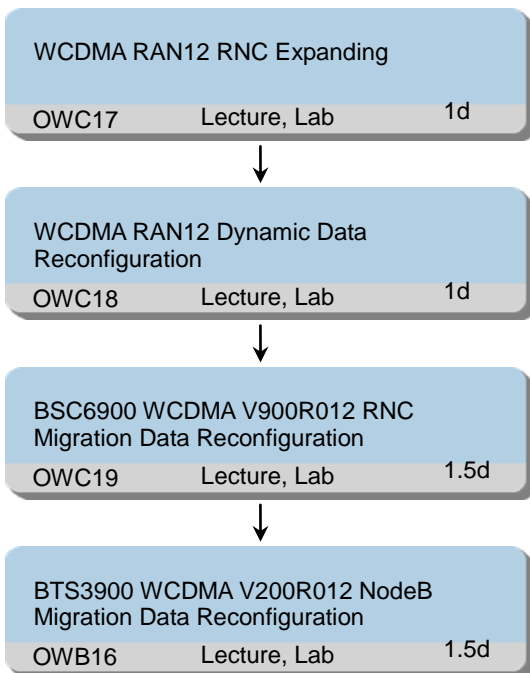
5 working days

Class Size

Min 6, Max 12

1.7.14 WCDMA RAN12.0 RAN Reconfiguration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN12 RNC Configuration Training
- WCDMA RAN12 NodeB Training

Objectives

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

- Describe the procedure of expanding the RNC capacity
- Perform how to add an RNC board
- Perform how to add an EPS
- Upon completion of this course, you will be able to:
- Perform how to Increase Frequencies on the UMTS Network
- Perform how to Reconfigure the Parameters of Physical NodeBs
- Perform how to Reconfigure the Data of Cells and Neighboring Cells in Batches
- Perform how to Reconfigure Cell Algorithm Parameters
- Describe the procedure of the RNC migration data reconfiguration
- Perform the RNC migration data reconfiguration

-
- Upon completion of this course, you will be able to:
 - Detail the scenarios of NodeB migration data reconfiguration
 - Detail the procedure of NodeB migration data reconfiguration
 - Perform the NodeB migration data reconfiguration

Training Content

OWC17 WCDMA RAN12 RNC Expanding

- BSC6900 WCDMA V900R012 Expansion
 - Overview of Expanding the RNC Capacity
 - Adding an RNC Board
 - Adding an RBS Subrack
- BSC6900 WCDMA V900R012 Expansion Practice Guide

OWC18 WCDMA RAN12 Dynamic Data Reconfiguration

- WCDMA RAN12 Dynamic Data Reconfiguration
 - Reconfiguring Global Algorithm Parameters of the Radio Layer
 - Reconfiguring the Parameters of Physical NodeBs
 - Increasing Frequencies on the UMTS Network
 - Deleting Physical NodeBs in Batches
 - Reconfiguring the Data of Cells and Neighboring Cells in Batches
 - Reconfiguring Cell Algorithm Parameters
 - Modifying UMTS Cell Frequencies
- WCDMA RAN12 Dynamic Data Reconfiguration Practice Guide

OWC19 BSC6900 WCDMA V900R012 RNC Migration Data Reconfiguration

- BSC6900 WCDMA V900R012 Migration Data Rconfiguration
 - RNC Migration Scenarios
 - Reparenting RNC Between MGWs
 - Reparenting RNC Between MSC Servers
 - Reparenting RNC Between SGSN
- BSC6900 WCDMA V900R012 Migration Data Reconfiguration Practice Guide

OWB16 BTS3900 WCDMA V200R012 NodeB Migration Data Reconfiguration

- BTS3900 WCDMA V200R012 Migration Data Configuration
 - NodeB Reparenting Scenarios
 - Reparenting NodeBs Under an RNC
 - Reparenting NodeBs Between RNCs of the Same Version
- BTS3900 WCDMA V200R012 NodeB Migration Data Reconfiguration Practice Guide

Duration

5 working days

Class Size

Min 6, Max 12

1.7.15 WCDMA RAN11.0-RAN12.0 Product Delta Training

Training Path

WCDMA RAN11 - RAN12 Delta Training		
OWC21	Lecture	1d

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN11 RNC Configuration Training
- WCDMA RAN11 NodeB Training

Objectives

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

- Describe New hardware
- Describe some important new features
- Describe some new O/M functions
- Understand the values and benefit of the features

Training Content

OWC21 WCDMA RAN11 - RAN12 Delta Training

- RAN11 - RAN12 Hardware Delta
 - Capacity and Performance
 - Hardware
 - Implementation
 - Interfaces
- BSC6900 WCDMA V2R10(V2R11) - V9R12 Delta for Web LMT
 - GUI Difference between Java LMT and Web LMT
- BTS3900 WCDMA V200R012 Product New Features
 - NodeB Alarm and Configuration Optimization
 - NodeB Self-discovery
 - New Transmission Features
 - NodeB License Management Optimization
 - Green BTS Parameter Description
 - Upgrade Optimization of the WCDMA RAN12 NodeB
- WRAN CME V1R8 to SRAN CME V2R10 Delta
 - CME V2R10 Introduction

-
- Management of Three Types of Areas
 - Configuration Navigation Enhancement
 - Configuration Template Enhancement
 - Import and Export Enhancement
 - NodeB Reparenting Enhancement
 - RAN12 RNC New Feature
 - Resource Pool Board Replacement
 - Warning of Disaster
 - New Features of OMU

Duration

1 working day

Class Size

Min 6, Max 12

1.7.16 WCDMA uBro2.0 Network Operation Training

Training Path

WCDMA uBro2.0 RAN Operation Maintenance		
OWF00	Lecture, Lab	5d

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of UMTS network principle

Objectives

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

- Describe interface and network architecture for WCDMA system uBro solution.
- Describe the basic principles for WCDMA system.
- Introduce the network architecture and structure of uBro solution.
- Describe the AP basic functions and interfaces.
- Describe the types of AP and hardware structure.
- Describe the accessing way and procedure of AP.
- Perform the AP commissioning and data configuration.
- Introduce the IPCLK1000 working principle and features.
- Describe the IPCLK1000 network structure.
- Describe the IPCLK1000 hardware structure.
- Perform the IPCLK1000 routine operation and maintenance, commissioning and data configuration.
- Introduce the AHR basic functions and interfaces.
- Describe the AHR network architecture.
- Describe the AHR hardware structure and typical configuration.
- Describe the AHR software structure and functions.
- Describe the AHR client routine operation and maintenance functions.
- Introduce the APM basic functions and interfaces.
- Describe the APM network architecture.
- Describe the APM hardware structure and typical configuration.
- Describe the APM software structure and functions.
- Perform the APM routine operation and maintenance on AP with client.
- Introduce M2000 basic functions.
- Describe the M2000 system architecture and functions.

-
- Introduce the M2000 network for uBro solution.
 - Perform M2000 routine operation and maintenance on AP with client.

Training Content

OWF00 WCDMA uBro2.0 RAN Operation Maintenance

- Huawei uBro2.0 Solution
 - Description of the uBro Solution
 - Solution Architecture
 - Network Solution
 - Security Solution
 - Operation and Maintenance
 - Service Provisioning
- M2000 System Introduction (ATAE)
 - Introduction to M2000
 - M2000 system architecture
 - M2000 typical system configuration
- AP V200R010 Introduction
 - AP System Overview
 - AP Hardware Introduction
 - AP Typical Access Networking
 - AP Operation and Maintenance
- IPCLK1000 V200R002 Introduction
 - IPCLK System Overview
 - IPCLK Typical Network Mode
 - IPCLK Hardware Instruction
 - IPCLK Software Instruction
 - IPCLK Operation and Maintenance
- AHR V100R002 Introduction
 - AHR System Overview
 - AHR Hardware Introduction
 - AHR Software Introduction
 - AHR Operation and Maintenance
- AP Manager V100R002 Introduction
 - AP Manager System Overview
 - AP Manager Hardware Introduction
 - AP Manager Software Introduction
 - AP Manager Operation and Maintenance
- uBro2.0 O/M Practice Guide
 - N/A

Duration

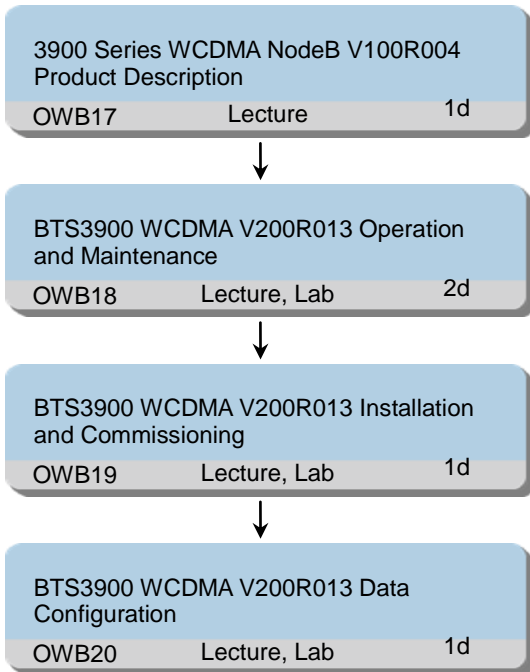
5 working days

Class Size

Min 6, Max 12

1.7.17 WCDMA RAN13.0 NodeB Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure of 3900 series NodeB
- Detail the functions of different subsystems and boards of NodeB
- Describe the cables connection of NodeB
- Describe the expansion and networking of NodeB
- Describe the structure of operation and maintenance system
- Detail routine operation of NodeB
- Detail routine maintenance of NodeB
- Detail the scenarios of NodeB commissioning
- Perform NodeB Remote commissioning
- Perform NodeB Local commissioning
- Outline MBTS data configuration procedure based on CME

-
- Complete MBTS data configuration

Training Content

OWB17 3900 Series WCDMA NodeB V100R004 Product Description

- 3900 Series WCDMA NodeB V100R004 Product Description
 - 3900 Series NodeB Overview
 - 3900 Series NodeB Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - BTS3900 Expansion and Networking

OWB18 BTS3900 WCDMA V200R013 Operation and Maintenance

- BTS3900 WCDMA V200R013 Operation and Maintenance
 - Operation and Maintenance System Overview
 - NodeB Routine Operation
 - System Management
 - Alarm Management
 - Equipment Management
 - Cell Management
 - Real-time Monitoring
 - Software Management
 - File Management
 - Tracing Management
 - NodeB Routine Maintenance
- BTS3900 WCDMA V200R013 Operation and Maintenance Practice Guide
 - N/A

OWB19 BTS3900 WCDMA V200R013 Installation and Commissioning

- BTS3900 WCDMA V200R013 Local Commissioning
 - NodeB System Overview
 - NodeB Installation Procedures
 - Local LMT Commissioning
 - Local USB Disk + M2000 Commissioning
- BTS3900 WCDMA V200R013 Local Commissioning Practice Guide
- BTS3900 WCDMA V200R013 Remote Commissioning
 - NodeB System Overview
 - NodeB Installation Procedures
 - Remote Commissioning Scenarios
 - Remote Commissioning on M2000
- BTS3900 WCDMA V200R013 Remote Commissioning Practice Guide

OWB20 BTS3900 WCDMA V200R013 Data Configuration

- BTS3900 WCDMA V200R013 Initial Data Configuration based on CME

-
- Introduction to the CME
 - NodeB Data Configuring by GUI mode
 - NodeB Data Configuring by Iub Collaboration Mode
 - NodeB Data Consistency Check and Exporting
 - BTS3900 WCDMA V200R013 Initial Data Configuration based on CME Practice Guide

Duration

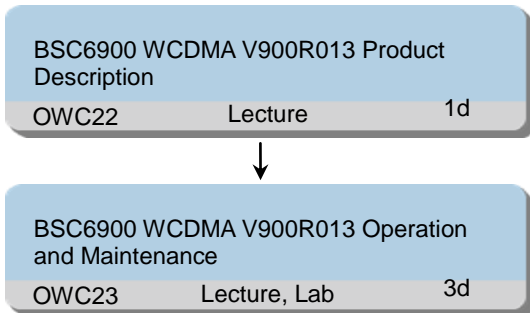
5 working days

Class Size

Min 6, Max 12

1.7.18 WCDMA RAN13.0 RNC Operation Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the system structure of BSC6900
- Detail the functions of the components of BSC6900
- Detail the signal flows in BSC6900
- List the typical hardware configuration of BSC6900
- master board replacement procedure
- replace the faulty board correctly and ensure RNC work normally.
- Set the alarm collection template, and collect the alarm by the template.
- Set the KPI collection template, and collect the KPI by the template.
- Collect the counters of board and link load by m2000, check the RNC load according to the specific threshold.
- Collect the counters of SPU subsystem by m2000
- Check the SPU subsystem performance.
- master the transmission detection methods and their operation
- Detect the transmission performance and connectivity by the transmission methods.
- Master the signaling tracing operation, collect the interface and link signaling message.
- master the procedure of handling the TOPN alarms
- Handle the common alarms according to the procedures.
- master the procedure of Backing Up and Restoring Data
- Perform the restoration of data correctly when OMU board is damaged, OMU database

collapses, or the OMU upgrade fails.

Training Content

OWC22 BSC6900 WCDMA V900R013 Product Description

- BSC6900 WCDMA V900R013 Product Description
 - BSC6900 System Overview
 - BSC6900 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
 - BSC6900 Signal Flows
 - BSC6900 Typical Configuration

OWC23 BSC6900 WCDMA V900R013 Operation and Maintenance

- BSC6900 WCDMA V900R013 Operation and Maintenance Student Book
 - Alarms collection procedure and operation By M2000
 - Daily KPI collection procedure and operation
 - SPU subsystem performance counters
 - SPU performance check procedure and operation
 - RNC link and board load counter
 - collection procedure and operation of RNC link and board load counter
 - RNC board replacement procedure and operation
 - ATM/IP transmission detection method and operation
 - interface and link signaling tracing
 - TOPN alarms Handling Procedure
 - system data backup procedure and operation

Duration

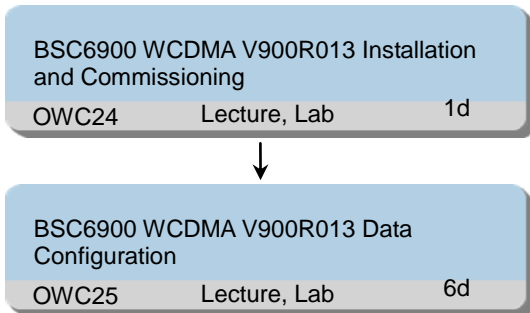
4 working days

Class Size

Min 6, Max 12

1.7.19 WCDMA RAN13.0 RNC Configuration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900 WCDMA RAN13 RNC Operation Training

Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline RNC data configuration procedure based on CME and LMT
- Complete RNC data configuration based on CME and LMT

Training Content

OWC24 BSC6900 WCDMA V900R013 Installation and Commissioning

- BSC6900 WCDMA V900R013 Installation / Commissioning
 - BSC6900 O/M System Introduction
 - BSC6900 Software Installation
 - BSC6900 Commissioning
 - BSC6900 Commissioning Introduction
 - BSC6900 Commissioning Procedure

-
- BSC6900 WCDMA V900R013 Installation / Commissioning Practice Guide
 - OWC25 BSC6900 WCDMA V900R013 Data Configuration
 - BSC6900 WCDMA V900R013 Initial Data Configuration Based on CME
 - Introduction of CME
 - BSC6900 Data Configuring
 - Configuration Procedure Based on CME
 - Configuring Global Data Based on CME
 - Configuring Device Data Based on CME
 - Configuring Interface Data Based on CME
 - Configuring Cell Data Based on CME
 - BSC6900 Data Exporting
 - BSC6900 WCDMA V900R013 Initial Data Configuration Based on CME Practice Guide
 - BSC6900 WCDMA V900R013 Initial Data Configuration Based on LMT
 - Data Configuration Overview
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Configuring the System Information
 - Configuring a Cabinet
 - Configuring a Subrack
 - Configuring a Board
 - Configuring the Clocks
 - Configuring the Time
 - Configuring the IP Address of the EMS Server
 - Interface Data Configuration
 - Iub Interface Data Configuration (ATM/IP)
 - Iu-CS Interface Data Configuration (ATM)
 - Iu-PS Interface Data Configuration (IP)
 - Iu-CS Interface Data Configuration (IP)
 - Iur Interface Data Configuration (ATM)
 - Iur Interface Data Configuration (IP)
 - Cell Data Configuration
 - BSC6900 WCDMA V900R013 Initial Data Configuration Based on LMT Practice Guide

Duration

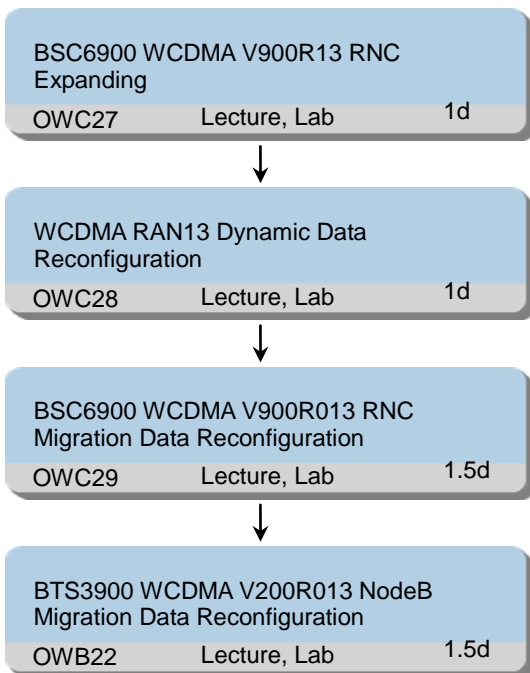
7 working days

Class Size

Min 6, Max 12

1.7.20 WCDMA RAN13.0 RAN Reconfiguration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN13 RNC Configuration Training
- WCDMA RAN13 NodeB Training

Objectives

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

- Describe the procedure of expanding the RNC capacity
- Perform how to add an RNC board
- Perform how to add an EPS
- Upon completion of this course, you will be able to:
- Perform how to Increase Frequencies on the UMTS Network
- Perform how to Reconfigure the Parameters of Physical NodeBs
- Perform how to Reconfigure the Data of Cells and Neighboring Cells in Batches
- Perform how to Reconfigure Cell Algorithm Parameters
- Describe the procedure of the RNC migration data reconfiguration
- Perform the RNC migration data reconfiguration

- Upon completion of this course, you will be able to:
- Detail the scenarios of NodeB migration data reconfiguration
- Detail the procedure of NodeB migration data reconfiguration
- Perform the NodeB migration data reconfiguration

Training Content

OWC27 BSC6900 WCDMA V900R13 RNC Expanding

- BSC6900 WCDMA V900R13 Expansion
 - Overview of Expanding the RNC Capacity
 - Adding an RNC Board
 - Adding an EPS Subrack
- BSC6900 WCDMA V900R13 Expansion Practice Guide

OWC28 WCDMA RAN13 Dynamic Data Reconfiguration

- WCDMA RAN13 Dynamic Data Reconfiguration
 - Introduction of CME
 - Reconfiguring Global Algorithm Parameters of the Radio Layer
 - Reconfiguring the Parameters of Physical NodeBs
 - Increasing Frequencies on the UMTS Network
 - Deleting Physical NodeBs in Batches
 - Reconfiguring the Data of Cells and Neighboring Cells in Batches
 - Reconfiguring Cell Algorithm Parameters
 - Modifying UMTS Cell Frequencies
- WCDMA RAN13 Dynamic Data Reconfiguration Practice Guide

OWC29 BSC6900 WCDMA V900R013 RNC Migration Data Reconfiguration

- BSC6900 WCDMA V900R013 RNC Migration Data Reconfiguration
 - RNC Migration Scenarios
 - Reparenting RNC Between MGWs
 - Reparenting RNC Between MSC Servers
 - Reparenting RNC Between SGSN
- BSC6900 WCDMA V900R013 RNC Migration Data Reconfiguration Practice Guide

OWB22 BTS3900 WCDMA V200R013 NodeB Migration Data Reconfiguration

- BTS3900 WCDMA V200R013 NodeB Migration Data Reconfiguration
 - NodeB Reparenting Scenarios
 - Reparenting NodeBs Under an RNC
 - Reparenting NodeBs Between RNCs of the Same Version
- BTS3900 WCDMA V200R013 NodeB Migration Data Reconfiguration Practice Guide

Duration

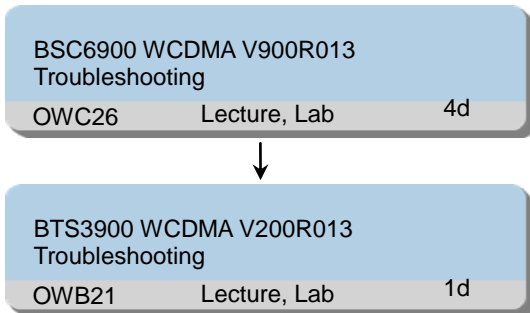
5 working days

Class Size

Min 6, Max 12

1.7.21 WCDMA RAN13.0 RAN Troubleshooting Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN13 RNC Configuration Training
- WCDMA RAN13 NodeB Training

Objectives

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

- Describe RAN troubleshooting process
- Handling Transmission Faults
- Handling Equipments Faults
- Handling O&M Faults
- Handling Basic Service Faults
- Handling NodeB Abnormal RTWP
- Handling Abnormal Downlink Power
- Handling Hardware Faults
- Handling Failure to Deliver the License of the NodeB Through M2000
- Handling Failure to Establish Cells
- Handling Sleeping Cell
- Handling OMCH Fault

Training Content

OWC26 BSC6900 WCDMA V900R013 Troubleshooting

- WCDMA RAN Signaling Flow
 - UTRAN Network Overview
 - Basic Concepts about UTRAN
 - UTRAN Signaling Procedure

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- System Information Broadcast
 - Paging
 - Call Process
 - Handover
 - BSC6900 WCDMA V900R013 Troubleshooting
 - ATM Transmission Test Methods
 - IP Transmission Test Methods
 - Transmission Faults Troubleshooting
 - E1/T1 Fault Troubleshooting
 - IMA Fault Troubleshooting
 - SAALNK Fault Troubleshooting
 - AAL2PATH Fault Troubleshooting
 - FE Fault Troubleshooting
 - SCTP Fault Troubleshooting
 - IPPATH Fault Troubleshooting
 - Equipments Faults Troubleshooting
 - MSP Switch Fault
 - Reset Fault of Interface Boards
 - O/M Faults Troubleshooting
 - OMU Service Abnormality
 - RNC Active and Standby OMUs Synchronization Failure
 - RNC OMU Command Execution Timeout
 - Basic Service Faults Troubleshooting
 - BSC6900 WCDMA V900R013 Troubleshooting Practice Guide
 - OWB21 BTS3900 WCDMA V200R013 Troubleshooting
 - BTS3900 WCDMA V200R013 Troubleshooting
 - Troubleshooting Overview
 - Abnormal RTWP
 - CE Faults
 - Hardware Faults
 - License Delivery Failure
 - Clock Faults
 - Cell Setup Failure at NodeB side
 - Sleeping Cell
 - OMCH Faults
 - BTS3900 WCDMA V200R013 Troubleshooting Practice Guide

Duration

5 working days

Class Size

Min 6, Max 12

1.7.22 WCDMA RAN12.0-RAN13.0 Product Delta Training

Training Path

WCDMA RAN12 - RAN13 Delta Training		
OWC30	Lecture	1d

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN12 RNC Configuration Training
- WCDMA RAN12 NodeB Training

Objectives

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

- Describe New hardware
- Describe some important new features
- Describe some new O/M functions
- Understand the values and benefit of the features

Training Content

OWC30 WCDMA RAN12 - RAN13 Delta Training

- WCDMA RAN13 New Features for Hardware and O/M
 - iManager M2000-CME WCDMA V200R011 New Features
 - RAN13.0 WCDMA Green NodeB Feature Description
 - RAN13.0 WCDMA NodeB Maintenance Mode
 - RAN13.0 WCDMA NodeB MML Command ChangeThe Feature of Software Management Expert
 - WRAN13.0 BSC6900 V900R013C00 DPUe Control Plane and User Plane Integration Feature Description
 - WRAN13.0 BSC6900 V900R013C00 Hardware Evolution and Capacity Expansion
 - WRAN13.0 NodeB Alarms and Inventory Management Enhancement
 - Node B Remote Self - configuration Independent
 - Demodulation of Multiple RRUs in One Cell in RAN13 version

Duration

1 working day

Class Size

Min 6, Max 12

1.7.23 WCDMA uBro3.0 Network Operation Training

Training Path

WCDMA uBro3.0 RAN Operation Maintenance		
OWF01	Lecture, Lab	5d

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of UMTS network principle

Objectives

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

- Describe interface and network architecture for WCDMA system uBro solution.
- Describe the basic principles for WCDMA system.
- Introduce the network architecture and structure of uBro solution.
- Describe the AP basic functions and interfaces.
- Describe the types of AP and hardware structure.
- Describe the accessing way and procedure of AP.
- Perform the AP commissioning and data configuration.
- Introduce the IPCLK1000 working principle and features.
- Describe the IPCLK1000 network structure.
- Describe the IPCLK1000 hardware structure.
- Perform the IPCLK1000 routine operation and maintenance, commissioning and data configuration.
- Introduce the AHR basic functions and interfaces.
- Describe the AHR network architecture.
- Describe the AHR hardware structure and typical configuration.
- Describe the AHR software structure and functions.
- Describe the AHR client routine operation and maintenance functions.
- Introduce the APM basic functions and interfaces.
- Describe the APM network architecture.
- Describe the APM hardware structure and typical configuration.
- Describe the APM software structure and functions.
- Perform the APM routine operation and maintenance on AP with client.
- Introduce M2000 basic functions.
- Describe the M2000 system architecture and functions.

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- Introduce the M2000 network for uBro solution.
 - Perform M2000 routine operation and maintenance on AP with client.

Training Content

OWF01 WCDMA uBro3.0 RAN Operation Maintenance

- Huawei uBro3.0 Solution
 - Description of the uBro Solution
 - Solution Architecture
 - Network Solution
 - Security Solution
 - Operation and Maintenance
 - Service Provisioning
- AP V300R012 Introduction
 - AP System Overview
 - AP Hardware Introduction
 - AP Typical Access Networking
 - AP Operation and Maintenance
- AP Manager V100R003 Operation and Maintenance
 - AP System Overview
 - AP Hardware Introduction
 - AP Typical Access Networking
 - AP Operation and Maintenance
- IPCLK1000 V200R003 Introduction
 - IPCLK System Overview
 - IPCLK Typical Network Mode
 - IPCLK Hardware Instruction
 - IPCLK Software Instruction
 - IPCLK Operation and Maintenance
- AHR V100R003 Operation and Maintenance
 - AHR System Overview
 - AHR Hardware Introduction
 - AHR Software Introduction
 - AHR Operation and Maintenance
- Hardware Introduction of uBro3.0 Solution
 - Cabinets and Subracks in uBro Solution
 - Signal Cables Connection in uBro Cabinets
 - VLAN Design in uBro Cabinets
 - OM VLAN Networking
 - Control VLAN Networking
 - Iuh VLAN Networking
 - CLK VLAN Networking
- M2000 V200R010 System Introduction (ATAE)

-
- AP Manager System Overview
 - AP Manager Hardware Introduction
 - AP Manager Software Introduction
 - AP Manager Operation and Maintenance
- uBro3.0 O/M Practice Guide

Duration

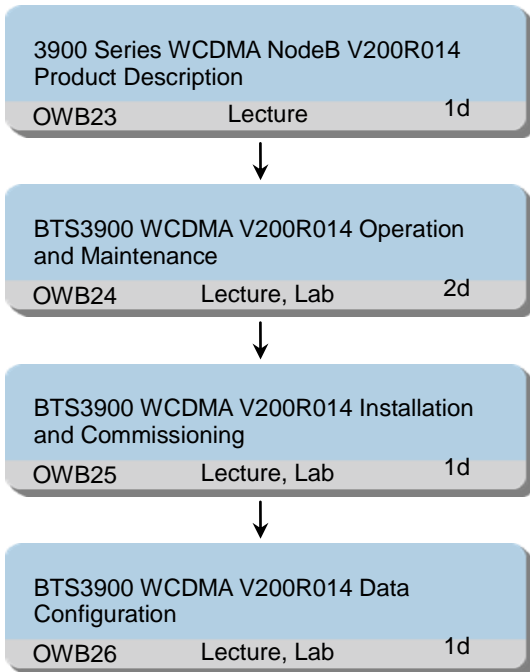
5 working days

Class Size

Min 6, Max 12

1.7.24 WCDMA RAN14.0 NodeB Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure of 3900 series NodeB
- Detail the functions of different subsystems and boards of NodeB
- Describe the cables connection of NodeB
- Describe the expansion and networking of NodeB
- Describe the structure of operation and maintenance system
- Detail routine operation of NodeB
- Detail routine maintenance of NodeB
- Detail the scenarios of NodeB commissioning
- Perform NodeB Remote commissioning
- Perform NodeB Local commissioning
- Outline NodeB data configuration procedure based on CME

-
- Complete NodeB data configuration

Training Content

OWB23 3900 Series WCDMA NodeB V200R014 Product Description

- NodeB WCDMA V200R014 Product Description
 - 3900 Series NodeB Overview
 - 3900 Series NodeB Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - BTS3900 Expansion and Networking

OWB24 BTS3900 WCDMA V200R014 Operation and Maintenance

- NodeB WCDMA V200R014 Operation and Maintenance
 - Operation and Maintenance System Overview
 - NodeB Routine Operation
 - System Management
 - Alarm Management
 - Equipment Management
 - Cell Management
 - Real-time Monitoring
 - Software Management
 - File Management
 - Tracing Management
 - NodeB Routine Maintenance
- NodeB WCDMA V200R014 Operation and Maintenance Practice Guide

OWB25 BTS3900 WCDMA V200R014 Installation and Commissioning

- NodeB WCDMA V200R014 Local Commissioning
 - NodeB System Overview
 - NodeB Installation Procedures
 - Local LMT Commissioning
 - Local USB Disk + M2000 Commissioning
- NodeB WCDMA V200R014 Local Commissioning Practice Guide
- NodeB WCDMA V200R014 Remote Commissioning
 - NodeB System Overview
 - NodeB Installation Procedures
 - Remote Commissioning Scenarios
 - Remote Commissioning on M2000
- NodeB WCDMA V200R014 Remote Commissioning Practice Guide

OWB26 BTS3900 WCDMA V200R014 Data Configuration

- NodeB WCDMA V200R014 Initial Data Configuration
 - Introduction to the CME

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- NodeB Data Configuring by GUI mode
 - NodeB Data Configuring by Iub Collaboration Mode
 - NodeB Data Consistency Check and Exporting
 - NodeB WCDMA V200R014 Initial Data Configuration Practice Guide

Duration

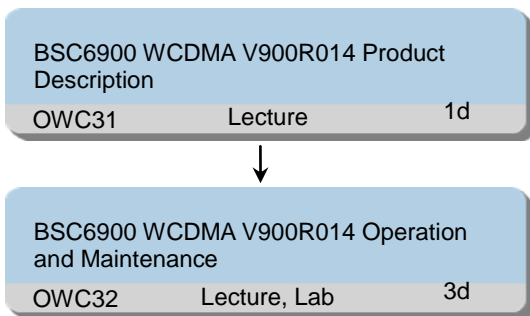
5 working days

Class Size

Min 6, Max 12

1.7.25 WCDMA RAN14.0 RNC Operation Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the system structure of BSC6900
- Detail the functions of the components of BSC6900
- Detail the signal flows in BSC6900
- List the typical hardware configuration of BSC6900
- master board replacement procedure
- replace the faulty board correctly and ensure RNC work normally.
- Set the alarm collection template, and collect the alarm by the template.
- Set the KPI collection template, and collect the KPI by the template.
- Collect the counters of board and link load by m2000, check the RNC load according to the specific threshold.
- Collect the counters of SPU subsystem by m2000
- Check the SPU subsystem performance.
- master the transmission detection methods and their operation
- Detect the transmission performance and connectivity by the transmission methods.
- Master the signaling tracing operation, collect the interface and link signaling message.
- master the procedure of handling the TOPN alarms
- Handle the common alarms according to the procedures.
- master the procedure of Backing Up and Restoring Data
- Perform the restoration of data correctly when OMU board is damaged, OMU database

collapses or the OMU upgrade fails.

Training Content

OWC31 BSC6900 WCDMA V900R014 Product Description

- BSC6900 WCDMA V900R014 Product Description
 - BSC6900 System Overview
 - BSC6900 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
 - BSC6900 Signal Flows
 - BSC6900 Typical Configuration

OWC32 BSC6900 WCDMA V900R014 Operation and Maintenance

- BSC6900 WCDMA V900R014 Operation and Maintenance Student Book
 - Alarms collection procedure and operation By M2000
 - Daily KPI collection procedure and operation
 - SPU subsystem performance counters
 - SPU performance check procedure and operation
 - RNC link and board load counter
 - collection procedure and operation of RNC link and board load counter
 - RNC board replacement procedure and operation
 - ATM/IP transmission detection method and operation
 - interface and link signaling tracing
 - TOPN alarms Handling Procedure
 - system data backup procedure and operation

Duration

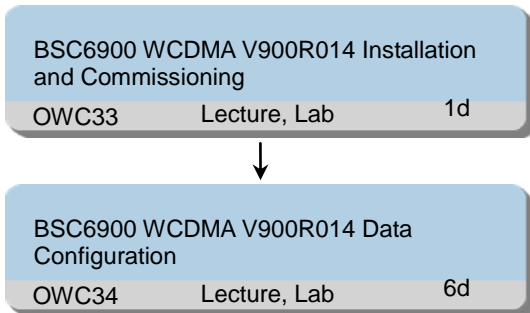
4 working days

Class Size

Min 6, Max 12

1.7.26 WCDMA RAN14.0 RNC Configuration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900 WCDMA RAN13 RNC Operation Training

Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline RNC data configuration procedure based on CME and LMT
- Complete RNC data configuration based on CME and LMT

Training Content

OWC33 BSC6900 WCDMA V900R014 Installation and Commissioning

- BSC6900 WCDMA V900R014 Commissioning
 - BSC6900 O/M System Introduction
 - BSC6900 Software Installation
 - BSC6900 Commissioning
 - BSC6900 Commissioning Introduction
 - BSC6900 Commissioning Procedure

-
- BSC6900 WCDMA V900R014 Commissioning Practice Guide
- OWC34 BSC6900 WCDMA V900R014 Data Configuration
- BSC6900 WCDMA V900R014 Initial Data Configuration Based on CME
 - Introduction of CME
 - BSC6900 Data Configuring
 - Configuration Procedure Based on CME
 - Configuring Global Data Based on CME
 - Configuring Device Data Based on CME
 - Configuring Interface Data Based on CME
 - Configuring Cell Data Based on CME
 - BSC6900 Data Exporting
 - BSC6900 WCDMA V900R014 Initial Data Configuration Based on CME Practice Guide
 - BSC6900 WCDMA V900R014 Initial Data Configuration Based on LMT
 - Data Configuration Overview
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Configuring the System Information
 - Configuring a Cabinet
 - Configuring a Subrack
 - Configuring a Board
 - Configuring the Clocks
 - Configuring the Time
 - Configuring the IP Address of the EMS Server
 - Interface Data Configuration
 - Iub Interface Data Configuration (ATM/IP)
 - Iu-CS Interface Data Configuration (ATM)
 - Iu-PS Interface Data Configuration (IP)
 - Iu-CS Interface Data Configuration (IP)
 - Iur Interface Data Configuration (ATM)
 - Iur Interface Data Configuration (IP)
 - Cell Data Configuration
 - BSC6900 WCDMA V900R014 Initial Data Configuration Based on LMT Practice Guide

Duration

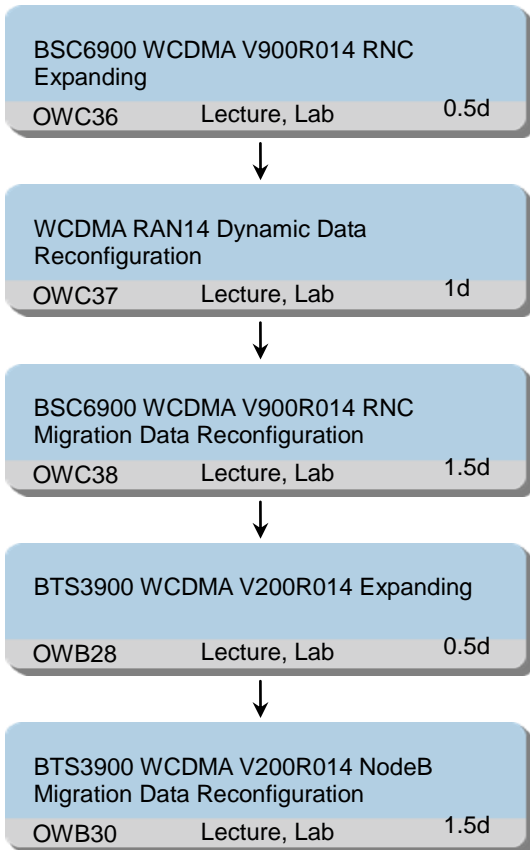
7 working days

Class Size

Min 6, Max 12

1.7.27 WCDMA RAN14.0 RAN Reconfiguration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN13 RNC Configuration Training
- WCDMA RAN13 NodeB Training

Objectives

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

- Describe the procedure of expanding the RNC capacity
- Perform how to add an RNC board
- Perform how to add an EPS
- Upon completion of this course, you will be able to:
- Perform how to Increase Frequencies on the UMTS Network
- Perform how to Reconfigure the Parameters of Physical NodeBs

-
- Perform how to Reconfigure the Data of Cells and Neighboring Cells in Batches
 - Perform how to Reconfigure Cell Algorithm Parameters
 - Describe the procedure of the RNC migration data reconfiguration
 - Perform the RNC migration data reconfiguration
 - Perform how to add WBBP Board
 - Perform how to add RF Unit
 - Upon completion of this course, you will be able to:
 - Detail the scenarios of NodeB migration data reconfiguration
 - Detail the procedure of NodeB migration data reconfiguration
 - Perform the NodeB migration data reconfiguration

Training Content

OWC36 BSC6900 WCDMA V900R014 RNC Expanding

- BSC6900 WCDMA V900R014 Expansion Based on LMT
 - Adding RNC Board
 - Adding EPS Subrack
- BSC6900 WCDMA V900R014 Expansion Based on LMT Practice Guide

OWC37 WCDMA RAN14 Dynamic Data Reconfiguration

- WCDMA RAN14 Dynamic Data Reconfiguration Based on CME
 - Introduction of CME
 - Reconfiguring Global Algorithm Parameters of the Radio Layer
 - Reconfiguring the Parameters of Physical NodeBs
 - Increasing Frequencies on the UMTS Network
 - Deleting Physical NodeBs in Batches
 - Reconfiguring the Data of Cells and Neighboring Cells in Batches
 - Reconfiguring Cell Algorithm Parameters
 - Modifying UMTS Cell Frequencies
- WCDMA RAN14 Dynamic Data Reconfiguration Based on CME Practice Guide

OWC38 BSC6900 WCDMA V900R014 RNC Migration Data Reconfiguration

- BSC6900 WCDMA V900R014 Migration Data Configuration Based on CME
 - RNC Migration Scenarios
 - Reparenting RNC Between MGWs
 - Reparenting RNC Between MSC Servers
 - Reparenting RNC Between SGSN
- BSC6900 WCDMA V900R014 Migration Data Configuration Based on CME Practice Guide

OWB28 BTS3900 WCDMA V200R014 Expanding

- NodeB WCDMA V200R014 Expansion Based on LMT
 - Adding a Baseband Board to a 3900 Series Base Station
 - Adding an RF Unit
- NodeB WCDMA V200R014 Expansion Based on LMT Practice Guide

OWB30 BTS3900 WCDMA V200R014 NodeB Migration Data Reconfiguration

- NodeB WCDMA V200R014 Migration Data Configuration Based on CME

-
- NodeB Reparenting Scenarios
 - Reparenting NodeBs Under an RNC
 - Reparenting NodeBs Between RNCs of the Same Version
 - NodeB WCDMA V200R014 Migration Data Configuration Based on CME Practice Guide

Duration

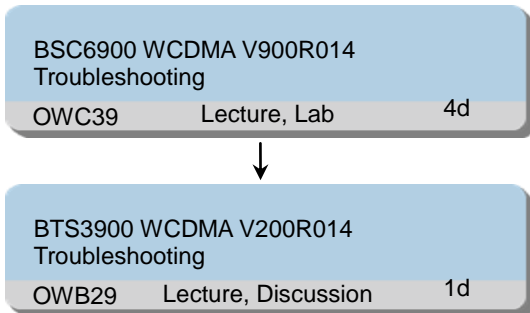
5 working days

Class Size

Min 6, Max 12

1.7.28 WCDMA RAN14.0 RAN Troubleshooting Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN13 RNC Configuration Training
- WCDMA RAN13 NodeB Training

Objectives

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

- Describe RAN troubleshooting process
- Handling Transmission Faults
- Handling Equipments Faults
- Handling O/M Faults
- Handling Basic Service Faults
- Handling NodeB Abnormal RTWP
- Handling Abnormal Downlink Power
- Handling Failure to Deliver the License of the NodeB Through M2000
- Handling Failure to Install the NodeB LMT
- Handling High Frequency Deviation (E1) of Clock
- Handling Intermittent Interruption of CPRI Link
- Handling Sleeping Cell

Training Content

OWC39 BSC6900 WCDMA V900R014 Troubleshooting

- WCDMA RAN Signaling Flow
 - UTRAN Network Overview
 - Basic Concepts about UTRAN
 - UTRAN Signaling Procedure

-
- System Information Broadcast
 - Paging
 - Call Process
 - Handover
 - BSC6900 WCDMA V900R014 Troubleshooting
 - ATM Transmission Test Methodes
 - IP Transmission Test Methodes
 - Transmission Faults Troubleshooting
 - E1/T1 Fault Troubleshooting
 - IMA Fault Troubleshooting
 - SAALNK Fault Troubleshooting
 - AAL2PATH Fault Troubleshooting
 - FE Fault Troubleshooting
 - SCTP Fault Troubleshooting
 - IPPATH Fault Troubleshooting
 - Equipments Faults Troubleshooting
 - MSP Switch Fault
 - Reset Fault of Interface Boards
 - O/M Faults Troubleshooting
 - OMU Service Abnormality
 - RNC Active and Standby OMUs Synchronization Failure
 - RNC OMU Command Execution Timeout
 - Basic Service Faults Troubleshooting
 - BSC6900 WCDMA V900R014 Troubleshooting Practice Guide
 - OWB29 BTS3900 WCDMA V200R014 Troubleshooting
 - NodeB WCDMA V200R014 Troubleshooting
 - Troubleshooting Overview
 - Abnormal RTWP
 - CE Faults
 - Hardware Faults
 - License Delivery Failure
 - Clock Faults
 - Cell Setup Failure at NodeB side
 - Sleeping Cell
 - OMCH Faults
 - NodeB WCDMA V200R014 Troubleshooting Practice Guide

Duration

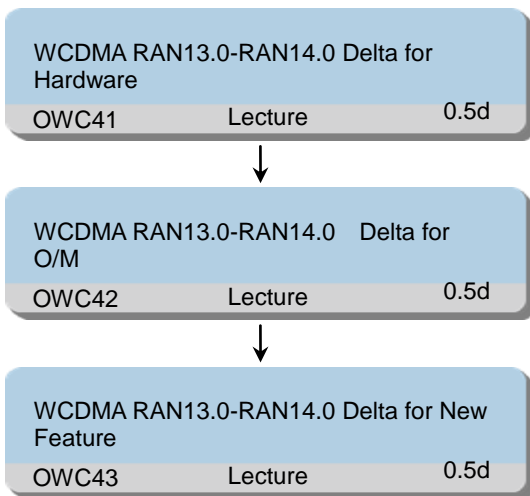
5 working days

Class Size

Min 6, Max 12

1.7.29 WCDMA RAN13.0-RAN14.0 Product Delta Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN13 RNC Configuration Training
- WCDMA RAN13 NodeB Training

Objectives

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

- Describe New hardware and the functions
- Describe some new O/M functions
- Describe some important new features
- Understand the values and benefit of the features

Training Content

OWC41 WCDMA RAN13.0-RAN14.0 Delta for Hardware

- BSC6900 WCDMA V900R013 - V900R014 Delta for Hardware
 - BSC6900 Evolution Overview and Overview
 - BSC6900 Typical Hardware Configuration
- NodeB WCDMA V200R013 - V200R014 Delta for Hardware
 - UTRPc board introduction
 - WBBPf board introduction
 - RRU 3926 introduction

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- RRU 3942 introduction
 - Micro BTS3902E introduction
- OWC42 WCDMA RAN13.0-RAN14.0 Delta for O/M
- WCDMA RAN13.0-RAN14.0 Delta for New Maintainability and Testability Feature
 - Fault management Enhancement
 - Enhancement of centralized auditing for operation logs
 - Optimization of single-user trace file naming
 - Trace creation interface optimization
 - Support for online SPC modification
 - Engineering alarm optimization
 - Enhanced IP PM introduction
 - End-to-End Deployment, Maintenance, and Commissioning
 - CME WCDMA V200R011 - V200R012 Delta
 - Support for CME configuration template upgrade
- OWC43 WCDMA RAN13.0-RAN14.0 Delta for New Feature
- WCDMA RAN13.0-RAN14.0 Delta Overview for New Feature
 - Iub/Iu/Iur Transmission Resource Pool in RNC
 - Node B security(Node B Integrated IPsec and Node B PKI Support)
 - Link aggregation enhancement
 - Multi-sectors solution
 - Intelligent battery management
 - MOCN cell recourse demarcation
 - Independent Demodulation of Signals from Multiple RRUs in One Cell

Duration

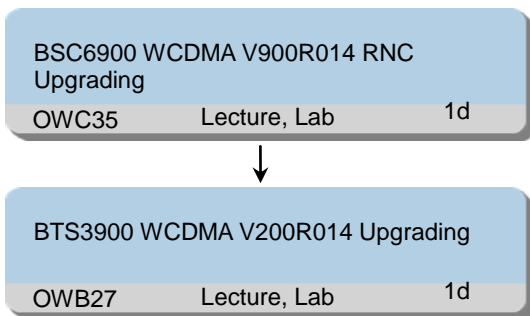
1.5 working days

Class Size

Min 6, Max 12

1.7.30 WCDMA RAN14.0 RAN Upgrade Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900 WCDMA RAN14.0 RNC Operation Training
- WCDMA RAN14.0 NodeB Training

Objectives

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

- Describe the upgrade procedure
- Describe the preparations before upgrade
- Perform how to upgrade the RNC
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade.
- Describe the upgrade procedure
- Describe the upgrade of NodeB
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade

Training Content

OWC35 BSC6900 WCDMA V900R014 RNC Upgrading

- BSC6900 WCDMA V900R014 Upgrading
 - Version requirements for upgrade
 - Upgrade Process
 - Preparations for Upgrade
 - Upgrade Operations
 - Post-Upgrade Verification and Processing
 - Version Rollback

-
- BSC6900 WCDMA V900R014 Upgrading Practice Guide

- N/A

OWB27 BTS3900 WCDMA V200R014 Upgrading

- NodeB WCDMA V200R014 Upgrading
 - NodeB Upgrade Guide based on LMT
 - NodeB Upgrade Guide based on M2000
- NodeB WCDMA V200R014 Upgrading Practice Guide

Duration

2 working days

Class Size

Min 6, Max 12

1.7.31 WCDMA RAN14.0 Emergency Maintenance Training

Training Path

WCDMA RAN14.0 Emergency Maintenance		
OWC40	Lecture	1d

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN13 RNC Configuration Training
- WCDMA RAN13 NodeB Training

Objectives

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

- Describe Brief Guide to troubleshoot emergency fault
- Collect fault information for troubleshooting
- Grasp some typical emergency faults troubleshooting
- Master basic skills for heavy traffic precaution
- Understand preparations for heavy traffic precaution
- Master parameter adjustment of heavy traffic precaution
- Deal with typical heavy traffic caused fault

Training Content

OWC40 WCDMA RAN14.0 Emergency Maintenance

- WCDMA RAN14.0 Emergency Maintenance
 - Emergency maintenance overview
 - Brief guide to troubleshoot fault
 - Learning about fault symptoms
 - Collecting fault information
 - Measures for accident recovery
 - Typical emergency fault scenarios
 - Upgrade-related Faults
 - Operation-related Faults
 - Dysfunctional Iub Interface
 - Dysfunctional Iu Interface
 - Congestion on the Iu Signaling Plane
 - UE Access Restricted by the License

-
- Low Success Rate of SCCP Connection Establishment
 - WCDMA RAN14.0 Emergency Maintenance Practice Guide
 - N/A
 - WCDMA RAN14.0 Heavy Traffic Precaution
 - General overview and basic skills introduction
 - General overview
 - Back up and restore Configuration Data
 - View the CPU Usage of SPU and DPU
 - Preparation and suggestions on parameter adjustment before a heavy traffic
 - Preparation before heavy traffic
 - Parameter adjustment before heavy traffic
 - Emergency measures for heavy traffic fault
 - Final preparations
 - CPU overload on the SPU
 - Traffic volume over an SPU subsystem is 0
 - CPU overload on the MPU
 - CPU overload on the Interface board
 - Congestion on the lu Signaling Plane
 - CN overload
 - WCDMA RAN14.0 Heavy Traffic Precaution Practice Guide

Duration

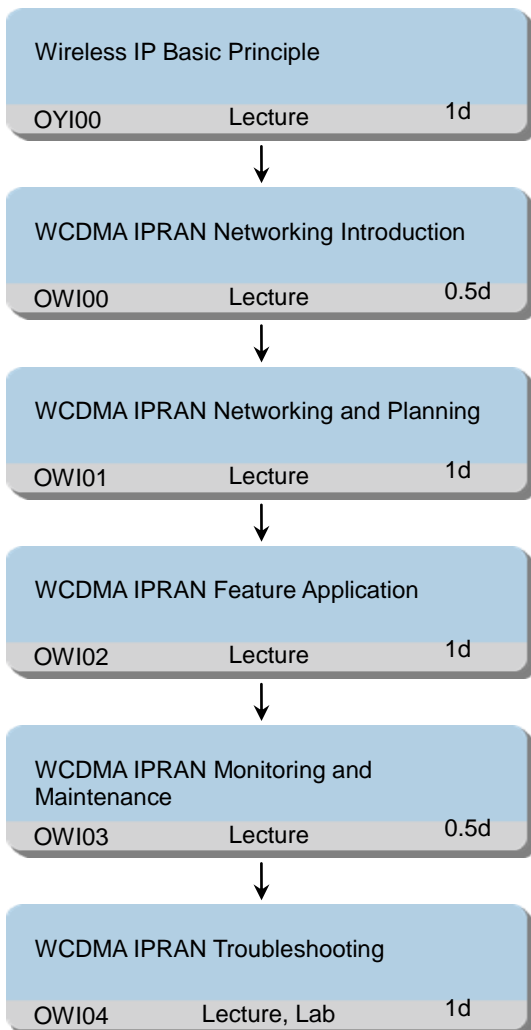
1 working day

Class Size

Min 6, Max 12

1.7.32 WCDMA IPRAN Application Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN13 RNC Configuration Training
- WCDMA RAN13 NodeB Training

Objectives

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

- Learn about IP protocol release specifications and common RFC standards
- Learn about common IP RAN concepts such as the MSTP and PTN

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- Understand the TCP/IP protocol structure, and learn common technologies such as the VLAN and DSCP
 - Learn the protocol stack composition on IP RAN interfaces
 - Learn the IP components, and understand the data exchange process
 - Be familiar with common IP RAN devices and maintenance applications
 - Learn about differences among the IP, ATM, and TDM technologies, and problems caused by IP-based networking
 - Learn about the evolution of IP RANs
 - Understand IP RAN concepts and advantages
 - Understand changes in IP RAN networking
 - Learn about feature requirements for IP RAN networking
 - Learn the detail of IP RAN MSTP networking Solution
 - Learn the detail of IP RAN PTN networking Solution
 - Understand differences between the layer 2 networking and layer 3 networking
 - Learn about the basic IP RAN resource planning.
 - Learn principles of IP address allocation and internal limitation of the RAN equipment.
 - Plan and configure the IP addresses for interface boards.
 - Learn principles of planning VLAN and how to process VLAN tags.
 - Understand data transmission between the protocol layer and the RAN equipment.
 - Understand the IP RAN reliability-ensuring implementation mechanism
 - Understand the principles and application of the reliability detection mechanism
 - Know how to configure IP RAN reliability-ensuring parameters
 - Learn about the differences in reliability guarantee in different networking scenarios
 - Master the application schemes of the reliability-ensuring mechanism in different scenarios
 - Learn the concept of IP Quality of Service (QoS)
 - Learn about radio services' QoS requirements for IP RANs
 - Understand the QoS implementation at each layer from the perspective of transmission protocols
 - Learn the QoS configuration and application in IP RANs
 - Describe the procedures of implementing QoS in IP RAN end to end (E2E) services
 - Describe the requirements of the IP RAN for clock synchronization
 - Know the differences between clock synchronization and phase synchronization
 - Learn about the typical IP RAN clock solution
 - Describe the architecture of an IP RAN clock network
 - Learn about the differences between IP RAN clock networking applications
 - Understand changes in maintenance modes due to introduction of the IP radio access network (RAN)
 - Learn the active monitoring scheme and implementation process for the IP RAN transmission
 - Learn detailed parameter configuration for IP RAN fault detect
 - Monitor IP RAN transmission links, analyze and locate the faults
 - Understand theories for IP active detection
 - Learn procedures for detecting IP faults

-
- Learn methods for locating IP faults
 - Learn about packet capturing tool for IP RANs
 - Understand the IP transmission processing
 - Understand typical IP transmission troubleshooting cases
 - Understand fault isolation in case of emergencies in IP transmission mode
 - Understand how to analyze typical IP transmission troubleshooting cases

Training Content

OYI00 Wireless IP Basic Principle

- Wireless IP Basic Principle
 - IP protocol origin
 - IP network topology structure
 - OSI model and TCP/IP protocol structure
 - IP address Introduction
 - IP subnet division and Exchange Foundation
 - IP ATM, TDM comparison

OWI00 WCDMA IPRAN Networking Introduction

- MSTP networking solution
 - IP RAN Overview
 - IP RAN Definition
 - IP RAN Advantages
 - IP RAN Feature Requirements
 - IP RAN Interface Networking
 - MSTP Networking for IP RANs
 - MSTP-based Layer 2 Networking
 - MSTP- and CE-based Layer 3 Networking
 - IP RAN Development
 - IP RAN Challenges
 - MSTP Networking Cases

- PTN networking solution
 - IP RAN Overview
 - IP RAN Definition
 - IP RAN Advantages
 - IP RAN Feature Requirements
 - IP RAN Interface Networking
 - MSTP Networking for IP RANs
 - PTN-based Layer 2 Networking
 - PTN-based Layer 3 Networking
 - IP RAN Development
 - IP RAN Challenges
 - MSTP Networking Cases

OWI01 WCDMA IPRAN Networking and Planning

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- IPRAN networking and planning
 - IP RAN Design Basics
 - IP RAN Planning Overview
 - Basic IP RAN Planning Design
 - IP RAN Resource Planning
 - IP RAN IP and Subnet Planning
 - IP RAN Route Planning
 - IP RAN VLAN Planning
 - IP RAN Internetworking Switching Process
 - IP RAN Data Switching Process
 - IP RAN Internetworking Applications
 - OWI02 WCDMA IPRAN Feature Application
 - WCDMA IPRAN reliability application
 - IP RAN Reliability Requirements and Solution Application
 - IP Bearer Reliability Requirements of Carrier-Class Networks
 - IP RAN Reliability Networking Application
 - IP RAN Reliability Schemes for Different Interfaces
 - Reliability Networking on the Iub Interface and Iub Interface
 - Reliability Networking on the Iu/Iur Interface
 - IP RAN Reliability Configuration
 - Configuring Active/Standby Boards and Active/Standby Ports
 - Configuring Route and Link Aggregation
 - BFD Configuration
 - WCDMA IPRAN QoS application
 - QoS Overview
 - Concept
 - Service Mode
 - Requirements
 - QoS Configuration and Application
 - Implementation
 - Parameter Setting
 - Transmission Efficiency Enhancement
 - E2E QoS Implementation
 - VLAN Priority Mapping and Scheduling
 - E2E QoS Implementation
 - WCDMA IPRAN Clock application
 - Requirements and Functions of IP RAN Clocks
 - Overview and Requirements of IP RAN Synchronization
 - Main IP RAN Synchronization Technologies
 - Application of IP RAN Clocks
 - Application of the IP RAN Synchronous Ethernet
 - Overview of the IP RAN IEEE 1588

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- IP RAN 1588 Clock Data Configuration
- OWI03 WCDMA IPRAN Monitoring and Maintenance
- WCDMA IPRAN Transmission monitoring
 - Overview for IP RAN O/M
 - Active Monitoring Scheme and Implementation for IP RANs
 - Disconnection Monitoring
 - Performance Monitoring
 - Active Monitoring for Common Faults in IP RANs
 - IP RAN Fault Detection Alarms
 - BFD Fault Detection Alarms
 - ETH OAM Fault Detection Alarms
 - IP PM Fault Detection Alarms
 - WCDMA IPRAN Operation and Maintenance tools
 - Overview of IP RAN Troubleshooting
 - Application of IP RAN Tools
 - Ping
 - Tracert
 - packet capturing tool

OWI04 WCDMA IPRAN Troubleshooting

- WCDMA IPRAN Troubleshooting
 - IP Transmission Troubleshooting Roadmap
 - IP Transmission Faults
 - Node B Deployment Problems
 - IPCLK Problems
 - Transmission Problems Affecting Services
 - Three Steps in IP Transmission Fault Isolation
 - Query and analyze traceroute output information.
 - Query and analyze ping output information.
 - Capture (MAC) packets.
 - Analysis of Typical IP Transmission Troubleshooting Cases
 - Typical Cases of Physical Layer Problems
 - Typical Cases of Data Link Layer Problems
 - Typical Cases of Network Layer Problems
 - Typical Cases of Transport Layer Problems
 - Typical Cases of Application Layer Problems
 - Typical Cases of DHCP Problems
- WCDMA IPRAN Troubleshooting Practice Guide
 - N/A

Duration

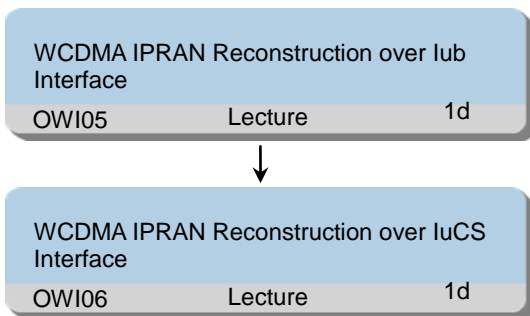
5 working days

Class Size

Min 6, Max 12

1.7.33 WCDMA IPRAN Reconstruction Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN RNC Configuration Training
- WCDMA RAN NodeB Training

Objectives

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

- Describe the background of IPRAN Reconstruction
- Understand IPRAN basic knowledge about RNC
- Understand IUB IPRAN Reconstruction policy
- Describe and perform IPRAN Reconstruction scenarios, such as ATM to IP, ATM to dual-stack, dual-stack to IP over Iub interface
- Describe the background of IPRAN Reconstruction
- Understand IPRAN basic knowledge about RNC
- Understand IPRAN networking policy
- Understand the procedure of Reconstruction in Iu-CS interface from ATM to IP

Training Content

OWI05 WCDMA IPRAN Reconstruction over Iub Interface

- BSC6900 WCDMA IPRAN Reconstruction Over Iub Interface
 - IPRAN Network Reconstruction Overview
 - IPRAN Basic Knowledge
 - Difference from ATM-based to IPRAN
 - IPRAN Network Design and Strategy for Iub Interface
 - OMCH Design and Strategy
 - Clock Synchronization Design and Strategy

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- RAN Interface Transmission Reliability Design
 - Board and Port Reliability Design
 - Iub ATM to IP Reconstruction Cases
 - Reconstruction from the ATM to the IP over the Iub Interface
 - Reconstruction from the ATM to Dual Stack over the Iub Interface
 - Reconstruction from the Dual Stack to IP over the Iub Interface
 - BSC6900 WCDMA IPRAN Reconstruction Over Iub Interface Practice Guide
- OWI06 WCDMA IPRAN Reconstruction over IuCS Interface
- BSC6900 WCDMA IPRAN Reconstruction Over Iu-CS Interface
 - IP RAN Network Overview
 - IP RAN Basic Knowledge
 - IP Network Design Policy for IuCS Interface
 - Iu-CS Interface Networking Solution
 - Board and Port Reliability Backup
 - Transport Layer Reliability
 - IuCS ATM to IP Reconstruction Solution
 - IuCS ATM to IP Reconstruction Cases
 - Reconstruction Introduction
 - Procedure of Hardware Replacement
 - Data Configuration of IP Reconstruction
 - Key Actions During IP Reconstruction
 - BSC6900 WCDMA IPRAN Reconstruction Over Iu-CS Interface Practice Guide

Duration

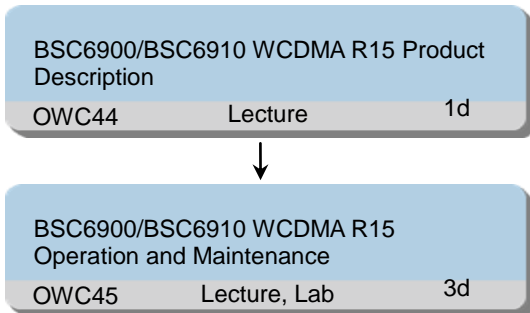
2 working days

Class Size

Min 6, Max 12

1.7.34 WCDMA RAN15.0 BSC6900/6910 Operation and Maintenance Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the system structure of BSC6900
- Detail the functions of the components of BSC6900
- Detail the signal flows in BSC6900
- List the typical hardware configuration of BSC6900
- master board replacement procedure
- replace the faulty board correctly and ensure RNC work normally.
- Set the alarm collection template, and collect the alarm by the template.
- Set the KPI collection template, and collect the KPI by the template.
- Collect the counters of board and link load by m2000, check the RNC load according to the specific threshold.
- Collect the counters of SPU subsystem by m2000
- Check the SPU subsystem performance.
- master the transmission detection methods and their operation
- Detect the transmission performance and connectivity by the transmission methods.
- Master the signaling tracing operation, collect the interface and link signaling message.
- master the procedure of handling the TOPN alarms
- Handle the common alarms according to the procedures.
- master the procedure of Backing Up and Restoring Data
- Perform the restoration of data correctly when OMU board is damaged, OMU database

collapses or the OMU upgrade fails.

Training Content

OWC44 BSC6900/BSC6910 WCDMA R15 Product Description

- BSC6900 WCDMA V900R015 Product Description
 - BSC6900/BSC6910 System Overview
 - BSC6900/BSC6910 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
 - BSC6900/BSC6910 Signal Flows
 - BSC6900/BSC6910 Typical Configuration
- BSC6910 WCDMA V100R015 Product Description
 - BSC6900/BSC6910 System Overview
 - BSC6900/BSC6910 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
 - BSC6900/BSC6910 Signal Flows
 - BSC6900/BSC6910 Typical Configuration

OWC45 BSC6900/BSC6910 WCDMA R15 Operation and Maintenance

- BSC6900/BSC6910 WCDMA V900R015 Routine Operation and Maintenance
 - Alarms collection procedure and operation By M2000
 - Daily KPI collection procedure and operation
 - SPU subsystem performance counters
 - SPU performance check procedure and operation
 - RNC link and board load counter
 - collection procedure and operation of RNC link and board load counter
 - RNC board replacement procedure and operation
 - ATM/IP transmission detection method and operation
 - interface and link signaling tracing
 - TOPN alarms Handling Procedure
 - system data backup procedure and operation
- BSC6900/BSC6910 WCDMA V900R015 Routine Operation and Maintenance Student Book
 - N/A

Duration

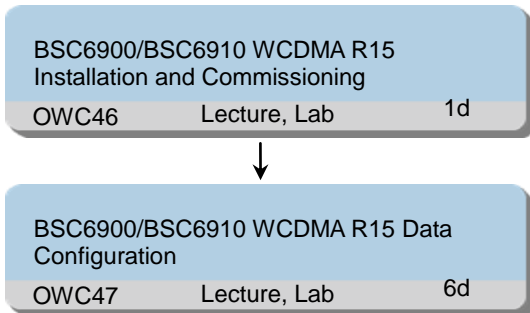
4 working days

Class Size

Min 6, Max 12

1.7.35 WCDMA RAN15.0 BSC6900/6910 Configuration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900/BSC6910 WCDMA RAN15 RNC Operation Training

Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Detail the Procedure of BSC6900/BSC6910 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline RNC data configuration procedure based on CME and LMT
- Complete RNC data configuration based on CME and LMT

Training Content

OWC46 BSC6900/BSC6910 WCDMA R15 Installation and Commissioning

- BSC6900/BSC6910 WCDMA V900R015 Installation / Commissioning
 - BSC6900/BSC6910 O/M System Introduction
 - BSC6900/BSC6910 Software Installation
 - BSC6900/BSC6910 Commissioning
 - BSC6900/BSC6910 Commissioning Introduction
 - BSC6900/BSC6910 Commissioning Procedure

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- BSC6900/BSC6910 WCDMA V900R015 Installation Practice Guide
 - BSC6900/BSC6910 WCDMA V900R015 Commissioning Practice Guide
- OWC47 BSC6900/BSC6910 WCDMA R15 Data Configuration
- BSC6900/BSC6910 WCDMA V900R015 Initial Data Configuration Based on CME
 - Introduction of CME
 - BSC6900/BSC6910 Data Configuring
 - Configuration Procedure Based on CME
 - Configuring Global Data Based on CME
 - Configuring Device Data Based on CME
 - Configuring Interface Data Based on CME
 - Cell Data Configuration
 - BSC6900 WCDMA V900R015 Initial Data Configuration Based on CME Practice Guide
 - BSC6910 WCDMA V100R015 Initial Data Configuration Based on CME Practice Guide
 - BSC6900/BSC6910 WCDMA V900R015 Initial Data Configuration Based on LMT
 - Data Configuration Overview
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Configuring the System Information
 - Configuring a Cabinet
 - Configuring a Subrack
 - Configuring a Board
 - Configuring the Clocks
 - Configuring the Time
 - Configuring the IP Address of the EMS Server
 - Interface Data Configuration
 - Iub Interface Data Configuration (ATM)
 - Iub Interface Data Configuration(IP only for BSC6900)
 - Iub Interface Data Configuration(Transmission Resource Pool)
 - Iub Interface Data Configuration(ATM/IP Dual Stack Mode)
 - Iu-CS Interface Data Configuration (ATM)
 - Iu-CS Interface Data Configuration (IP only for BSC6900)
 - Iu-CS Interface Data Configuration (Transmission Resource Pool)
 - Iu-PS Interface Data Configuration (IP only for BSC6900)
 - Iu-PS Interface Data Configuration(Transmission Resource Pool)
 - Iur Interface Data Configuration (IP only for BSC6900)
 - Iur Interface Data Configuration(Transmission Resource Pool)
 - BSC6900/BSC6910 Cell Data Configuration
 - BSC6900 WCDMA V900R015 Initial Data Configuration Based on LMT Practice Guide
 - BSC6910 WCDMA V100R015 Initial Data Configuration Based on LMT Practice Guide

Duration

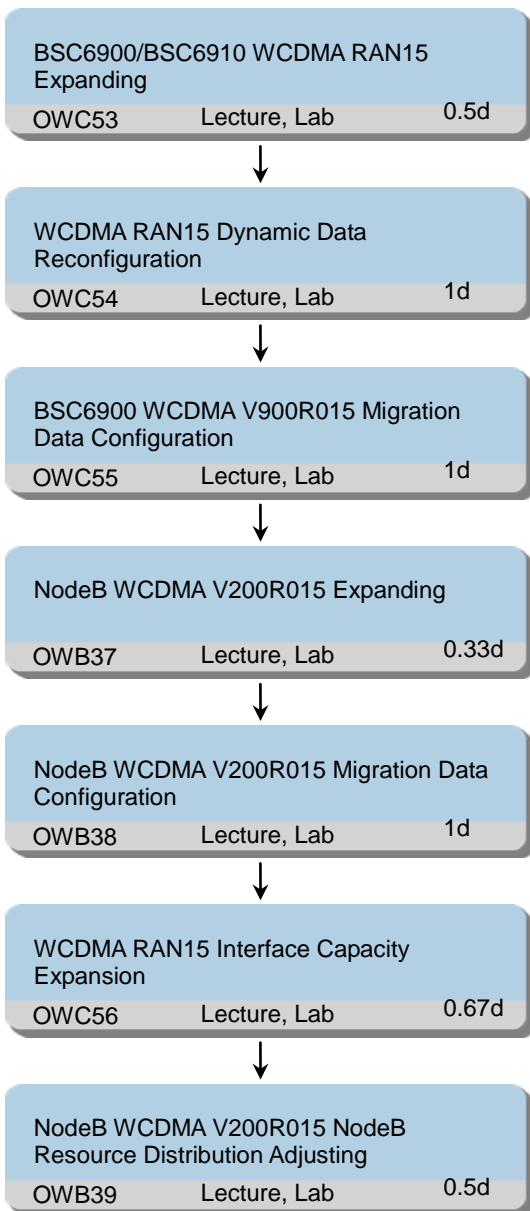
7 working days

Class Size

Min 6, Max 12

1.7.36 WCDMA RAN15.0 RAN Reconfiguration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN15 RNC Configuration Training
- WCDMA RAN15 NodeB Training

Objectives

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

- Describe the procedure of expanding the RNC capacity
- Perform how to add an RNC board
- Perform how to add an EPS
- Upon completion of this course, you will be able to:
- Perform how to Increase Frequencies on the UMTS Network
- Perform how to Reconfigure the Parameters of Physical NodeBs
- Perform how to Reconfigure the Data of Cells and Neighboring Cells in Batches
- Perform how to Reconfigure Cell Algorithm Parameters
- Describe the procedure of the RNC migration data reconfiguration
- Perform the RNC migration data reconfiguration
- Perform how to add WBBP Board
- Perform how to add RF Unit
- Upon completion of this course, you will be able to:
- Detail the scenarios of NodeB migration data reconfiguration
- Detail the procedure of NodeB migration data reconfiguration
- Perform the NodeB migration data reconfiguration
- Upon completion of this course, you will be able to:
- Detail the scenarios of Interface Capacity Expansion
- Detail the procedure of Interface Capacity Expansion
- Perform the Iub/Iur/Iu Capacity Expansion in different transmission Mode
- Upon completion of this course, you will be able to:
- Detail the scenarios of NodeB Resource Distribution Adjustment
- Detail the procedure of NodeB Resource Distribution Adjustment
- Perform the NodeB/cell/NCP/CCP Resource Distribution Adjustment

Training Content

OWC53 BSC6900/BSC6910 WCDMA RAN15 Expanding

- BSC6900/BSC6910 WCDMA RAN15 Expansion Based on LMT
 - Overview of Expanding the RNC Capacity
 - Adding a SPUa or SPUb Board for BSC6900
 - Adding a DPUb or DPUe Board for BSC6900
 - Adding an EGPUa Board for BSC6910
 - Adding an Interface Board
 - Adding a Subrack
- BSC6900/BSC6910 WCDMA RAN15 Expansion Based on LMT Practice Guide
 - N/A

OWC54 WCDMA RAN15 Dynamic Data Reconfiguration

- WCDMA RAN15 Dynamic Data Reconfiguration Based on CME
 - Changing Signaling Points
 - Reconfiguring a Cell

-
- Modifying an SCCPCH
 - Configuring Neighboring Cells
 - Reconfiguring the NodeB Clock Source or the Clock Working Mode
 - WCDMA RAN15 Dynamic Data Reconfiguration Based on CME Practice Guide
 - N/A
 - OWC55 BSC6900 WCDMA V900R015 Migration Data Configuration
 - BSC6900 WCDMA V900R015 Migration Data Configuration Based on LMT
 - RNC Migration Scenarios
 - Adjusting the Connection Between the RNC and MSC (ATM to IP over the lu-CS interface)
 - Adjusting the Connection Between the RNC and MSC Without Changing the ATM Transmission Scheme on the lu-CS Interface)
 - Adjusting the Connection Between the RNC and MSC (ATM to IP over the lu-CS Interface)
 - BSC6900 WCDMA V900R015 Migration Data Configuration Based on LMT Practice Guide
 - OWB37 NodeB WCDMA V200R015 Expanding
 - NodeB WCDMA V200R015 Expansion Based on CME
 - Adding a Baseband Board to a 3900 Series Base Station
 - Adding an RF Unit
 - NodeB WCDMA V200R015 Expansion Based on CME Practice Guide
 - OWB38 NodeB WCDMA V200R015 Migration Data Configuration
 - NodeB WCDMA V200R015 Migration Data Configuration Based on CME (Only for BSC6900)
 - NodeB Reparenting Scenarios
 - Reparenting NodeBs Under an RNC
 - Reparenting NodeBs Between RNCs of the Same Version
 - NodeB WCDMA V200R015 Migration Data Configuration Based on CME Practice Guide (Only for BSC6900)
 - OWC56 WCDMA RAN15 Interface Capacity Expansion
 - WCDMA RAN15 Interface Capacity Expansion Based on LMT
 - Iub Interface Capacity Expansion
 - Iub Interface Capacity Expansion in ATM Transmission Mode
 - Iub Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iub Interface Capacity Expansion IP Pool
 - Iur Interface Capacity Expansion
 - Iur Interface Capacity Expansion in ATM Transmission Mode
 - Iur Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iur Interface Capacity Expansion IP Pool
 - Iu-CS Interface Capacity Expansion
 - Iu-CS Interface Capacity Expansion in ATM Transmission Mode
 - Iu-CS Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iu-CS Interface Capacity Expansion IP Pool
 - Iu-PS Interface Capacity Expansion

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- Iu-PS Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iu-PS Interface Capacity Expansion IP Pool
 - WCDMA RAN15 Interface Capacity Expansion Based on LMT Practice Guide
- OWB39 NodeB WCDMA V200R015 NodeB Resource Distribution Adjusting
- NodeB WCDMA V200R015 NodeB Resource Distribution Adjusting Based on LMT (Only for BSC6900)
 - Reconfiguring resource management based on NodeBs
 - Reconfiguring resource management based on cells
 - Reconfiguring resource management based on NCPs or CCPs
 - NodeB WCDMA V200R015 NodeB Resource Distribution Adjusting Based on LMT Practice Guide (Only for BSC6900)

Duration

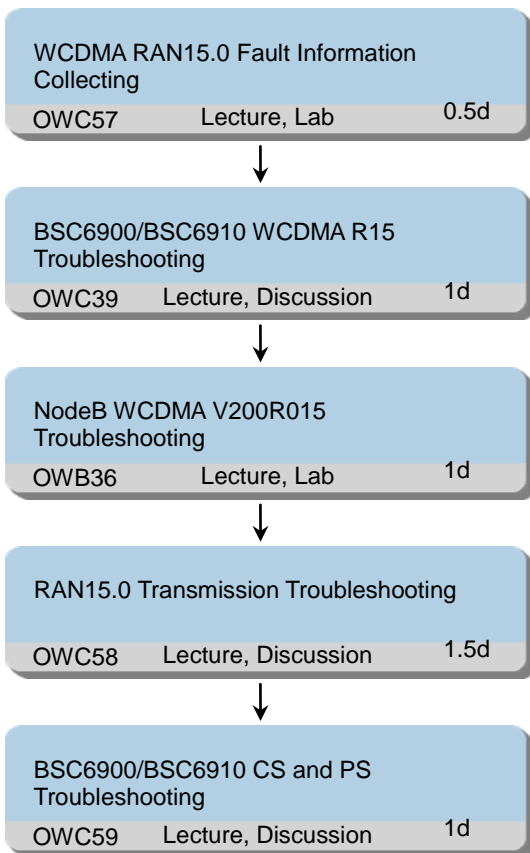
5 working days

Class Size

Min 6, Max 12

1.7.37 WCDMA RAN15.0 RAN Troubleshooting Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN15 RNC Configuration Training
- WCDMA RAN15 NodeB Training

Objectives

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

- Describe the OMU Maintenance and Operation
- Know how to collect the fault information for different faults
- Know how to handle RNC equipment-related faults
- Know how to handle NodeB-related faults
- Know how to handle ATM Transmission Faults
- Know how to handle IP Transmission Faults

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- Describe the CS and PS Fault Troubleshooting flow
 - Know how to handle CS and PS faults

Training Content

OWC57 WCDMA RAN15.0 Fault Information Collecting

- WCDMA RAN15.0 Fault Information Collecting
 - OMU Overview
 - Accident information collecting
 - WRAN problems information collecting
 - HSPA Rate Problems
 - Voice Quality Problems
 - Cell Flow Problems
 - RNC Fault information collecting
 - Equipment Problems
 - Traffic Problems
 - Upgrade Problems
 - Loading Problems
 - NodeB Fault information collecting
 - RTWP Problems
 - License CE Problems
 - Clock Problems
 - Hardware and OM Problems
 - RF Problems
- WCDMA RAN15.0 Fault Information Collecting Student Book

OWC39 BSC6900/BSC6910 WCDMA R15 Troubleshooting

- BSC6900/BSC6910 WCDMA R15 Troubleshooting
 - OMU Service Abnormality
 - Equipment Troubleshooting
 - Service Setup Failure Troubleshooting
 - PS Relocation and Inter-RAT Handover Failure Troubleshooting
- BSC6900/BSC6910 WCDMA R15 Troubleshooting Student Book

OWB36 NodeB WCDMA V200R015 Troubleshooting

- NodeB WCDMA V200R015 Troubleshooting
 - RTWP Fault
 - CE Fault
 - Clock Reference Fault
 - CPRI Link Fault
 - RF Channel Failure
- NodeB WCDMA V200R015 Troubleshooting Student Book

OWC58 RAN15.0 Transmission Troubleshooting

- RAN15.0 Transmission Troubleshooting
 - ATM Transmission Faults Troubleshooting

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- ATM QoS Faults
 - E1/T1 Faults
 - IMA Faults
 - SAAL Faults
 - IP Transmission Faults Troubleshooting
 - FE/GE Transmission Fault
 - IP Layer Fault
 - Signaling Link Fault
 - User Plane Fault
 - IP Clock Fault
 - RAN15.0 Transmission Troubleshooting Student Book
- OWC59 BSC6900/BSC6910 CS and PS Troubleshooting
- BSC6900/BSC6910 PS Troubleshooting
 - HSPA+ and HSPA Data Transmission
 - HSUPA Data Transmission Fault Analysis
 - HSDPA Data Transmission Fault
 - Cell Setup Failure
 - BSC6900/BSC6910 PS Troubleshooting Student Book

Duration

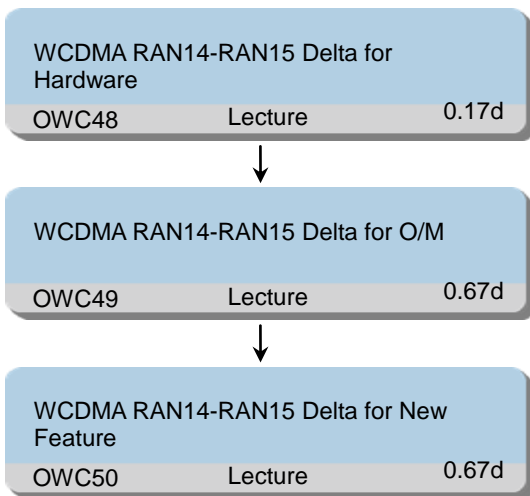
5 working days

Class Size

Min 6, Max 12

1.7.38 WCDMA RAN14.0-RAN15.0 Product Delta Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN15 RNC Configuration Training
- WCDMA RAN15 NodeB Training

Objectives

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

- Describe New hardware and the functions
- Describe new O/M functions
- Describe important new features
- Understand the values and benefit of the features

Training Content

OWC48 WCDMA RAN14-RAN15 Delta for Hardware

- BSC6900/BSC6910 WCDMA RAN14-RAN15 Delta for Hardware
 - BSC6900/BSC6910 Evolution Overview and Overview
 - New RNC Platform: BSC6910
 - BSC6900/BSC6910 Hardware and Capacity Expansion
 - BSC6900/BSC6910 Typical Hardware Configuration
- NodeB WCDMA V200R014 - V200R015 Delta for Hardware
 - New NodeB Hardware - WRFU (100W)

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- Micro NodeB- BTS3803E
- OWC49 WCDMA RAN14-RAN15 Delta for O/M
- WCDMA RAN14.0-RAN15.0 Delta for New Maintainability and Testability Feature
 - Enhanced Single-User Signaling Tracing During RRC Connection Setup
 - Trace of UEs Belonging to a Certain Type
 - Automatic Detection of Optical Power and Alarm Reporting
 - Enhanced Crossed Pair Connection Detection
 - New NUV Transmission Counters
 - Cell Out of Service Alarm Masked at the Cell Level
 - Enhanced OMU Maintenance and Test
 - Remote Deployment Optimization: DHCP Trace
 - DSCP Value Change Detection
 - CME WCDMA V200R012 - V200R013 Delta
 - Fallback Based on Data Comparison
 - Base Station Template Division
 - Batch Base Station Reconfiguration
 - Iub Data Planning File Changed to Summary Data File
 - NodeB MO difference of Maintenance and Configuration between R14.0 and R15.0
 - Transmission MO Change
 - Baseband resources MO Change
 - Carrier MO Change
 - Endpoint Mode for Transmission Data Configuration
- OWC50 WCDMA RAN14-RAN15 Delta for New Feature
- WCDMA RAN14.0-RAN15.0 Delta for New Feature
 - RNC in Pool Load Sharing
 - RNC in Pool Node Redundancy
 - MOCN Independent Iub Transmission Resource Allocation
 - MOCN Independent CE Resource Allocation
 - Enhanced Backup Power Saving

Duration

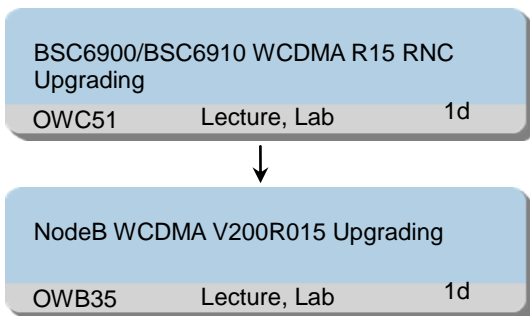
1.5 working days

Class Size

Min 6, Max 12

1.7.39 WCDMA RAN15.0 RAN Patch Upgrade Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900/BSC6910 WCDMA RAN15 RNC Operation Training
- WCDMA RAN15 NodeB Training

Objectives

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

- Describe the upgrade procedure
- Describe the preparations before upgrade
- Perform how to upgrade the RNC
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade.
- Describe the upgrade procedure
- Perform the upgrade of NodeB
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade

Training Content

OWC51 BSC6900/BSC6910 WCDMA R15 RNC Upgrading

- BSC6900 WCDMA V900R015 Upgrading
 - Version requirements for upgrade
 - Upgrade Process
 - Preparations for Upgrade
 - Upgrade Operations
 - Post-Upgrade Verification and Processing
 - Version Rollback

-
- BSC6900 WCDMA V900R015 Upgrading Practice Guide
- OWB35 NodeB WCDMA V200R015 Upgrading
- NodeB WCDMA V200R015 Upgrading
 - NodeB Upgrade Guide based on LMT
 - NodeB Upgrade Guide based on M2000
 - NodeB Upgrade Guide based on SME
 - NodeB WCDMA V200R015 Upgrading Practice Guide

Duration

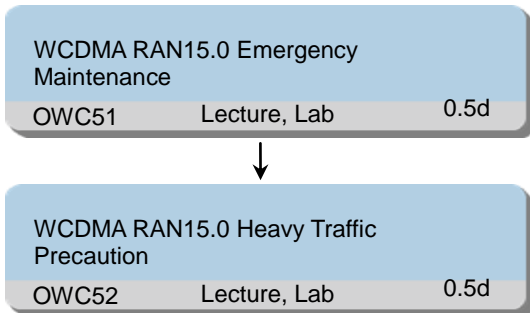
2 working days

Class Size

Min 6, Max 12

1.7.40 WCDMA RAN15.0 Emergency Maintenance Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN15 RNC Configuration Training
- WCDMA RAN15 NodeB Training

Objectives

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

- Describe Brief Guide to troubleshoot emergency fault
- Collect fault information for troubleshooting
- Grasp some typical emergency faults troubleshooting
- Master basic skills for heavy traffic precaution
- Understand preparations for heavy traffic precaution
- Master parameter adjustment of heavy traffic precaution
- Deal with typical heavy traffic caused fault
- Describe Brief Guide to troubleshoot emergency fault
- Collect fault information for troubleshooting
- Grasp some typical emergency faults troubleshooting
- Master basic skills for heavy traffic precaution
- Understand preparations for heavy traffic precaution
- Master parameter adjustment of heavy traffic precaution
- Deal with typical heavy traffic caused fault

Training Content

OWC51 WCDMA RAN15.0 Emergency Maintenance

- WCDMA RAN15.0 Emergency Maintenance
 - Emergency maintenance overview

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- Brief guide to troubleshoot fault
 - Learning about fault symptoms
 - Collecting fault information
 - Measures for accident recovery
 - Typical emergency fault scenarios
 - Upgrade-related Faults
 - Operation-related Faults
 - Dysfunctional Iub Interface
 - Dysfunctional Iu Interface
 - Congestion on the Iu Signaling Plane
 - UE Access Restricted by the License
 - Low Success Rate of SCCP Connection Establishment
 - WCDMA RAN15.0 Emergency Maintenance Practice Guide
- OWC52 WCDMA RAN15.0 Heavy Traffic Precaution
- WCDMA RAN15.0 Heavy Traffic Precaution
 - The overview of the heavy traffic precaution
 - Pre-Festival network evaluation and expansion
 - Important KPIs
 - General overview and basic skills introduction
 - General overview
 - Back up and restore Configuration Data
 - View the CPU Usage of SPU and DPU
 - Preparation and suggestions on parameter adjustment before a heavy traffic
 - Preparation before heavy traffic
 - Parameter adjustment before heavy traffic
 - Emergency measures for heavy traffic fault
 - Final preparations
 - CPU overload on the SPU
 - Traffic volume over an SPU subsystem is 0
 - CPU overload on the MPU
 - CPU overload on the Interface board
 - Congestion on the Iu Signaling Plane
 - CN overload
 - WCDMA RAN15.0 Heavy Traffic Precaution Practice Guide

Duration

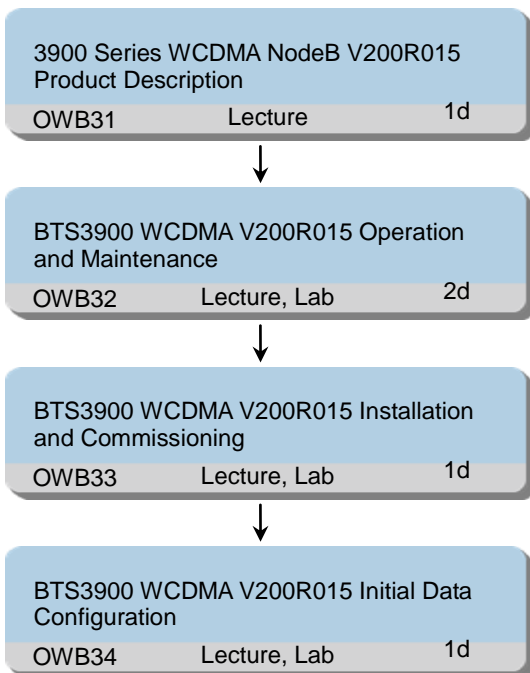
1 working day

Class Size

Min 6, Max 12

1.7.41 WCDMA RAN15.0 NodeB Operation and Maintenance Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure of 3900 series NodeB
- Detail the functions of different subsystems and boards of NodeB
- Describe the cables connection of NodeB
- Describe the expansion and networking of NodeB
- Grasp the hardware structure of MBTS
- Grasp the BTS local maintenance
- Maintain site on local terminal
- Execute the tasks of field maintenance
- Describe the structure of operation and maintenance system
- Grasp alarm operation by M2000
- Perform MBTS Device maintenance

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- Grasp the operation of Transport connectivity and performance Test
 - Grasp check of Transport Link
 - Perform operation of Carrier Resource CELL
 - Grasp the operation of MBTS Tracing Management
 - Grasp the operation of MBTS Monitoring Management
 - Perform Right, log and License Management
 - Understand the MBTS installation procedure
 - Detail the scenarios of NodeB commissioning
 - Understand the process of Automatic OMCH Establishment
 - Understand the Procedure based on different scenarios
 - Perform NodeB commissioning based on M2000 (PnP)
 - Perform NodeB commissioning based on USB+M2000
 - Perform NodeB commissioning based on LMT+M2000
 - Understand CME process
 - Outline NodeB data configuration procedure based on CME
 - Perform single NodeB data configuration
 - Perform NodeBs data configuration in batch

Training Content

OWB31 3900 Series WCDMA NodeB V200R015 Product Description

- NodeB WCDMA V200R015 Product Description
 - 3900 Series NodeB Overview
 - 3900 Series NodeB Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - BTS3900 Expansion and Networking

OWB32 BTS3900 WCDMA V200R015 Operation and Maintenance

- NodeB WCDMA V200R015 Field Operation and Maintenance
 - Checking hardware
 - LEDs
 - Cable connections
 - Site local maintenance
 - Replacing boards
 - Routine maintenance list
- NodeB WCDMA V200R015 Field Operation and Maintenance Practice Guide
- NodeB WCDMA V200R015 Operation and Maintenance
 - Connecting to BTS O/M System
 - Alarm Management by M2000
 - MBTS Device maintenance
 - Hardware maintenance via M2000

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- Hardware Maintenance via LMT
 - Software and File Management
 - clock maintenance
 - Antenna Test
 - MBTS Transmission Layer Maintenance
 - Transport connectivity and performance Test
 - Transport Link Maintenance
 - MBTS Radio Layer maintenance
 - Basic Concept
 - Carrier Resource Management
 - CELL Management
 - MBTS Tracing Management
 - MBTS Monitoring Management
 - MBTS System Management
 - Right Management
 - Log Management
 - License Management
 - NodeB WCDMA V200R015 Operation and Maintenance Practice Guide
- OWB33 BTS3900 WCDMA V200R015 Installation and Commissioning
- NodeB WCDMA V200R015 Hardware Installation
 - MBTS System Overview
 - MBTS Installation Procedures
 - Installing the Cabinet
 - Install the PGND cable
 - Installing Power / Transmission Cables
 - Installing the Input Power Cable for the Cabinet
 - Installation Checklist
 - NodeB WCDMA V200R015 Commissioning
 - the scenarios of NodeB commissioning
 - the process of Automatic OMCH Establishment
 - NodeB commissioning Procedure based on M2000 (PnP)
 - NodeB commissioning Procedure based on USB+M2000
 - NodeB commissioning Procedure based on LMT+M2000
 - NodeB WCDMA V200R015 Commissioning Practice Guide
 - N/A
- OWB34 BTS3900 WCDMA V200R015 Initial Data Configuration
- NodeB WCDMA V200R015 Initial Data Configuration
 - Introduction to the CME
 - Configuring a Single NodeB
 - Configuring NodeBs in batch by using a summary data file
 - NodeB Data Consistency Check and Exporting
 - NodeB WCDMA V200R015 Initial Data Configuration Practice Guide

Duration

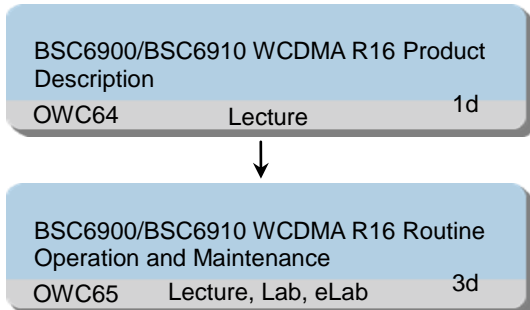
5 working days

Class Size

Min 6, Max 1

1.7.42 WCDMA RAN16.0 BSC6900/6910 Operation and Maintenance Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the system structure of BSC6900
- Detail the functions of the components of BSC6900
- Detail the signal flows in BSC6900
- List the typical hardware configuration of BSC6900
- Master board replacement procedure
- Replace the faulty board correctly and ensure RNC work normally
- Set the alarm collection template, and collect the alarm by the template
- Set the KPI collection template, and collect the KPI by the template
- Collect the counters of board and link load by U2000, check the RNC load according to the specific threshold
- Collect the counters of SPU subsystem by U2000
- Check the SPU subsystem performance
- master the transmission detection methods and their operation
- Detect the transmission performance and connectivity by the transmission methods
- Master the signaling tracing operation, collect the interface and link signaling message
- master the procedure of handling the TOPN alarms
- Handle the common alarms according to the procedures
- master the procedure of Backing Up and Restoring Data
- Perform the restoration of data correctly when OMU board is damaged, OMU database

collapses, or the OMU upgrade fails

Training Content

OWC64 BSC6900/BSC6910 WCDMA R16 Product Description

- BSC6900 WCDMA V900R016 Product Description
 - BSC6900/BSC6910 System Overview
 - BSC6900/BSC6910 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
 - BSC6900/BSC6910 Signal Flows
 - BSC6900/BSC6910 Typical Configuration
- BSC6910 WCDMA V100R016 Product Description
 - BSC6900/BSC6910 System Overview
 - BSC6900/BSC6910 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
 - BSC6900/BSC6910 Signal Flows
 - BSC6900/BSC6910 Typical Configuration

OWC65 BSC6900/BSC6910 WCDMA R16 Operation and Maintenance

- BSC6900/BSC6910 WCDMA V900R016 Routine Operation and Maintenance
 - Alarms collection procedure and operation By U2000
 - Daily KPI collection procedure and operation
 - SPU subsystem performance counters
 - SPU performance check procedure and operation
 - RNC link and board load counter
 - collection procedure and operation of RNC link and board load counter
 - RNC board replacement procedure and operation
 - ATM/IP transmission detection method and operation
 - interface and link signaling tracing
 - TOPN alarms Handling Procedure
 - system data backup procedure and operation
- BSC6900/BSC6910 WCDMA V900R016 Routine Operation and Maintenance Student Book

Duration

4 working days

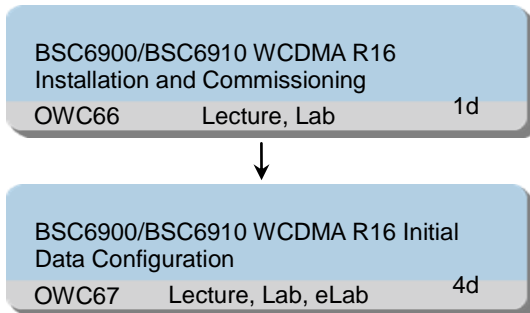
Class Size

Min 6, max 12

Training Timetable(Optional)

1.7.43 WCDMA RAN16.0 BSC6900/6910 Configuration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900/BSC6910 WCDMA RAN16 RNC Operation Training

Objectives

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

- Describe BSC6900/BSC6910 commissioning procedure
- Outline OMU software functions
- Complete BSC6900/BSC6910 commissioning
- Complete BSC6900/BSC6910 application software installation
- Detail the Procedure of BSC6900/BSC6910 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline RNC data configuration procedure based on CME and LMT
- Complete RNC data configuration based on CME and LMT

Training Content

OWC66 BSC6900/BSC6910 WCDMA R16 Installation and Commissioning

- BSC6900/BSC6910 WCDMA V900R016 Installation / Commissioning
 - BSC6900/BSC6910 O/M System Introduction
 - BSC6900/BSC6910 Software Installation
 - BSC6900/BSC6910 Commissioning
 - BSC6900/BSC6910 Commissioning Introduction
 - BSC6900/BSC6910 Commissioning Procedure

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- BSC6900/BSC6910 WCDMA V900R016 Installation Practice Guide
 - BSC6900/BSC6910 WCDMA V900R016 Commissioning Practice Guide
- OWC67 BSC6900/BSC6910 WCDMA R16 Data Configuration
- BSC6900/BSC6910 WCDMA V900R016 Initial Data Configuration Based on CME
 - Introduction of CME
 - BSC6900/BSC6910 Data Configuring
 - Configuration Procedure Based on CME
 - Configuring Global Data Based on CME
 - Configuring Device Data Based on CME
 - Configuring Interface Data Based on CME
 - Cell Data Configuration
 - BSC6900 WCDMA V900R016 Initial Data Configuration Based on CME Practice Guide
 - BSC6910 WCDMA V100R016 Initial Data Configuration Based on CME Practice Guide
 - BSC6900/BSC6910 WCDMA V900R016 Initial Data Configuration Based on LMT
 - Data Configuration Overview
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Configuring the System Information
 - Configuring a Cabinet
 - Configuring a Subrack
 - Configuring a Board
 - Configuring the Clocks
 - Configuring the Time
 - Configuring the IP Address of the EMS Server
 - Interface Data Configuration
 - Iub Interface Data Configuration (ATM)
 - Iub Interface Data Configuration(IP only for BSC6900)
 - Iub Interface Data Configuration(Transmission Resource Pool)
 - Iub Interface Data Configuration(ATM/IP Dual Stack Mode)
 - Iu-CS Interface Data Configuration (ATM)
 - Iu-CS Interface Data Configuration (IP only for BSC6900)
 - Iu-CS Interface Data Configuration (Transmission Resource Pool)
 - Iu-PS Interface Data Configuration (IP only for BSC6900)
 - Iu-PS Interface Data Configuration(Transmission Resource Pool)
 - Iur Interface Data Configuration (IP only for BSC6900)
 - Iur Interface Data Configuration(Transmission Resource Pool)
 - BSC6900/BSC6910 Cell Data Configuration
 - BSC6900 WCDMA V900R016 Initial Data Configuration Based on LMT Practice Guide
 - BSC6910 WCDMA V100R016 Initial Data Configuration Based on LMT Practice Guide

Duration

5 working days

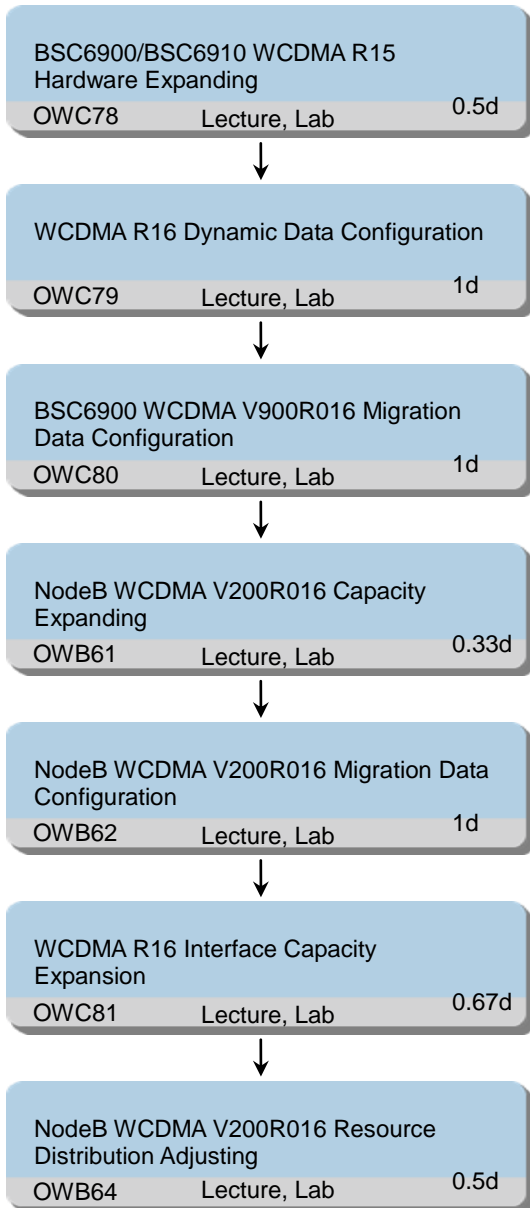
Class Size

Min 6, max 12

Training Timetable(Optional)

1.7.44 WCDMA RAN16.0 RAN Reconfiguration Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN16 RNC Configuration Training
- WCDMA RAN16 NodeB Training

Objectives

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

- Describe the procedure of expanding the RNC capacity
- Perform how to add an RNC board
- Perform how to add an EPS
- Upon completion of this course, you will be able to:
- Perform how to Increase Frequencies on the UMTS Network
- Perform how to Reconfigure the Parameters of Physical NodeBs
- Perform how to Reconfigure the Data of Cells and Neighboring Cells in Batches
- Perform how to Reconfigure Cell Algorithm Parameters
- Describe the procedure of the RNC migration data reconfiguration
- Perform the RNC migration data reconfiguration
- Perform how to add WBBP Board
- Perform how to add RF Unit
- Detail the scenarios of NodeB migration data reconfiguration
- Detail the procedure of NodeB migration data reconfiguration
- Perform the NodeB migration data reconfiguration
- Upon completion of this course, you will be able to:
- Detail the scenarios of Interface Capacity Expansion
- Detail the procedure of Interface Capacity Expansion
- Perform the Iub/Iur/Iu Capacity Expansion in different transmission Mode

Training Content

OWC78 BSC6900/BSC6910 WCDMA RAN16 Expanding

- BSC6900/BSC6910 WCDMA RAN16 Expansion Based on LMT
 - Overview of Expanding the RNC Capacity
 - Adding a SPUa or SPUB Board for BSC6900
 - Adding a DPUb or DPUE Board for BSC6900
 - Adding an EGPUa Board for BSC6910
 - Adding an Interface Board
 - Adding a Subrack
- BSC6900/BSC6910 WCDMA RAN16 Expansion Based on LMT Practice Guide

OWC79 WCDMA RAN16 Dynamic Data Reconfiguration

- WCDMA RAN16 Dynamic Data Reconfiguration Based on CME
 - Changing Signaling Points
 - Reconfiguring a Cell
 - Modifying an SCCPCH
 - Reconfiguring Neighboring Cells
 - Reconfiguring the NodeB Clock Source or the Clock Working Mode
- WCDMA RAN16 Dynamic Data Reconfiguration Based on CME Practice Guide

OWC80 BSC6900 WCDMA V900R016 Migration Data Configuration

- BSC6900 WCDMA V900R016 Migration Data Configuration Based on LMT

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- RNC Migration Scenarios
 - Adjusting the Connection Between the RNC and MSC (IP to IP over the Iu-CS interface)
 - Adjusting the Connection Between the RNC and MSC Without Changing the ATM Transmission Scheme on the Iu-CS Interface)
 - Adjusting the Connection Between the RNC and MSC (ATM to IP over the Iu-CS Interface)
 - BSC6900 WCDMA V900R016 Migration Data Configuration Based on LMT Practice Guide
- OWB61 NodeB WCDMA V200R016 Expanding
- NodeB WCDMA V200R016 Expansion Based on CME
 - Adding a Baseband Board to a 3900 Series Base Station
 - Adding an RF Unit
 - NodeB WCDMA V200R016 Expansion Based on CME Practice Guide
- OWB62 NodeB WCDMA V200R016 Migration Data Configuration
- NodeB WCDMA V200R016 Migration Data Configuration Based on CME (Only for BSC6900)
 - NodeB Reparenting Scenarios
 - Reparenting NodeBs Under an RNC
 - Reparenting NodeBs Between RNCs of the Same Version
 - NodeB WCDMA V200R016 Migration Data Configuration Based on CME Practice Guide (Only for BSC6900)
- OWC81 WCDMA RAN16 Interface Capacity Expansion
- WCDMA RAN15 Interface Capacity Expansion Based on LMT
 - Iub Interface Capacity Expansion
 - Iub Interface Capacity Expansion in ATM Transmission Mode
 - Iub Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iub Interface Capacity Expansion IP Pool
 - Iur Interface Capacity Expansion
 - Iur Interface Capacity Expansion in ATM Transmission Mode
 - Iur Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iur Interface Capacity Expansion IP Pool
 - Iu-CS Interface Capacity Expansion
 - Iu-CS Interface Capacity Expansion in ATM Transmission Mode
 - Iu-CS Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iu-CS Interface Capacity Expansion IP Pool
 - Iu-PS Interface Capacity Expansion
 - Iu-PS Interface Capacity Expansion in IP Transmission Mode for BSC6900
 - Iu-PS Interface Capacity Expansion IP Pool
 - WCDMA RAN16 Interface Capacity Expansion Based on LMT Practice Guide
- OWB64 NodeB WCDMA V200R016 NodeB Resource Distribution Adjusting
- NodeB WCDMA V200R016 NodeB Resource Distribution Adjusting Based on LMT (Only for BSC6900)
 - Reconfiguring resource management based on NodeBs

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- Reconfiguring resource management based on cells
 - Reconfiguring resource management based on NCPs or CCPs
 - NodeB WCDMA V200R016 NodeB Resource Distribution Adjusting Based on LMT Practice Guide (Only for BSC6900)

Duration

5 working days

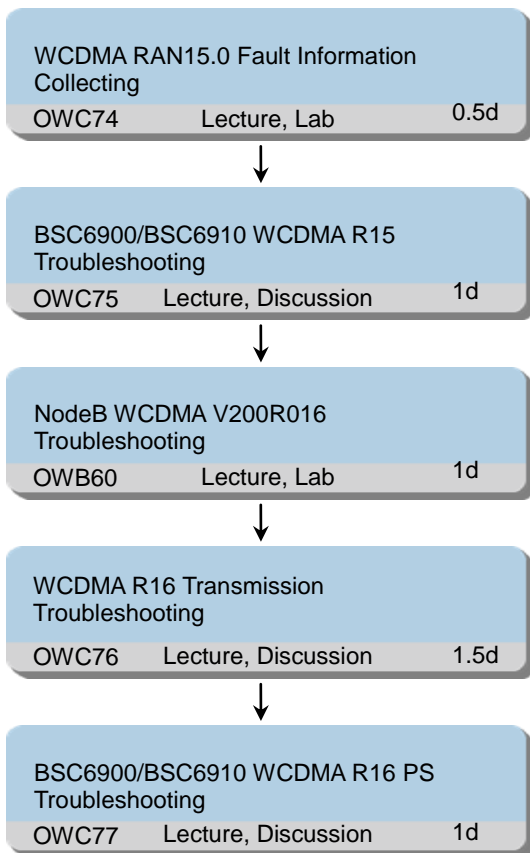
Class Size

Min 6, max 12

Training Timetable(Optional)

1.7.45 WCDMA RAN16.0 RAN Troubleshooting Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN16 RNC Configuration Training
- WCDMA RAN16 NodeB Training

Objectives

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

- Describe the OMU Maintenance and Operation
- Know how to collect the fault information for different faults
- Know how to handle RNC equipment-related faults
- Know how to handle NodeB-related faults
- Know how to handle ATM Transmission Faults
- Know how to handle IP Transmission Faults

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- Describe the PS Fault Troubleshooting flow
 - Know how to handle PS faults

Training Content

OWC74 WCDMA RAN16.0 Fault Information Collecting

- WCDMA RAN16.0 Fault Information Collecting
 - OMU Overview
 - Accident information collecting
 - WRAN problems information collecting
 - HSPA Rate Problems
 - Voice Quality Problems
 - Cell Flow Problems
 - RNC Fault information collecting
 - Equipment Problems
 - Traffic Problems
 - Upgrade Problems
 - Loading Problems
 - NodeB Fault information collecting
 - RTWP Problems
 - License CE Problems
 - Clock Problems
 - Hardware and OM Problems
 - RF Problems
- WCDMA RAN16.0 Fault Information Collecting Student Book

OWC75 BSC6900/BSC6910 WCDMA R16 Troubleshooting

- BSC6900/BSC6910 WCDMA R16 Troubleshooting
 - OMU Service Abnormality
 - Equipment Troubleshooting
 - Service Setup Failure Troubleshooting
 - PS Relocation and Inter-RAT Handover Failure Troubleshooting
- BSC6900/BSC6910 WCDMA R16 Troubleshooting Student Book

OWB60 NodeB WCDMA V200R016 Troubleshooting

- NodeB WCDMA V200R016 Troubleshooting
 - RTWP Fault
 - CE Fault
 - Clock Reference Fault
 - CPRI Link Fault
 - RF Channel Failure
- NodeB WCDMA V200R016 Troubleshooting Student Book

OWC76 RAN16.0 Transmission Troubleshooting

- RAN16.0 Transmission Troubleshooting
 - ATM Transmission Faults Troubleshooting

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- ATM QoS Faults
 - E1/T1 Faults
 - IMA Faults
 - SAAL Faults
 - IP Transmission Faults Troubleshooting
 - FE/GE Transmission Fault
 - IP Layer Fault
 - Signaling Link Fault
 - User Plane Fault
 - IP Clock Fault
 - RAN16.0 Transmission Troubleshooting Student Book
- OWC77 BSC6900/BSC6910 CS and PS Troubleshooting
- BSC6900/BSC6910 PS Troubleshooting
 - HSPA+ and HSPA Data Transmission
 - HSUPA Data Transmission Fault Analysis
 - HSDPA Data Transmission Fault
 - Cell Setup Failure
 - BSC6900/BSC6910 PS Troubleshooting Student Book

Duration

6 working days

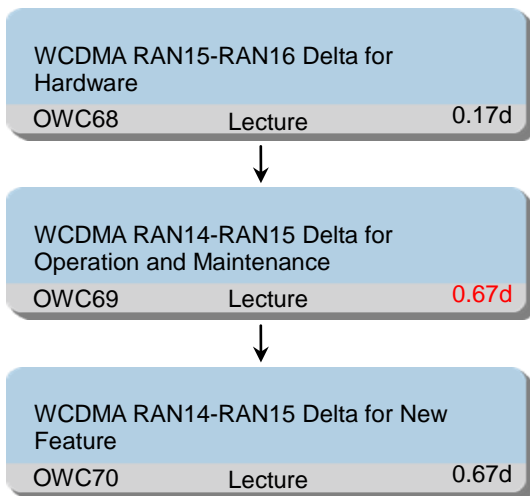
Class Size

Min 6, max 12

Training Timetable(Optional)

1.7.46 WCDMA RAN15.0-RAN16.0 Product Delta Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN16 RNC Configuration Training
- WCDMA RAN16 NodeB Training

Objectives

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

- Describe New hardware and the functions
- Describe new O/M functions
- Describe important new features
- Understand the values and benefit of the features

Training Content

OWC68 WCDMA RAN15-RAN16 Delta for Hardware

- WCDMA RAN15.0-RAN16.0 Delta for New Maintainability and Testability Feature
 - BSC6900/BSC6910 Evolution Overview
 - Enhanced RNC Platform: BSC6910
 - BSC6900/BSC6910 Hardware and Capacity Expansion
 - BSC6900/BSC6910 Typical Hardware Configuration
 - New boards in BBU
 - New RF modules
 - NodeB Capability Improvement

OWC69 WCDMA RAN15-RAN16 Delta for O/M

- WCDMA RAN15.0-RAN16.0 Delta for New Maintainability and Testability Feature
 - Fault Management Assistant
 - Enhancement of Batch Configuration
 - Capturing Packets
 - Tracing Message on Sr Interface
 - Monitoring EVQI
 - Monitoring the Number of Random Access Acknowledgements per Second in a Cell
 - Feature O&M
 - Swap Efficiency Improvement
 - Terminal Black List in RAN16.0

OWC70 WCDMA RAN15-RAN16 Delta for New Feature

- WCDMA RAN15.0-RAN16.0 Delta for New Feature
 - New hardware and platform
 - RNC in pool
 - UMTS network sharing solution
 - Multi-RAT carrier Joint shutdown
 - UL CE resource pool for 12 cells
 - WB-AMR improvement
 - 160/192 HSPA Users per cell
 - Differentiated service based on application resource reservation

Duration

1.5 working days

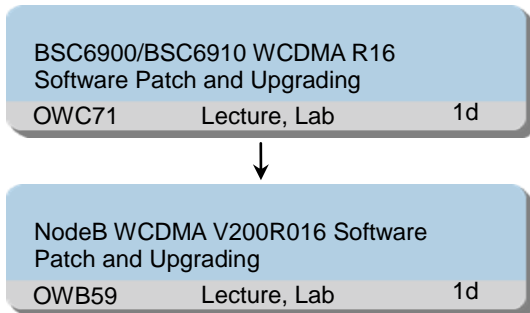
Class Size

Min 6, max 12

Training Timetable(Optional)

1.7.47 WCDMA RAN16.0 RAN Patch Upgrade Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following program(s):
- BSC6900/BSC6910 WCDMA RAN16 RNC Operation Training
- WCDMA RAN16 NodeB Training

Objectives

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

- Describe the upgrade procedure
- Describe the preparations before upgrade
- Perform how to upgrade the RNC
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade.
- Describe the upgrade procedure
- Perform the upgrade of NodeB
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade

Training Content

OWC71 BSC6900/BSC6910 WCDMA R16 RNC Upgrading

- BSC6900 WCDMA V900R016 Upgrading
 - Version requirements for upgrade
 - Upgrade Process
 - Preparations for Upgrade
 - Upgrade Operations
 - Post-Upgrade Verification and Processing
 - Version Rollback

- BSC6900 WCDMA V900R016 Upgrading Practice Guide

OWB59 NodeB WCDMA V200R016 Upgrading

- NodeB WCDMA V200R016 Upgrading
 - NodeB Upgrade Guide based on LMT
 - NodeB Upgrade Guide based on U2000
 - NodeB Upgrade Guide based on U2000+SME
- NodeB WCDMA V200R016 Upgrading Practice Guide

Duration

2 working days

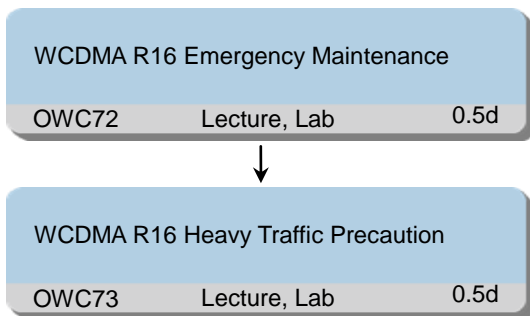
Class Size

Min 6, max 12

Training Timetable(Optional)

1.7.48 WCDMA RAN16.0 Emergency Maintenance Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Successful completion of the following courses:
- WCDMA RAN16 RNC Configuration Training
- WCDMA RAN16 NodeB Training

Objectives

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

- Describe Brief Guide to troubleshoot emergency fault
- Collect fault information for troubleshooting
- Grasp some typical emergency faults troubleshooting
- Master basic skills for heavy traffic precaution
- Understand preparations for heavy traffic precaution
- Master parameter adjustment of heavy traffic precaution
- Deal with typical heavy traffic caused fault
- Describe Brief Guide to troubleshoot emergency fault
- Collect fault information for troubleshooting
- Grasp some typical emergency faults troubleshooting
- Master basic skills for heavy traffic precaution
- Understand preparations for heavy traffic precaution
- Master parameter adjustment of heavy traffic precaution
- Deal with typical heavy traffic caused fault

Training Content

OWC72 WCDMA RAN16.0 Emergency Maintenance

- WCDMA RAN16.0 Emergency Maintenance
 - Emergency maintenance overview

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- Brief guide to troubleshoot fault
 - Learning about fault symptoms
 - Collecting fault information
 - Measures for accident recovery
 - Typical emergency fault scenarios
 - Upgrade-related Faults
 - Operation-related Faults
 - Dysfunctional Iub Interface
 - Dysfunctional Iu Interface
 - Congestion on the Iu Signaling Plane
 - UE Access Restricted by the License
 - Low Success Rate of SCCP Connection Establishment
 - WCDMA RAN16.0 Emergency Maintenance Practice Guide
- OWC73 WCDMA RAN16.0 Heavy Traffic Precaution
- WCDMA RAN16.0 Heavy Traffic Precaution
 - The overview of the heavy traffic precaution
 - Pre-Festival network evaluation and expansion
 - Important KPIs
 - General overview and basic skills introduction
 - General overview
 - Back up and restore Configuration Data
 - View the CPU Usage of SPU and DPU
 - Preparation and suggestions on parameter adjustment before a heavy traffic
 - Preparation before heavy traffic
 - Parameter adjustment before heavy traffic
 - Emergency measures for heavy traffic fault
 - Final preparations
 - CPU overload on the SPU
 - Traffic volume over an SPU subsystem is 0
 - CPU overload on the MPU
 - CPU overload on the Interface board
 - Congestion on the Iu Signaling Plane
 - CN overload
 - WCDMA RAN16.0 Heavy Traffic Precaution Practice Guide

Duration

1 working day

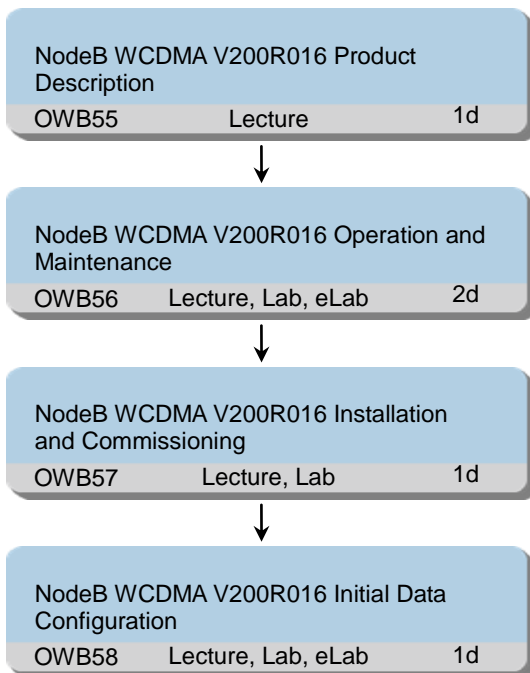
Class Size

Min 6, max 12

Training Timetable(Optional)

1.7.49 WCDMA RAN16.0 NodeB Operation and Maintenance Training

Training Path



Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure of 3900 series NodeB
- Detail the functions of different subsystems and boards of NodeB
- Describe the cables connection of NodeB
- Describe the expansion and networking of NodeB
- Grasp the hardware structure of MBTS
- Grasp the BTS local maintenance
- Maintain site on local terminal
- Execute the tasks of field maintenance
- Describe the structure of operation and maintenance system
- Grasp alarm operation by U2000
- Perform MBTS Device maintenance
- Grasp the operation of Transport connectivity and performance Test

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- Grasp check of Transport Link
 - Perform operation of Carrier Resource CELL
 - Grasp the operation of MBTS Tracing Management
 - Grasp the operation of MBTS Monitoring Management
 - Perform Right, log and License Management
 - Understand the MBTS installation procedure
 - Detail the scenarios of NodeB commissioning
 - Understand the process of Automatic OMCH Establishment
 - Understand the Procedure based on different scenarios
 - Perform NodeB commissioning based on U2000 (PnP)
 - Perform NodeB commissioning based on USB+U2000
 - Perform NodeB commissioning based on LMT+U2000
 - Understand CME process
 - Outline NodeB data configuration procedure based on CME
 - Perform single NodeB data configuration
 - Perform NodeBs data configuration in batch

Training Content

OWB55 3900 Series WCDMA NodeB V200R016 Product Description

- NodeB WCDMA V200R016 Product Description
 - 3900 Series NodeB Overview
 - 3900 Series NodeB Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - BTS3900 Expansion and Networking

OWB56 BTS3900 WCDMA V200R016 Operation and Maintenance

- NodeB WCDMA V200R016 Field Operation and Maintenance
 - Checking hardware
 - LEDs
 - Cable connections
 - Site local maintenance
 - Replacing boards
 - Routine maintenance list
- NodeB WCDMA V200R016 Field Operation and Maintenance Practice Guide
- NodeB WCDMA V200R016 Operation and Maintenance
 - Connecting to BTS O/M System
 - Alarm Management by U2000
 - MBTS Device maintenance
 - Hardware maintenance via U2000
 - Hardware Maintenance via LMT

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- Software and File Management
 - clock maintenance
 - Antenna Test
 - MBTS Transmission Layer Maintenance
 - Transport connectivity and performance Test
 - Transport Link Maintenance
 - MBTS Radio Layer maintenance
 - Basic Concept
 - Carrier Resource Management
 - CELL Management
 - MBTS Tracing Management
 - MBTS Monitoring Management
 - MBTS System Management
 - Right Management
 - Log Management
 - License Management
 - NodeB WCDMA V200R016 Operation and Maintenance Practice Guide
 - OWB57 BTS3900 WCDMA V200R016 Installation and Commissioning
 - NodeB WCDMA V200R016 Hardware Installation
 - MBTS System Overview
 - MBTS Installation Procedures
 - Installing the Cabinet
 - Install the PGND cable
 - Installing Power / Transmission Cables
 - Installing the Input Power Cable for the Cabinet
 - Installation Checklist
 - NodeB WCDMA V200R016 Commissioning
 - the scenarios of NodeB commissioning
 - the process of Automatic OMCH Establishment
 - NodeB commissioning Procedure based on U2000 (PnP)
 - NodeB commissioning Procedure based on USB+U2000
 - NodeB commissioning Procedure based on LMT+U2000
 - NodeB WCDMA V200R016 Commissioning Practice Guide
 - OWB58 BTS3900 WCDMA V200R016 Initial Data Configuration
 - NodeB WCDMA V200R016 Initial Data Configuration
 - Introduction to the CME
 - Configuring a Single NodeB
 - Configuring NodeBs in batch by using a summary data file
 - NodeB Data Consistency Check and Exporting
 - NodeB WCDMA V200R015 Initial Data Configuration Practice Guide

Duration

5 working days

Class Size

Min 6, max 12

Training Timetable(Optional)

1.8 WBT

1.8.1 BSC6900 V900R013 WCDMA Product Description(WBT)

Training Path

BSC6900 V900R013 WCDMA Product Description (WBT)		
OWC60	WBT	1H

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the features and capacity of BSC6900
- Detail the system structure of BSC6900
- Detail the functions of the components of BSC6900
- List the typical hardware configuration of BSC6900

Training Content

OWC60 BSC6900 V900R013 WCDMA Product Description (WBT)

- BSC6900 V900R013 WCDMA Product Description(WBT)
 - BSC6900 System Overview
 - BSC6900 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
 - BSC6900 Typical Configuration

Duration

1 hour

Class Size

No limit

1.8.2 WCDMA BSC6900 Operation and Maintenance(WBT)

Training Path

WCDMA BSC6900 Operation and Maintenance (WBT)		
OWC61	WBT	0.5H

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the RNC routine operation
- Perform the RNC routine maintenance

Training Content

OWC61 WCDMA BSC6900 Operation and Maintenance(WBT)

- WCDMA BSC6900 Operation and Maintenance(WBT)
 - O/M Subsystem Overview
 - Web LMT introduction
 - Alarm Management
 - Device Panel Management
 - Routine Maintenance MML
 - Management of Operation Rights
 - Log Management
 - Performance Monitoring
 - Tracing Management

Duration

0.5 hour

Class Size

No limit

1.8.3 WCDMA BSC6900 V900R013 Initial Data Configuration Based on CME(WBT)

Training Path

WCDMA BSC6900 V900R013 Initial Data Configuration Based on CME (WBT)		
OWC62	WBT	1H

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Master how to use the CME on Data Configuration
- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline RNC data configuration procedure based on CME

Training Content

OWC62 WCDMA BSC6900 V900R013 Initial Data Configuration Based on CME(WBT)

- WCDMA BSC6900 V900R013 Initial Data Configuration Based on CME(WBT)
 - Introduction of CME
 - BSC6900 Data Configuring base on CME
 - Procedure of data configuration of BSC6900
 - Preparation
 - Global Data Configuration
 - Equipment Data Configuration
 - Interface Data Configuration
 - Cell Data Configuration

Duration

1 hour

Class Size

No limit

1.8.4 3900 Series WCDMA NodeB V100R004 Product Description(WBT)

Training Path

3900 Series WCDMA NodeB V100R004 Product Description (WBT)		
OWB54	WBT	1H

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the hardware structure of 3900 series NodeB
- Detail the functions of different subsystems and boards of NodeB
- Describe the cables connection of NodeB
- Describe the expansion and networking of NodeB

Training Content

OWB54 3900 Series WCDMA NodeB V100R004 Product Description(WBT)

- 3900 Series WCDMA NodeB V100R004 Product Description(WBT)
 - 3900 Series NodeB Overview
 - 3900 Series NodeB Hardware
 - Board and Module of the BBU3900
 - RF Module
 - Power Module
 - FAN and SLPU
 - BBU cable connection and RRU cable connection
 - BTS3900 Expansion and Networking3G Spectrum

Duration

1 hour

Class Size

No limit

1.8.5 WCDMA BTS3900 V100R004 Operation and Maintenance(WBT)

Training Path

WCDMA BTS3900 V100R004 Operation and Maintenance (WBT)		
OWB55	WBT	0.5H

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe the structure of operation and maintenance system
- Detail routine operation of NodeB
- Detail routine maintenance of NodeB

Training Content

OWB55 WCDMA BTS3900 V100R004 Operation and Maintenance(WBT)

- WCDMA BTS3900 V100R004 Operation and Maintenance(WBT)
 - NodeB Routine Operation
 - System Management
 - Alarm Management
 - Equipment Management
 - Cell Management
 - Real-time Monitoring
 - Software Management
 - File Management
 - Tracing Management

Duration

0.5 hour

Class Size

No limit

1.8.6 MBTS 3900 V100R004 WCDMA Initial Data Configuration(WBT)

Training Path

MBTS 3900 V100R004 WCDMA Initial Data Configuration (WBT)		
OWB56	WBT	0.5H

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Outline MBTS data configuration procedure based on CME
- Complete MBTS data configuration

Training Content

OWB56 MBTS 3900 V100R004 WCDMA Initial Data Configuration(WBT)

- MBTS 3900 V100R004 WCDMA Initial Data Configuration(WBT)
 - Introduction to the CME
 - NodeB Data Configuring by GUI mode
 - NodeB Data Configuring by Iub Collaboration Mode
 - NodeB Data Consistency Check and Exporting

Duration

0.5 hour

Class Size

No limit

1.8.7 WCDMA RAN14.0 New Features Overview(WBT)

Training Path

WCDMA RAN14.0 New Features Overview (WBT)		
OWC63	WBT	1H

Target Audience

Field engineer
System engineer
Site maintainer

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance

Objectives

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

- Describe New hardware and the functions
- Describe some new O/M functions
- Describe some important new features
- Understand the values and benefit of the features

Training Content

OWC63 WCDMA RAN14.0 New Features Overview(WBT)

- WCDMA RAN14.0 New Features Overview(WBT)
 - RAN14.0 BSC6900 Capacity Specifications
 - RNC New Hardware: SAUc
 - Nodeb New Board: WBBPf
 - NodeB New Board: UMPT
 - Micro BTS3902E
 - Transmission Resource Pool in RNC
 - Multi-sectors Solution
 - MOCN cell Resource Demarcation
 - Independent Demodulation of Signals from Multiple RRUs in One Cell
 - Intelligent Battery Management
 - Enhanced IP PM

Duration

1 hour

Class Size

No limit

