

Customer Training Catalog Course Descriptions

SingleRAN Product Technical Training



HUAWEI
HUAWEI Learning Service
2015



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1.1 Training Course Descriptions

SingleRAN Product Technical Training Courses are designed as follows:

Code	Training Courses	Level	Duration (working days)	Training Location	Class Size
SingleRAN Training Courses					
OMC99	BSC6900 GU V900R011 Product Description	II	1		6 ~ 12
OMC98	BSC6900 GU V900R011 Operation and Maintenance	II	3		6 ~ 12
OMC97	BSC6900 GU V900R011 Data Configuration	II	7		6 ~ 12
OMC96	BSC6900 GU V900R011 Installation and Commissioning	II	1		6 ~ 12
OMC95	BSC6900 GU V900R011 Troubleshooting	III	4.5		6 ~ 12
OMB99	BTS3900 GU V100R002 Product Description	II	1		6 ~ 12
OMB98	BTS3900 GU V100R002 Operation and Maintenance	II	2		6 ~ 12
OMB97	BTS3900 GU V100R002 Data Configuration	II	2		6 ~ 12
OMB96	BTS3900 GU V100R002 Installation and Commissioning	II	1		6 ~ 12
OMC94	BSC6900 GU V900R012 Product Description	II	1		6 ~ 12
OMC93	BSC6900 GU V900R012 Operation and Maintenance	II	3		6 ~ 12
OMC92	BSC6900 GU V900R012 Data Configuration	II	7		6 ~ 12
OMC91	BSC6900 GU V900R012 Installation and Commissioning	II	1		6 ~ 12
OMC90	BSC6900 GU V900R012 Troubleshooting	III	4.5		6 ~ 12
OMB94	BTS3900 GU V100R003 Product Description	II	1		6 ~ 12
OMB93	BTS3900 GU V100R003 Operation and Maintenance	II	2		6 ~ 12
OMB92	BTS3900 GU V100R003 Data Configuration	II	2		6 ~ 12
OMB91	BTS3900 GU V100R003 Installation and Commissioning	II	1		6 ~ 12
OMB90	BTS3900 GU V100R002 Troubleshooting	II	1		6 ~ 12
OMB89	BTS3900 GU V100R003 Troubleshooting	II	1		6 ~ 12
OMC89	BSC6900 GU BSC6000V9R8 / BSC6810V900R011 - V900R012 Delta for Equipment	III	1		6 ~ 12
OMC88	SingleRAN5.0 Feature	III	0.5		6 ~ 12

OMC87	SingleRAN3.0 Feature	III	0.5		6 ~ 12
OMC86	CEM V1R5-V2R10 Delta	III	1		6 ~ 12
OMC85	BSC6900 GU BSC6000V9R8 / BSC6810V900R011 - V900R012 Delta for LMT	III	1		6 ~ 12
OMC84	BSC6900 GU V900R013 Product Description	II	1		6 ~ 12
OMC83	BSC6900 GU V900R013 Operation and Maintenance	II	3		6 ~ 12
OMC82	BSC6900 GU V900R013 Data Configuration	II	7		6 ~ 12
OMC81	BSC6900 GU V900R013 Installation and Commissioning	II	1		6 ~ 12
OMC80	GSM13.0 BSS Troubleshooting	III	2.5		6 ~ 12
OMC78	RAN13.0 BSS Troubleshooting	III	2		6 ~ 12
OMB88	MBTS GU V100R004 Product Description	II	1		6 ~ 12
OMB87	MBTS GU V100R004 Operation and Maintenance	II	2		6 ~ 12
OMB86	MBTS GU V100R004 Data Configuration	II	2		6 ~ 12
OMB85	MBTS GU V100R004 Installation and Commissioning	II	1.5		6 ~ 12
OMB84	MBTS GU V100R004 Troubleshooting	II	0.5		6 ~ 12
OMC79	BSC6900 GU V900R012 - V900R013 Delta	III	2		6 ~ 12
OMC77	BSC6900 GU V900R013 Data Reconfiguration	III	4		6 ~ 12
OMB83	MBTS GU V100R004 Data Reconfiguration	III	3		6 ~ 12
OMS99	BSC6900 GU V900R014 Product Description	II	1		6 ~ 12
OMS98	BSC6900 GU V900R014 Operation and Maintenance	II	3		6 ~ 12
OMS97	BSC6900 GU V900R014 Data Configuration	II	7		6 ~ 12
OMS96	BSC6900 GU V900R014 Installation and Commissioning	II	1		6 ~ 12
OMS95	GBSS14.0 BSS Troubleshooting	III	2		6 ~ 12
OMS94	RAN14.0 BSS Troubleshooting	III	2.5		6 ~ 12
OMS93	SRAN7.0 BSS Troubleshooting	II	0.5		6 ~ 12
OMT99	MBTS GU V100R007 Product Description	II	1		6 ~ 12
OMT98	MBTS GU V100R007 Operation and Maintenance	II	1.5		6 ~ 12
OMT97	MBTS GU V100R007 Data Configuration	II	2		6 ~ 12
OMT96	MBTS GU V100R007 Installation and Commissioning	II	2		6 ~ 12

OMT95	MBTS GU V100R007 Troubleshooting	II	0.5		6 ~ 12
OMS92	BSC6900 GU V900R013 - V900R014 Delta	III	2		6 ~ 12
OMS91	BSC6900 GU V900R014 Data Reconfiguration	III	2		6 ~ 12
OMS90	BSC6900 GU V900R014 Migration	III	1		6 ~ 12
OMS89	BSC6900 GU V900R014 Expanding	III	0.5		6 ~ 12
OMT94	MBTS GU V100R007 Data Reconfiguration	III	2		6 ~ 12
OMT93	MBTS GU V100R007 Migration	III	1		6 ~ 12
OMT92	MBTS GU V100R007 Expanding	III	0.5		6 ~ 12
OMS88	BSC6900 GU V900R013-V900R014 Upgrade	III	1		6 ~ 12
OMT91	MBTS GU V100R004 - V100R007 Upgrade	III	2		6 ~ 12
OMC83	GSM BSS14.0 Emergency Maintenance	III	1		6 ~ 12
OWC40	WCDMA RAN14.0 Emergency Maintenance	III	1		6 ~ 12
OMS00	BSC6900/BSC6910 GU V900R015 Product Description	II	1		6 ~ 12
OMS01	BSC6900/BSC6910 GU V900R015 Operation and Maintenance	II	3		6 ~ 12
OMS02	BSC6900/BSC6910 GU V900R015 Data Configuration	II	7		6 ~ 12
OMS03	BSC6900/BSC6910 GU V900R015 Installation and Commissioning	II	1		6 ~ 12
NA	GBSS15.0 BSS Troubleshooting	III	2		6 ~ 12
NA	RAN15.0 BSS Troubleshooting	III	2.5		6 ~ 12
NA	SRAN8.0 BSS Troubleshooting	II	0.5		6 ~ 12
OMT00	MBTS GU V100R008 Product Description	II	1		6 ~ 12
OMT01	MBTS GU V100R008 Operation and Maintenance	II	2.5		6 ~ 12
OMT02	MBTS GU V100R008 Data Configuration	II	2		6 ~ 12
OMT03	MBTS GU V100R008 Commissioning	II	1		6 ~ 12
OMT04	MBTS GU TOP Alarm Handling	II	0.5		6 ~ 12
OMS04	BSC6900/BSC6910 GU V900R015 Data Reconfiguration	III	1.5		6 ~ 12
OMS05	BSC6900/BSC6910 GU V900R015 Migration	III	1		6 ~ 12
OMS06	BSC6900/BSC6910 GU V900R015 Expanding	III	1		6 ~ 12

OMT05	MBTS GU V100R008 Data Reconfiguration	III	1.5		6 ~ 12
OMT06	MBTS GU V100R008 Migration	III	1.5		6 ~ 12
OMT07	MBTS GU V100R008 Expanding	III	0.5		6 ~ 12
OMS07	BSC6900/BSC6910 GU V900R015 Patch and Upgrade	III	1		6 ~ 12
OMT08	MBTS GU V100R008 Patch and Upgrade	III	1		6 ~ 12
OMC04	GSM BSS15.0 Emergency Maintenance	III	0.5		6 ~ 12
OMC05	GSM BSS15.0 Precautions and Emergency Maintenance for Large Traffic	III	0.5		6 ~ 12
OWC51	WCDMA RAN15.0 Emergency Maintenance	III	0.5		6 ~ 12
OWC52	WCDMA RAN15.0 Heavy Traffic Precaution	III	0.5		6 ~ 12
OMS08	BSC6900/BSC6910 GU V900R014 - V900R015 Delta for Equipment	III	0.25		6 ~ 12
OMT09	MBTS GU V100R007 - V100R008 Delta for Hardware	III	0.25		6 ~ 12
OMS09	BSC6900/BSC6910 GU V900R014 - V900R015 New Maintainability and Testability Feature	III	0.75		6 ~ 12
OMS10	BSC6900/BSC6910 GU V900R014 - V900R015 New Feature	III	0.5		6 ~ 12
OMS11	CME GU V200R12 - V200R13 Delta	III	0.25		6 ~ 12
OMT10	MBTS GUL V100R008 Product Description	II	1		6 ~ 12
OMT11	MBTS GUL V100R008 Operation and Maintenance	II	2.5		6 ~ 12
OMT12	MBTS GUL V100R008 Data Configuration	II	2		6 ~ 12
OMT13	MBTS GUL V100R008 Commissioning	II	0.75		6 ~ 12
OMT14	MBTS GUL TOP Alarm Handling	II	0.75		6 ~ 12
OMS12	GU IPRAN Fundamental	III	0.5		6 ~ 12
OMS13	GU IPRAN MSTP/PTN Networking	III	1		6 ~ 12
OMS14	GU IPRAN Networking Planing	III	0.75		6 ~ 12
OMS15	GU IPRAN Feature Application	III	1.5		6 ~ 12
OMS16	GU IPRAN Maintenance and Monitoring	III	0.75		6 ~ 12
OMS17	GU IPRAN Troubleshooting	III	0.5		6 ~ 12
OMS18	GSM IPRAN Evolution Overview	III	0.25		6 ~ 12

OMC80	GSM IPRAN A over IP Reconstruction	III	0.75		6 ~ 12
OMC81	GSM IPRAN Gb over IP Reconstruction	III	1		6 ~ 12
OMC82	GSM IPRAN Abis over IP Reconstruction	III	1		6 ~ 12
OWI05	WCDMA IPRAN Reconstruction over Iub Interface	III	1		6 ~ 12
OWI06	WCDMA IPRAN Reconstruction over IuCS Interface	III	1		6 ~ 12
OMC06	BSC6900/BSC6910 GSM Fault Information Collecting	III	0.5		6 ~ 12
OMC07	BSC6900/BSC6910 CS Troubleshooting	III	1		6 ~ 12
OMC08	BSC6900/BSC6910 PS Troubleshooting	III	1		6 ~ 12
OMC09	BSC6900/BSC6910 IP Transmission Troubleshooting	III	0.5		6 ~ 12
OMC10	BSC6900/BSC6910 Clock Troubleshooting	III	0.5		6 ~ 12
OWC57	WCDMA RAN15.0 Fault Information Collecting	III	0.5		6 ~ 12
OWC39	BSC6900/BSC6910 WCDMA R15 Troubleshooting	III	1		6 ~ 12
OWB36	NodeB WCDMA V200R015 Troubleshooting	III	0.5		6 ~ 12
OWC58	RAN15.0 Transmission Troubleshooting	III	0.5		6 ~ 12
OWC59	BSC6900/BSC6910 CS and PS Troubleshooting	III	1		6 ~ 12
OMS20	BSC6900/BSC6910 GU R16 Product Description	II	1		6 ~ 12
OMS21	BSC6900/BSC6910 GU R16 Routine Operation and Maintenance	II	3		6 ~ 12
OMS22	BSC6900/BSC6910 GU R16 Initial Data Configuration	II	6		6 ~ 12
OMS23	BSC6900/BSC6910 GU R16 Installation and Commissioning	II	1		6 ~ 12
OMT20	MBTS GU V100R009 Product Description	II	1		6 ~ 12
OMT21	MBTS GU V100R009 Operation and Maintenance	II	2.5		6 ~ 12
OMT22	MBTS GU V100R009 Initial Data Configuration	II	2		6 ~ 12
OMT23	MBTS GU V100R009 Commissioning	II	1		6 ~ 12
OMT24	MBTS GU V100R009 TOP Alarm Handling	II	0.5		6 ~ 12
OMS24	BSC6900/BSC6910 GU R16 Dynamic Data Configuration	III	1.5		6 ~ 12
OMS25	BSC6900/BSC6910 GU R16 Migration Data Configuration	III	1		6 ~ 12
OMS26	BSC6900/BSC6910 GU R16 Capacity Expanding	III	1		6 ~ 12

OMT25	MBTS GU V100R009 Dynamic Data Configuration	III	1.5		6 ~ 12
OMT26	MBTS GU V100R009 Migration Data Configuration	III	1.5		6 ~ 12
OMT27	MBTS GU V100R009 Capacity Expanding	III	0.5		6 ~ 12
OMS27	BSC6900/BSC6910 GU R16 Software Patch and Upgrading	III	1		6 ~ 12
OMT28	MBTS GU V100R009 Software Patch and Upgrading	III	1		6 ~ 12
OMC32	GSM BSS16.0 Emergency Maintenance	III	0.5		6 ~ 12
OMC33	GSM BSS16.0 Precautions and Emergency Maintenance for Large Traffic	III	0.5		6 ~ 12
OWC72	WCDMA R16 Emergency Maintenance	III	0.5		6 ~ 12
OWC73	WCDMA R16 Heavy Traffic Precaution	III	0.5		6 ~ 12
OMS28	BSC6900/BSC6910 GU R15-R16 Delta for Hardware	III	0.25		6 ~ 12
OMT29	MBTS GU V100R008-V100R009 Delta for Hardware	III	0.25		6 ~ 12
OMS29	SingleRAN GU R15-R16 Delta for Operation and Maintenance	III	0.75		6 ~ 12
OMS30	SingleRAN GU R15-R16 Delta for New Feature	III	0.5		6 ~ 12
OMS31	CME GU V200R13 - V200R14 Delta	III	0.25		6 ~ 12
OMT30	MBTS GUL V100R009 Product Description	II	1		6 ~ 12
OMT31	MBTS GUL V100R009 Operation and Maintenance	II	2.5		6 ~ 12
OMT32	MBTS GUL V100R009 Initial Data Configuration	II	2		6 ~ 12
OMT33	MBTS GUL V100R009 Commissioning	II	1		6 ~ 12
OMT34	MBTS GUL V100R009 TOP Alarm Handling	II	0.5		6 ~ 12
OMC34	GSM R16 Fault Information Collecting	III	0.5		6 ~ 12
OMC35	GSM R16 CS Troubleshooting	III	1		6 ~ 12
OMC36	GSM R16 PS Troubleshooting	III	1		6 ~ 12
OMC37	GSM R16 IP Transmission Troubleshooting	III	0.5		6 ~ 12
OMC38	GSM R16 Clock Troubleshooting	III	0.5		6 ~ 12
OWC74	WCDMA R16 Fault Information Collecting	III	0.5		6 ~ 12
OWC75	BSC6900/BSC6910 WCDMA R16 Troubleshooting	III	1		6 ~ 12
OWB60	NodeB WCDMA V200R016 Troubleshooting	III	0.5		6 ~ 12

OWC76	WCDMA R16 Transmission Troubleshooting	III	0.5		6 ~ 12
OWC77	BSC6900/BSC6910 WCDMA R16 PS Troubleshooting	III	1		6 ~ 12
WBT Training Courses					
NA	BSC6900 GU V900R013 Product Description (WBT)	II	1 h		No limit
NA	MBTS GU V100R004 Product Description (WBT)	II	1 h		No limit
NA	BSC6900 GU V900R013 Operation and Maintenance(WBT)	II	1 h		No limit
NA	SingleRAN MBTS GUL Product Overview (WBT)	II	1 h		No limit
NA	SingleRAN MBSC GU Product Overview (WBT)	II	1 h		No limit
NA	SingleRAN GUL O&M Tools Introduction(WBT)	II	1 h		No limit
NA	SingleRAN MBTS GUL Site Solution(WBT)	II	1 h		No limit

1.2 SingleRAN Training Course Descriptions

1.2.1 OMC99 BSC6900 GU V900R011 Product Description



Objectives

On completion of this course, 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- BSC6900 System Overview
- BSC6900 Hardware Structure
- Cabinets
- Subracks
- Subsystems and Boards
- Cables
- BSC6900 Signal Flows
- BSC6900 UMTS Signal Flows
- BSC6900 GSM Signal Flows
- BSC6900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.2 OMC98 BSC6900 GU V900R011 Operation and Maintenance



Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the BSC6900 routine operation
- Perform the BSC6900 routine maintenance

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R011 Product Description

Content

- O/M subsystem overview

- Web LMT introduction
- Alarm management
- Device panel management
- Log management
- User management
- BSC maintenance
- Routine MML commands
- Performance monitoring
- Trace management
- Basic Concepts
- Alarm Operation
- MML Command Operation
- N/A

Training Methods

Lectures, Demonstration, Hands-on exercise

Duration

3 working days

Class Size

Min 6, max 12

1.2.3 OMC97 BSC6900 GU V900R011 Data Configuration



Objectives

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

- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline MBSC data configuration procedure based on CME
- Complete MBSC data configuration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R011 Product Description

Content

- Data Configuration Overview
- Preparation for Data Configuration
- Global Data Configuration
- Equipment Data Configuration
- Interface Data Configuration
- Cell Data Configuration
- MBSC Data Configuration based on CME Overview
- MBSC Data Configuration Preparation based on CME
- MBSC Data Configuration based on CME
- MBSC Data Exporting based on CME
- N/A
- N/A
- N/A
- N/A

Training Methods

Lectures, Demonstration, Hands-on exercise

Duration

7 working days

Class Size

Min 6, max 12

1.2.4 OMC96 BSC6900 GU V900R011 Installation and Commissioning



Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following

course(s):

- BSC6900 GU V900R011 Product Description
- BSC6900 GU V900R011 Data Configuration

Content

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

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.5 OMC95 BSC6900 GU V900R011 Troubleshooting



Objectives

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

- Grasp BSC6900 common fault disposal method
- Understand general procedure of fault judgment and location
- Master the way to prevent BSC6900 fault
- Analyse and handle some typical cases
- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R011 Product Description
- BSC6900 GU V900R011 Operation and Maintenance
- BSC6900 GU V900R011 Data Configuration
- BSC6900 GU V900R011 Installation and Commissioning

Content

- Requirements for Maintenance Personnel
- General Procedures of Troubleshooting
- Basic Methods of Fault Judgment and Location
- Approach to prevent BSC6900 fault
- BTS3900 Hardware Overview

- General Procedures of Troubleshooting
- Procedure of BTS Status Verification
- Collecting Information for Locating BTS Faults
- Methods of Fault Judgment and Location
- Approach to prevent BTS fault
-
- 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
- Requirements for Maintenance Personnel
- General Procedures of Troubleshooting
- Basic Methods of Fault Judgment and Location
- Approach to prevent BSC fault
- BSC Common Faults Analysis
- Voice Faults
- Clock Faults
- Link / Interconnection Faults
- Loading Faults
- BTS Common Faults Analysis
- Transmission Faults
- Antenna Faults

Training Methods

Lectures、Case-study、Hands-on exercise

Duration

4.5 working days

Class Size

Min 6, max 12

1.2.6 OMB99 BTS3900 GU V100R002 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- BTS3900 system overview
- BBU hardware structure
- RFU hardware structure
- Auxiliaries hardware structure
- Cable connection
- Technical specifications of the BTS3900

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.7 OMB98 BTS3900 GU V100R002 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by web LMT
- Perform GSM BTS local operation by SMT
- Perform UMTS NodeB routine operation by LMT

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following

course(s):

- BTS3900 GU V100R002 Product Description

Content

- GSM BTS Operation and Maintenance
- BTS Remote Operation via LMT
- BTS Local Operation via SMT
- UMTS NodeB Operation and Maintenance
- Operation and Maintenance System
- NodeB Routine Operation

Training Methods

Lectures, Demonstration, Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.8 OMB97 BTS3900 GU V100R002 Data Configuration



Objectives

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

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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BTS3900 GU V100R002 Product Description

Content

- Overview of Configuring Multi-Mode Base Stations
- MBTS Data Configuration Preparation
- MBTS Data Configuring
- MBTS Data Exporting and Activating
- MBTS Network Structure
- MBTS UO Data Configuring
- MBTS GO Data Configuring
- MBTS Data Exporting and Activating

Training Methods

Lectures, Demonstration, Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.9 OMB96 BTS3900 GU V100R002 Installation and Commissioning



Objectives

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

- Detail the scenarios of multi-mode base station commissioning
- Perform multi-mode base station Remote commissioning
- Perform multi-mode base station Local commissioning

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following

course(s):

- BTS3900 GU V100R002 Product Description
- BTS3900 GU V100R002 Data Configuration

Content

- Introduction to Multi-Mode Base Station Commissioning
- Remote Commissioning the Multi-Mode Base Station
- Local Commissioning the Multi-Mode Base Station

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.10 OMC94 BSC6900 GU V900R012 Product Description



Objectives

On completion of this course, 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- BSC6900 System Overview
- BSC6900 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
- BSC6900 Signal Flows
 - BSC6900 UMTS Signal Flows
 - BSC6900 GSM Signal Flows
 - BSC6900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.11 OMC93 BSC6900 GU V900R012 Operation and Maintenance



Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the BSC6900 routine operation
- Perform the BSC6900 routine maintenance

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R012 Product Description

Content

- OM System Introduction
- Operation Right Management
- Alarm management
- Log management
- Device panel management
- BSC maintenance
- Routine MML commands
- Trace management
- Performance monitoring

Training Methods

Lectures、 Demonstration、 Hands-on exercise

Duration

3 working days

Class Size

Min 6, max 12

1.2.12 OMC92 BSC6900 GU V900R012 Data Configuration



Objectives

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

- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline MBSC data configuration procedure based on CME
- Complete MBSC data configuration
- Export and activate the configuration data

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BSC6900 GU V900R012 Product Description

Content

- Concepts of CME
- MBSC Data Configuring
- MBSC Data Exporting
- Data Configuration Overview
- Preparation
- Global Data Configuration
- Equipment Data Configuration
- Interface Data Configuration
- Cell Data Configuration

Training Methods

Lectures、 Demonstration、 Hands-on exercise

Duration

7 working days

Class Size

Min 6, max 12

1.2.13 OMC91 BSC6900 GU V900R012 Installation and Commissioning



Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R012 Product Description
- BSC6900 GU V900R012 Data Configuration

Content

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

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.14 OMC90 BSC6900 GU V900R012 Troubleshooting



Objectives

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

- Grasp BSC6900 common fault disposal method
- Understand general procedure of fault judgment and location
- Master the way to prevent BSC6900 fault
- Analyse and handle some typical cases
- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R012 Product Description
- BSC6900 GU V900R012 Operation and Maintenance
- BSC6900 GU V900R012 Data Configuration
- BSC6900 GU V900R012 Installation and Commissioning

Content

- BSC Common Faults Analysis
- Voice Faults
- Clock Faults
- Link / Interconnection Faults

- Loading Faults
- BTS Common Faults Analysis
- Transmission Faults
- Antenna Faults
- Requirements for Maintenance Personnel
- General Procedures of Troubleshooting
- Basic Methods of Fault Judgment and Location
- Approach to prevent BSC6900 fault
- 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
- Requirements for Maintenance Personnel
- General Procedures of Troubleshooting
- Basic Methods of Fault Judgment and Location
- Approach to prevent BSC fault
- BTS3900 Hardware Overview
- General Procedures of Troubleshooting
- Procedure of BTS Status Verification
- Collecting Information for Locating BTS Faults
- Methods of Fault Judgment and Location
- Approach to prevent BTS fault

Training Methods

Lectures、Case-study、Hands-on exercise

Duration

4.5 working days

Class Size

Min 6, max 12

1.2.15 OMB94 BTS3900 GU V100R003 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- BTS3900 System Overview
- BTS3900 Hardware Structure
- BTS3900 Cable Connection
- BTS3900 Technical Specifications
- BTS3900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.16 OMB93 BTS3900 GU V100R003 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by web LMT
- Perform GSM BTS local operation by SMT
- Perform UMTS NodeB routine operation by LMT

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BTS3900 GU V100R003 Product Description

Content

- GSM BTS Operation and Maintenance
- BTS Remote Operation
- BTS Local Operation
- UMTS NodeB Operation and Maintenance

Training Methods

Lectures, Demonstration, Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.17 OMB92 BTS3900 GU V100R003 Data Configuration



Objectives

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

- Outline the procedure of MBTS data configuration
- Complete the MBTS initial data configuration based on CME
- Describe the meaning of some important parameters

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BTS3900 GU V100R003 Product Description

Content

- Overview of Configuring Multi-Mode Base Stations
- CME Introduction
- MBTS Configuration Mode
- MBTS Data Configuration Procedure
- MBTS Data Configuring
- MBTS Data Configuration without MBTS template
- MBTS Data Configuration with MBTS template
- MBTS Data Exporting and Activating

Training Methods

Lectures、 Demonstration、 Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.18 OMB91 BTS3900 GU V100R003 Installation and Commissioning



Objectives

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

- Understand the MBTS installation procedure.
- Describe the steps of MBTS commissioning.
- Master the commissioning of MBTS.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R003 Product Description

- BTS3900 GU V100R003 Data Configuration

Content

- MBTS System Overview
- MBTS Installation Procedures
- MBTS Commissioning Procedures
- MBTS Commissioning Scenarios
- Remote Commissioning
- SMT/LMT + Remote Commissioning
- USB + Remote Commissioning

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.19 OMB90 BTS3900 GU V100R002 Troubleshooting



Objectives

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

- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R002 Product Description
- BTS3900 GU V100R002 Data Configuration
- BTS3900 GU V100R002 Installation and Commissioning
- BTS3900 GU V100R002 Operation and Maintenance

Content

- BTS3900 Hardware Overview
- General Procedures of Troubleshooting
- Procedure of BTS Status Verification
- Collecting Information for Locating BTS Faults
- Methods of Fault Judgment and Location
- Approach to prevent BTS fault
- 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

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.20 OMB89 BTS3900 GU V100R003 Troubleshooting



Objectives

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

- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BTS3900 GU V100R003 Product Description
 - BTS3900 GU V100R003 Data Configuration
 - BTS3900 GU V100R003 Installation and Commissioning
 - BTS3900 GU V100R003 Operation and Maintenance

Content

- BTS3900 Hardware Overview
- General Procedures of Troubleshooting
- Procedure of BTS Status Verification
- Collecting Information for Locating BTS Faults
- Methods of Fault Judgment and Location
- Approach to prevent BTS fault
- 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

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.21 OMC89 BSC6900 GU BSC6000V9R8 / BSC6810V900R011 - V900R012 Delta for Equipment



Objectives

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

- Describe BSC6900 Evolution
- Outline New Hardware of BSC6900
- Master the different O/M methods of BSC6900

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM BSC6000 or UMTS BSC6810 wireless

network operation and maintenance

Content

- BSC6900 Evolution Overview
- Hardware Changing in BSC6900
- Software Changing in BSC6900
- Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.22 OMC88 SingleRAN5.0 Feature



Objectives

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

- Master SingleRAN feature: Co-TRM and Co-RRM algorithm and parameters.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Successful completion of the following course(s):
- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- BSC6900 GU V900R012 Product Description
- BSC6900 GU V900R012 Operation and Maintenance
- BSC6900 GU V900R012 Data Configuration
- BSC6900 GU V900R012 Installation and Commissioning

- BTS3900 GU V100R003 Product Description
- BTS3900 GU V100R003 Data Configuration
- BTS3900 GU V100R003 Installation and Commissioning
- BTS3900 GU V100R003 Operation and Maintenance

Content

- SingleRAN Feature
- Co-RRM Algorithm
- Co-RRM Parameters
- SingleRAN Feature
- Co-TRM Algorithm
- Co-RRM Parameters

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.23 OMC87 SingleRAN3.0 Feature



Objectives

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

- Master SingleRAN feature: Co-TRM and Co-RRM algorithm and parameters.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Successful completion of the following course(s):
- BSC6900 GU V900R011 Product Description
- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- BSC6900 GU V900R011 Operation and Maintenance
- BSC6900 GU V900R011 Data Configuration
- BSC6900 GU V900R011 Installation and Commissioning

- BTS3900 GU V100R002 Product Description
- BTS3900 GU V100R002 Data Configuration
- BTS3900 GU V100R002 Installation and Commissioning
- BTS3900 GU V100R002 Operation and Maintenance

Content

- SingleRAN Feature
- Co-RRM Algorithm
- Co-RRM Parameters
- SingleRAN Feature
- Co-TRM Algorithm
- Co-RRM Parameters

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.24 OMC86 CEM V1R5-V2R10 Delta



Objectives

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

- Describe Changes and advantage of CME V2R10
- Outline Concept of the Current Area, Planned Area of CME
- Outline CME GUI configuration interface Enhancement
- Know about new functions of the CME V200R010

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM BSC6000 or UMTS BSC6810 wireless network operation and maintenance

Content

- CME V2R10 Introduction
- Management of the Current Area, Planned Area
- Function Navigation Enhancement
- GUI Enhancement

- New Features Configured to the UMTS
- RNP/RNO Import and Export
- Iub Consistency Check
- Reconstruction of R99 Cells in Batches to HSPA Cells
- UMTS FallBack
- New Features Configured to the GSM
- New 2G Consistency Check Rules
- Balance Check for the Carrier STB Power
- NBI Import and Export of the Cell Configuration Based on Operators
- Parameter Check and Update of the External and Neighboring Cell
- Check and Adding of the Cross-System Unidirectional Neighboring Cells
- New Features Configured to the SingleRAN
- New Features of the Platform

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.25 OMC85 BSC6900 GU BSC6000V9R8 / BSC6810V900R011 - V900R012 Delta for LMT



Objectives

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

- Describe the features of Web LMT
- Outline the different concepts between GSM/UMTS LMT and Web LMT
- Outline the different OM functions between GSM/UMTS LMT and Web LMT
- Outline the changing of some MML commands

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM BSC6000 or UMTS BSC6810 wireless network operation and maintenance

Content

- MML Function Changing
- Alarm Management Function Changing
- Monitor Management Function Changing
- Trace Management Function Changing

- Device Maintenance Function Changing
- Data Backup and Restore Function Changing
- Log Management Function Changing
- Web LMT Introduction
- OM Function Changing
- MML Function Changing
- Alarm Management Function Changing
- Monitor Management Function Changing
- Trace Management Function Changing
- Device Maintenance Function Changing
- Data Backup and Restore Function Changing
- Log Management Function Changing
- MML Command Changing in Data Configuration

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.26 OMC84 BSC6900 GU V900R013 Product Description



Objectives

On completion of this course, 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- BSC6900 System Overview
- BSC6900 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
- BSC6900 Signal Flows
 - BSC6900 UMTS Signal Flows
 - BSC6900 GSM Signal Flows
 - BSC6900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.27 OMC83 BSC6900 GU V900R013 Operation and Maintenance



Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the BSC6900 routine operation
- Perform the BSC6900 routine maintenance

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013 Product Description

Content

- OM System Introduction
- Operation Right Management
- Alarm management
- Log management
- Device panel management
- BSC maintenance
- Routine MML commands
- Trace management
- Performance monitoring

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

3 working days

Class Size

Min 6, max 12

1.2.28 OMC82 BSC6900 GU V900R013 Data Configuration



Objectives

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

- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline MBSC data configuration procedure based on CME
- Complete MBSC data configuration
- Export and activate the configuration data

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BSC6900 GU V900R013 Product Description

Content

- Concepts of CME
- MBSC Data Configuring
- MBSC Data Exporting
- Data Configuration Overview
- Preparation
- Global Data Configuration
- Equipment Data Configuration
- Interface Data Configuration
- Cell Data Configuration

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

7 working days

Class Size

Min 6, max 12

1.2.29 OMC81 BSC6900 GU V900R013 Installation and Commissioning



Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R013 Product Description
- BSC6900 GU V900R013 Data Configuration

Content

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

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.30 OMC80 GSM13.0 BSS Troubleshooting



Objectives

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

- Grasp BSC6900 common fault disposal method
- Understand general procedure of fault judgment and location
- Master the way to prevent BSC6900 fault
- Analyze and handle some typical cases
- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900 GU V900R013 Product Description
 - BSC6900 GU V900R013 Operation and Maintenance
 - BSC6900 GU V900R013 Data Configuration
 - BSC6900 GU V900R013 Installation and

Commissioning

Content

- Requirements for Maintenance Personnel
- General Procedures of Troubleshooting
- Basic Methods of Fault Judgment and Location
- Approach to prevent BSC fault
- BSC Common Faults Analysis
- Voice Faults
- Clock Faults
- Link / Interconnection Faults
- Loading Faults
- BTS Common Faults Analysis
- Transmission Faults
- Antenna Faults
- BTS3900 Hardware Overview
- General Procedures of Troubleshooting
- Procedure of BTS Status Verification
- Collecting Information for Locating BTS Faults
- Methods of Fault Judgment and Location
- Approach to prevent BTS fault

Training Methods

Lectures、Case-study、Hands-on exercise

Duration

2.5 working days

Class Size

Min 6, max 12

1.2.31 OMC78 RAN13.0 BSS Troubleshooting



Objectives

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

- Grasp BSC6900 common fault disposal method
- Understand general procedure of fault judgment and location
- Master the way to prevent BSC6900 fault
- Analyse and handle some typical cases
- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900 GU V900R013 Product Description
 - BSC6900 GU V900R013 Operation and

Maintenance

- BSC6900 GU V900R013 Data Configuration
- BSC6900 GU V900R013 Installation and Commissioning

Content

- 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
- N/A

Training Methods

Lectures、Case-study、Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.32 OMB88 MBTS GU V100R004 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- BTS3900 System Overview
- BTS3900 Hardware Structure
- BTS3900 Cable Connection
- BTS3900 Technical Specifications
- BTS3900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.33 OMB87 MBTS GU V100R004 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by web LMT
- Perform GSM BTS local operation by SMT
- Perform UMTS NodeB routine operation by LMT

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R004 Product Description

Content

- GSM BTS Operation and Maintenance
- BTS Remote Operation
- BTS Local Operation
- UMTS NodeB Operation and Maintenance
- Checking hardware
- LEDs
- Cable connections
- Site local maintenance
- Replacing boards
- Routine maintenance list

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2 working days

Class Size

Min 6, max 12

1.2.34 OMB86 MBTS GU V100R004 Data Configuration



Objectives

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

- Outline the procedure of MBTS data configuration
- Complete the MBTS initial data configuration based on CME
- Describe the meaning of some important parameters

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BTS3900 GU V100R004 Product Description

Content

- Overview of Configuring Multi-Mode Base Stations
- CME Introduction
- MBTS Configuration Mode
- MBTS Data Configuration Procedure
- MBTS Data Configuring
- MBTS Data Configuration without MBTS template
- MBTS Data Configuration with MBTS template
- MBTS Data Exporting and Activating

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2 working days

Class Size

Min 6, max 12

1.2.35 OMB85 MBTS GU V100R004 Installation and Commissioning



Objectives

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

- Understand the MBTS installation procedure.
- Describe the steps of MBTS commissioning.
- Master the commissioning of MBTS.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R004 Product Description

- BTS3900 GU V100R004 Data Configuration

Content

- Hardware Installation
- SMT/LMT Commissioning
- USB Commissioning
- MBTS System Overview
- MBTS Installation Procedures
- MBTS Commissioning Procedures
- MBTS Commissioning Scenarios
- Remote Commissioning

Training Methods

Lectures, Hands-on exercise

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.36 OMB84 MBTS GU V100R004 Troubleshooting



Objectives

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

- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R004 Product Description
- BTS3900 GU V100R004 Data Configuration

- BTS3900 GU V100R004 Installation and Commissioning
- BTS3900 GU V100R004 Operation and Maintenance

Content

- Principles of MBTS Alarm Design and Operations
- Process of MBTS Troubleshooting
- Methods to Locate an MBTS Fault and Case Analysis
- Preventive Measures Against MBTS Faults

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.37 OMC79 BSC6900 GU V900R012 - V900R013 Delta



Objectives

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

- Describe BSC6900 Evolution
- Outline New Hardware of BSC6900
- Master the different O/M methods of BSC6900

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R012 Product Description
- BSC6900 GU V900R012 Operation and Maintenance
- BSC6900 GU V900R012 Data Configuration
- BSC6900 GU V900R012 Installation and Commissioning
- BTS3900 GU V100R002 Product Description
- BTS3900 GU V100R002 Data Configuration
- BTS3900 GU V100R002 Installation and Commissioning
- BTS3900 GU V100R002 Operation and Maintenance

Content

- BSC6900 Evolution Overview
- BSC6900 Hardware Evolution
- BSC6900 Typical Hardware Configuration
- MML Command Changing in Data Configuration
- Alarm Function Changing

- New/Enhanced Platform Features
- New/Enhanced GSM Configuration Features
- New/Enhanced UMTS Configuration Features
- New/Enhanced SRAN Configuration Features
- GSM/UMTS Feature
- IP maintenance testing enhancements: UDP ping and IP network quality monitoring and tracking
- Security enhancements: software integrity protection, security alarms, and security logs
- GSM Feature
- Enhanced Voice Fault Location Method
- Transmission resource savings display
- RTCP Introduction
- UMTS Feature
- DPI
- MOCN Enhancement
- Multi-Carrier Switch off Based on QoS
- PTT
- GU Maintainability and Testability
- Auto Software Management
- Alarm Optimization and OM Engineering Status Optimization Requirements in SRAN Scenario
- IP Transmission Quality Test
- Enhanced Message Tracking
- GSM Maintainability and Testability
- Query of GBTS in Batches (Query of Board Versions and Boards, and Export of Query Results)
- Maintenance and Test of Air Interface and RF Fault
- BTS IP Port Backup and Monitoring Equipment IP Access
- Detection Requirement of Transmission Connection over Abis Interface
- UMTS Maintainability and Testability
- MSISDN Based Single User Tracking

Training Methods

Lectures

Duration

2 working days

Class Size

Min 6, max 12

1.2.38 OMC77 BSC6900 GU V900R013 Data Reconfiguration



Objectives

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

- Describe the procedure of adjusting the BSC
- Describe the modification of OPC and DPC
- Perform the way to adding/removing subracks and boards
- expand the transmission resource in A, GB and Abis interface.
- Reconfiguring the Transmission Mode on A, Gb and Abis interface.
- Adjust the cell processing in DPU board
- 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
- Perform the RNC migration reconfiguration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R004 Product Description
- BTS3900 GU V100R004 Data Configuration
- BTS3900 GU V100R004 Installation and Commissioning
- BTS3900 GU V100R004 Operation and

Maintenance

Content

- Changing the Connection Between the BSC and the MSC
- Cutting Over an MSC (with IP Transmission Mode Retained over the A Interface)
- Cutting Over an MSC (TDM to TDM Transmission Mode over the A Interface)
- Cutting Over an MSC (TDM to IP Transmission Mode over the A Interface)
- Modify OPC and DPC
- Modify N7 signaling link from 64k to 2M
- Add STP in A interface
- add subracks and boards
- Remove Boards and Subracks
- modify single OMU to double OMU
- Expand the transmission resource in A, GB and Abis interface.
- Reconfiguring the Transmission Mode
- Changing the Transmission Mode on the A Interface
- Reconfiguring the Transmission Mode on the Ater Interface
- Changing the Transmission Mode on the Gb Interface
- Changing the Transmission Mode on the Abis Interface
- Adjust the cell processing in DPU board
- N/A
- 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
- N/A
- RNC Migration Scenarios
- Reparenting RNC Between MGWs

-
- Reparenting RNC Between MSC Servers
 - Reparenting RNC Between SGSN
 - N/A

Training Methods

Lectures, Demonstration

Duration

4 working days

Class Size

Min 6, max 12

1.2.39 OMB83 MBTS GU V100R004 Data Reconfiguration



Objectives

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

- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Reparent BTSs
- Detail the scenarios of NodeB migration
- Detail the procedure of NodeB migration
- Perform the NodeB migration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BTS3900 GU V100R004 Product Description
 - BTS3900 GU V100R004 Data Configuration
 - BTS3900 GU V100R004 Installation and Commissioning
 - BTS3900 GU V100R004 Operation and

Maintenance

Content

- Dynamic Data Adjustment Introduction
- Adjusting the Global/Device/Transmission Data
- Adjusting the Cells/TRXs/Channels Data
- Adjusting the BTS Data
- Reparenting BTSs
- N/A
- Reconfiguring a BTS
- Changing the Connection Between the BSC and the MSC
- Reconfiguring a Cell
- Reconfiguring a Channel
- N/A
- NodeB Reparenting Scenarios
- Reparenting NodeBs Under an RNC
- Reparenting NodeBs Between RNCs of the Same Version
- N/A

Training Methods

Lectures、 Demonstration

Duration

3 working days

Class Size

Min 6, max 12

1.2.40 OMS99 BSC6900 GU V900R014 Product Description



Objectives

On completion of this course, 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- BSC6900 System Overview
- BSC6900 Hardware Structure
 - Cabinets
 - Subracks
 - Subsystems and Boards
 - Cables
- BSC6900 Signal Flows
 - BSC6900 UMTS Signal Flows
 - BSC6900 GSM Signal Flows
 - BSC6900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.41 OMS98 BSC6900 GU V900R014 Operation and Maintenance



Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the BSC6900 routine operation
- Perform the BSC6900 routine maintenance

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description

Content

- OM System Introduction
- Operation Right Management
- Alarm management
- Log management
- Device panel management
- BSC maintenance
- Routine MML commands
- Trace management
- Performance monitoring
- N/A

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

3 working days

Class Size

Min 6, max 12

1.2.42 OMS97 BSC6900 GU V900R014 Data Configuration



Objectives

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

- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline MBSC data configuration procedure based on CME
- Complete MBSC data configuration
- Export and activate the configuration data

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description

Content

- Data Configuration Overview
- Preparation
- Global Data Configuration
- Equipment Data Configuration
- Interface Data Configuration
- Cell Data Configuration
- Concepts of CME
- MBSC Data Configuring
- MBSC Data Exporting

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

7 working days

Class Size

Min 6, max 12

1.2.43 OMS96 BSC6900 GU V900R014 Installation and Commissioning



Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Data Configuration

Content

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

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.44 OMS95 GBSS14.0 BSS Troubleshooting



Objectives

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

- Grasp BSC6900 GSM common fault disposal method
- Understand general procedure of fault judgment and location
- Master the way to prevent BSC6900 GSM fault
- Analyse and handle some typical cases
- Know how to find the fault in GSM BTS
- Know the common fault types
- Grasp GSM BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900 GU V900R014 Product Description
 - BSC6900 GU V900R014 Operation and Maintenance
 - BSC6900 GU V900R014 Data Configuration
 - BSC6900 GU V900R014 Installation and

Commissioning

Content

- BSC Common Faults Analysis
- Voice Faults
- Clock Faults
- Link / Interconnection Faults
- Loading Faults
- BTS Common Faults Analysis
- Transmission Faults
- Antenna Faults
- BTS3900 Hardware Overview
- General Procedures of Troubleshooting
- Procedure of BTS Status Verification
- Collecting Information for Locating BTS Faults
- Methods of Fault Judgment and Location
- Approach to prevent BTS fault
- Requirements for Maintenance Personnel
- General Procedures of Troubleshooting
- Basic Methods of Fault Judgment and Location
- Approach to prevent BSC fault

Training Methods

Lectures、Case-study、Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.45 OMS94 RAN14.0 BSS Troubleshooting



Objectives

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

- Describe UMTS RAN troubleshooting process
- Handling UMTS Transmission Faults
- Handling UMTS Equipments Faults
- Handling UMTS O/M Faults
- Handling UMTS Basic Service Faults
- Handling Failure to Install the NodeB LMT
- Handling NodeB High Frequency Deviation NodeB (E1) of Clock
- Handling NodeB Intermittent Interruption of CPRI Link
- Handling NodeB Sleeping Cell

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- 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
- Troubleshooting Overview
- Abnormal RTWP
- CE Faults
- Hardware Faults
- License Delivery Failure
- Clock Faults
- Cell Setup Failure at NodeB side
- Sleeping Cell
- OMCH Faults

Training Methods

Lectures, Case-study, Hands-on exercise

Duration

2.5 working days

Class Size

Min 6, max 12

1.2.46 OMS93 SRAN7.0 BSS Troubleshooting



Objectives

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

- Grasp BSC6900 GU common fault disposal method
- Analyse and handle some BSC6900 GU typical cases
- Know how to locate the fault in MBTS
- Know how to locate the causes of a fault
- Know how to solve a fault in MBTS
- Collect and analyze cases to improve the troubleshooting capability

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- Principles of MBTS Alarm Design and Operations
- Process of MBTS Troubleshooting
- Methods to Locate an MBTS Fault and Case Analysis
- Preventive Measures Against MBTS Faults

Training Methods

Lectures, Case-study, Hands-on exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.47 OMT99 MBTS GU V100R007 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- BTS3900 System Overview
- BTS3900 Hardware Structure
- BTS3900 Cable Connection
- BTS3900 Technical Specifications
- BTS3900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.48 OMT98 MBTS GU V100R007 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by web LMT
- Perform GSM BTS local operation by SMT
- Perform UMTS NodeB routine operation by LMT

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R007 Product Description

Content

- GSM BTS Operation and Maintenance
- BTS Remote Operation
- BTS Local Operation
- UMTS NodeB Operation and Maintenance
- Checking hardware
- LEDs
- Cable connections
- Site local maintenance
- Replacing boards
- Routine maintenance list

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.49 OMT97 MBTS GU V100R007 Data Configuration



Objectives

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

- Outline the procedure of MBTS data configuration
- Complete the MBTS initial data configuration based on CME
- Describe the meaning of some important parameters

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BTS3900 GU V100R007 Product Description

Content

- Overview of Configuring Multi-Mode Base Stations
- CME Introduction
- MBTS Configuration Mode
- MBTS Data Configuration Procedure
- MBTS Data Configuring
- MBTS Data Configuration without MBTS template
- MBTS Data Configuration with MBTS template
- MBTS Data Exporting and Activating

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2 working days

Class Size

Min 6, max 12

1.2.50 OMT96 MBTS GU V100R007 Installation and Commissioning



Objectives

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

- Understand the MBTS installation procedure.
- Describe the steps of MBTS commissioning.
- Master the commissioning of MBTS.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R007 Product Description

- BTS3900 GU V100R007 Data Configuration

Content

- Hardware Installation
- SMT/LMT Commissioning
- USB Commissioning
- MBTS System Overview
- MBTS Installation Procedures
- MBTS Commissioning Procedures
- MBTS Commissioning Scenarios
- Remote Commissioning

Training Methods

Lectures, Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.51 OMT95 MBTS GU V100R007 Troubleshooting



Objectives

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

- Know how to find the fault in BTS
- Know the common fault types
- Grasp BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R007 Product Description
- BTS3900 GU V100R007 Data Configuration

- BTS3900 GU V100R007 Installation and Commissioning
- BTS3900 GU V100R002 Operation and Maintenance

Content

- Principles of MBTS Alarm Design and Operations
- Process of MBTS Troubleshooting
- Methods to Locate an MBTS Fault and Case Analysis
- Preventive Measures Against MBTS Faults

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.52 OMS92 BSC6900 GU V900R013 - V900R014 Delta



Objectives

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

- Describe BSC6900 GU evolution overview
- Describe the hardware changing in BSC6900 GU and MBTS GU, including cabinet, subrack and boards.
- Describe the software changing in BSC6900 GU, including OMU board software and OM software
- Describe the new features of BSC6900 GU and MBTS GU.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in SRAN6.0 wireless network operation and maintenance

Content

- New/Enhanced Platform Features
- New/Enhanced GSM Configuration Features
- New/Enhanced UMTS Configuration Features
- New/Enhanced SRAN Configuration Features
- GU Maintainability and Testability
- 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
- GSM Maintainability and Testability

- NS Signaling Tracing over Gb Interface
- PDCH Loopback
- Enhanced BTS Deployment in Abis over IP Mode
- Optimized Signaling Tracing and Analysis
- BBU Supporting 126 TRXs and RRU Supporting 21-Level Cascading
- MAC Packet Capture and Uploading
- Enhanced CPRI O/M
- UMTS Maintainability and Testability
- Iub/Iu/Iur Transmission Resource Pool in RNC
- Node B security(Node B Integrated IPsec and Node B PKI Support)
- Multi-sectors solution
- GSM Feature
- Abis transmission backup enhancement
- Intelligent Battery Management
- IPHC in IP over E1
- Abis transmission backup enhancement
- UMTS Feature
- MOCN cell recourse demarcation
- Independent Demodulation of Signals from Multiple RRUs in One Cell
- BSC6900 Evolution Overview
- BSC6900 Hardware Evolution
- BSC6900 Typical Hardware Configuration
- UTRPc board introduction
- WBBPf board introduction
- Overview of the new TRX modules
- Product hardware of the new TRX modules
- Configuration specifications of the new TRX modules
- Applications and version matching policies of the new TRX modules

Training Methods

Lectures

Duration

2 working days

Class Size

Min 6, max 12

1.2.53 OMS91 BSC6900 GU V900R014 Data Reconfiguration



Objectives

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

- Describe the procedure of adjusting the BSC
- Describe the modification of OPC and DPC
- Perform the way to adding/removing subracks and boards
- expand the transmission resource in A, GB and Abis interface.
- Reconfiguring the Transmission Mode on A, Gb and Abis interface.
- Adjust the cell processing in DPU board
- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration

- BSC6900 GU V900R014 Installation and Commissioning

Content

- Modify OPC and DPC
- Modify N7 signaling link from 64k to 2M
- Add STP in A interface
- add subracks and boards
- Remove Boards and Subracks
- modify single OMU to double OMU
- Expand the transmission resource in A, GB and Abis interface.
- Reconfiguring the Transmission Mode
- Changing the Transmission Mode on the A Interface
- Reconfiguring the Transmission Mode on the Ater Interface
- Changing the Transmission Mode on the Gb Interface
- Changing the Transmission Mode on the Abis Interface
- Adjust the cell processing in DPU board
- BSC6900 WCDMA Data Reconfiguration
- Changing the Work Mode of a Board
- Setting the Working Mode of the OMU
- Changing Connections of Optical Fibers for Interface Boards
- Adjusting Boards and Subracks

Training Methods

Lectures, Demonstration

Duration

2 working days

Class Size

Min 6, max 12

1.2.54 OMS90 BSC6900 GU V900R014 Migration



Objectives

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

- Describe what is BSC migration
- Describe the procedure of the BSC migration
- Perform the BSC migration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- Changing the Connection Between the GSM BSC and the MSC
- Cutting Over an MSC (with IP Transmission Mode Retained over the A Interface)
- Cutting Over an MSC (TDM to TDM Transmission Mode over the A Interface)
- Cutting Over an MSC (TDM to IP Transmission Mode over the A Interface)
- WCDMA RNC Migration Scenarios
- Reparenting WCDMA RNC Between MGWs
- Reparenting WCDMA RNC Between MSC Servers
- Reparenting WCDMA RNC Between SGSN
- N/A

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.55 OMS89 BSC6900 GU V900R014 Expanding



Objectives

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

- Describe the procedure of expanding the BSC/RNC capacity
- Perform how to add a BSC/RNC board
- Perform how to add an EPS/RNC of BSC

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description

- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- Overview of Expanding the BSC Capacity
- Adding BSC/RNC Board
- Adding EPS Subrack

Training Methods

Lectures, Demonstration

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.56 OMT94 MBTS GU V100R007 Data Reconfiguration



Objectives

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

- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Reparent BTSs

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- Dynamic GSM Data Adjustment Introduction
- Adjusting the GSM Global/Device/Transmission Data
- Adjusting the GSM Cells/TRXs/Channels Data

- Adjusting the GSM BTS Data
- Reparenting GSM BTSs
- Reconfiguring UMTS 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
- Reconfiguring a GSM BTS via LMT
- Reconfiguring a GSM Cell via LMT
- Reconfiguring a GSM Channel via LMT
- Modifying the NodeB Clock Source, the Clock Working Mode, or the Time Information
- Adding the Board/Equipment to the NodeB
- Adjusting NodeB Connection Data
- Reconfiguring a Cell
- Reconfiguring the Channel

Training Methods

Lectures、 Demonstration

Duration

2 working days

Class Size

Min 6, max 12

1.2.57 OMT93 MBTS GU V100R007 Migration



Objectives

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

- Detail the scenarios of BTS/NodeB migration
- Detail the procedure of BTS/NodeB migration
- Perform the BTS/NodeB migration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration

- BSC6900 GU V900R014 Installation and Commissioning

Content

- BTS Reparenting Overview
- Reparenting BTSs within a BSC (TDM)
- Reparenting BTSs within a BSC (IP)
- Reparenting BTSs between BSCs (TDM/Static IP/Non-Static IP)
- NodeB Reparenting Scenarios
- Reparenting NodeBs Under an RNC
- Reparenting NodeBs Between RNCs of the Same Version

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.58 OMT92 MBTS GU V100R007 Expanding



Objectives

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

- Describe the procedures of expanding the BTS capacity
- Perform how to add BTS Cells
- Perform how to add BTS TRXs
- Perform how to add WBBP Board
- Perform how to add RF Unit

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description

- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- Overview of Expanding the BTS Capacity
- Adding a GSM BTS cell
- Adding a GSM BTS TRX
- Adding a UMTS Baseband Board to a 3900 Series Base Station
- Adding an UMTS RF Unit

Training Methods

Lectures, Demonstration

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.59 OMS88 BSC6900 GU V900R013-V900R014 Upgrade



Objectives

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

- Describe the software installation and upgrade flow
- Outline the backup and restore operations
- Complete the installation and upgrade tasks
- Grasp the OMU routine maintenance commands

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description

- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- BSC6900 OMU Introduction
- BSC6900 Application Software Upgrade Directly
- BSC6900 Application Software Upgrade by M2000
- OMU Operation and Maintenance

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.60 OMT91 MBTS GU V100R004 - V100R007 Upgrade



Objectives

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

- Describe the upgrade procedure
- Describe the upgrade of MBTS
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- MBTS GU Upgrade Overview
- MBTS GU Upgrade Guide based on LMT
- MBTS GU Upgrade Guide based on M2000

Training Methods

Lectures, Demonstration

Duration

2 working days

Class Size

Min 6, max 12

1.2.61 OMC83 GSM BSS14.0 Emergency Maintenance



Objectives

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

- Understand the Basic Symptoms About the Accident
- Know how to collect the related information
- Excute the quick emergency handling methods.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s):BSC6900 GSM V9R14 Product Description
- BSC6900 GSM V9R14 Operation and Maintenance
- BSC6900 GSM V9R14 Data Configuration

- MBTS GSM V1R7 Product Description
- MBTS GSM V1R7 Operation and Maintenance
- MBTS GSM V1R7 Data Configuration

Content

- Emergency Maintenance Overview
- Basic symptoms about the accident
- Collect related information
- Quick emergency handling methods
- Precautions and Emergency Maintenance for Large Traffic Overview
- Adjusting BSC Parameters Before Large Traffic
- Emergency Maintenance for Large Traffic

Training Methods

Lectures, Hands-on Exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.62 OWC40 WCDMA RAN14.0 Emergency Maintenance



Objectives

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

- Describe Brief Guide to Emergent Accidents
- implement Emergency Measures in Emergency Situations
- Describe Preparations and the Suggestions on the Parameter Value Change Before a Holiday
- implement Emergency Measures in Heavy Traffic Situations

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 WCDMA V900R012 Operation and Maintenance

- BSC6900 WCDMA V900R012 Data Configuration

Content

- Emergency Responses to Accidents in RNC
- CPU Overload on the SPU
- CPU Overload on the INT
- CPU Overload on the MPU
- BSC6900 UMTS Heavy Traffic Precautions and Emergency Measures
- Basic Knowledge
- Preparations and the Suggestions on the Parameter Value Change Before a Holiday
- Emergency Measures in Emergency Situations

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.63 OMS00 BSC6900/BSC6910 GU V900R015 Product Description



Objectives

On completion of this course, 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- BSC6900 System Overview
- BSC6900 Hardware Structure
- Cabinets
- Subracks

- Subsystems and Boards
- Cables
- BSC6900 Signal Flows
- BSC6900 UMTS Signal Flows
- BSC6900 GSM Signal Flows
- BSC6900 Typical Configuration
- BSC6910 System Overview
- BSC6910 Hardware Structure
- Cabinets
- Subracks
- Subsystems and Boards
- Cables
- BSC6900 Signal Flows
- BSC6900 UMTS Signal Flows
- BSC6900 GSM Signal Flows
- BSC6900 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.64 OMS01 BSC6900/BSC6910 GU V900R015 Operation and Maintenance



Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the BSC6900 routine operation
- Perform the BSC6900 routine maintenance

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R015 Product Description

Content

- OM System Introduction
- Alarm Monitoring
- Device Maintenance
- Transmission Detecting
- Troubleshooting Assistant
- Hardware Replacement
- Data Backup and Restore
- Other OM Functions

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

3 working days

Class Size

Min 6, max 12

1.2.65 OMS02 BSC6900/BSC6910 GU V900R015 Data Configuration



Objectives

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

- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline MBSC data configuration procedure based on CME
- Complete MBSC data configuration
- Export and activate the configuration data

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description

Content

- Data Configuration Overview
- Preparation
- Global Data Configuration
- Equipment Data Configuration
- Interface Data Configuration
- Cell Data Configuration
- Introduction of CME
- BSC6900/BSC6910 Data Configuration
- BSC6900/BSC6910 Data ExportN/A

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

7 working days

Class Size

Min 6, max 12

1.2.66 OMS03 BSC6900/BSC6910 GU V900R015 Installation and Commissioning



Objectives

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

- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Data Configuration

Content

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

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.67

NA GBSS15.0 BSS Troubleshooting



Objectives

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

- Grasp BSC6900 GSM common fault disposal method
- Understand general procedure of fault judgment and location
- Master the way to prevent BSC6900 GSM fault
- Analyse and handle some typical cases
- Know how to find the fault in GSM BTS
- Know the common fault types
- Grasp GSM BTS fault disposal method
- Know how to prevent the fault

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900 GU V900R015 Product Description
 - BSC6900 GU V900R015 Operation and Maintenance
 - BSC6900 GU V900R015 Data Configuration
 - BSC6900 GU V900R015 Installation and

Commissioning

Content

- BSC Common Faults Analysis
- Voice Faults
- Clock Faults
- Link / Interconnection Faults
- Loading Faults
- BTS Common Faults Analysis
- Transmission Faults
- Antenna Faults
- BTS3900 Hardware Overview
- General Procedures of Troubleshooting
- Procedure of BTS Status Verification
- Collecting Information for Locating BTS Faults
- Methods of Fault Judgment and Location
- Approach to prevent BTS fault
- Requirements for Maintenance Personnel
- General Procedures of Troubleshooting
- Basic Methods of Fault Judgment and Location
- Approach to prevent BSC fault

Training Methods

Lectures、Case-study、Hands-on exercise

Duration

2 working days

Class Size

Min 6, max 12

1.2.68 NA RAN15.0 BSS Troubleshooting



Objectives

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

- Describe UMTS RAN troubleshooting process
- Handling UMTS Transmission Faults
- Handling UMTS Equipments Faults
- Handling UMTS O/M Faults
- Handling UMTS Basic Service Faults
- Handling Failure to Install the NodeB LMT
- Handling NodeB High Frequency Deviation NodeB (E1) of Clock
- Handling NodeB Intermittent Interruption of CPRI Link
- Handling NodeB Sleeping Cell

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- 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
- Troubleshooting Overview
- Abnormal RTWP
- CE Faults
- Hardware Faults
- License Delivery Failure
- Clock Faults
- Cell Setup Failure at NodeB side
- Sleeping Cell
- OMCH Faults

Training Methods

Lectures, Case-study, Hands-on exercise

Duration

2.5 working days

Class Size

Min 6, max 12

1.2.69 NA SRAN8.0 BSS Troubleshooting



Objectives

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

- Grasp BSC6900 GU common fault disposal method
- Analyse and handle some BSC6900 GU typical cases
- Know how to locate the fault in MBTS
- Know how to locate the causes of a fault
- Know how to solve a fault in MBTS
- Collect and analyze cases to improve the troubleshooting capability

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- Principles of MBTS Alarm Design and Operations
- Process of MBTS Troubleshooting
- Methods to Locate an MBTS Fault and Case Analysis
- Preventive Measures Against MBTS Faults

Training Methods

Lectures, Case-study, Hands-on exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.70 OMT00 MBTS GU V100R008 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- MBTS System Overview
- MBTS Hardware Structure
- MBTS Cable Connection
- MBTS Technical Specifications
- MBTS Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.71 OMT01 MBTS GU V100R008 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by web LMT
- Perform GSM BTS local operation by SMT
- Perform UMTS NodeB routine operation by LMT

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GU V100R008 Product Description

Content

- Connecting to BTS O/M System

- Alarm Management via M2000
- MBTS Device maintenance
- MBTS Transmission Layer Maintenance
- MBTS Radio Layer maintenance
- MBTS Tracing Management
- MBTS Monitoring Management
- MBTS System Management
- Checking hardware
- LEDs
- Cable connections
- Site local maintenance
- Replacing boards
- Routine maintenance list

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2.5 working days

Class Size

Min 6, max 12

1.2.72 OMT02 MBTS GU V100R008 Data Configuration



Objectives

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

- Outline the procedure of MBTS data configuration
- Complete the MBTS initial data configuration based on CME
- Describe the meaning of some important parameters

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BTS3900 GU V100R008 Product Description

Content

- MBTS Data Configuration Introduction
- Preparing MBTS Data
- Creating MBTS Data
- Exporting MBTS Data
- Creating MBTS Data in Batches (Summary Data File)

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2 working days

Class Size

Min 6, max 12

1.2.73 OMT03 MBTS GU V100R008 Commissioning



Objectives

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

- Understand the MBTS installation procedure.
- Describe the steps of MBTS commissioning.
- Master the commissioning of MBTS.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BTS3900 GU V100R008 Product Description
- BTS3900 GU V100R008 Data Configuration

Content

- Overview of MBTS Commissioning
- Commissioning the MBTS based on M2000
- Commissioning the MBTS based on M2000 + USB

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.74 OMT04 MBTS GU TOP Alarm Handling



Objectives

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

- Comprehend the basic concepts of alarms
- Perform the methods of handling alarms via M2000 / LMT
- Complete TOP alarms handling

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 WCDMA V900R012 Operation and

Maintenance

- BSC6900 WCDMA V900R012 Data Configuration

Content

- Basic Concept / Operation of Alarm
- Procedure of Alarm Handling
- GSM Top Alarm Handling
- UMTS Top Alarm Handling

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.75 OMS04 BSC6900/BSC6910 GU V900R015 Data Reconfiguration



Objectives

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

- Describe the procedure of adjusting the BSC
- Describe the modification of OPC and DPC
- Perform the way to adding/removing subracks and boards
- expand the transmission resource in A, GB and Abis interface.
- Reconfiguring the Transmission Mode on A, Gb and Abis interface.
- Adjust the cell processing in DPU board
- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- Changing the Connection Between the BSC and the MSC
- Cutting Over an MSC (with IP Transmission Mode Retained over the A Interface)
- Cutting Over an MSC (TDM to TDM Transmission Mode over the A Interface)
- Cutting Over an MSC (TDM to IP Transmission Mode over the A Interface)
- Modify OPC and DPC
- Modify N7 signaling link from 64k to 2M
- Add STP in A interface
- add subracks and boards
- Remove Boards and Subracks
- modify single OMU to double OMU
- expand the transmission resource in A, GB and Abis interface.
- Reconfiguring the Transmission Mode
- Changing the Transmission Mode on the A Interface
- Reconfiguring the Transmission Mode on the Ater Interface
- Changing the Transmission Mode on the Gb Interface
- Changing the Transmission Mode on the Abis Interface
- Adjust the cell processing in DPU board(BSC6900)
- N/A
- 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
- N/A
- Reconfiguring resource management based on

NodeBs

- Reconfiguring resource management based on cells
- Reconfiguring resource management based on NCPs or CCPs
- N/A

Training Methods

Lectures, Demonstration

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.76 OMS05 BSC6900/BSC6910 GU V900R015 Migration



Objectives

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

- Describe what is BSC migration
- Describe the procedure of the BSC migration
- Perform the BSC migration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- BSC Migration Summary
- Reparenting BSC Between MSC Servers
- Reparenting BSC Between SGSN
- N/A
- RNC Migration Scenarios
- Adjusting the Connection Between the RNC and MSC (ATM 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)
- N/A

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.77 OMS06 BSC6900/BSC6910 GU V900R015 Expanding



Objectives

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

- Describe the procedure of expanding the BSC/RNC capacity
- Perform how to add a BSC/RNC board
- Perform how to add an EPS/RNC of BSC

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900 GU V900R015 Product Description
 - BSC6900 GU V900R015 Operation and Maintenance
 - BSC6900 GU V900R015 Data Configuration

- BSC6900 GU V900R015 Installation and Commissioning

Content

- Overview of Expanding the BSC Capacity
- Adding a BSC Board
- Adding an EPS Subrack
- N/A
- 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
- N/A

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.78 OMT05 MBTS GU V100R008 Data Reconfiguration



Objectives

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

- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Reparent BTSs

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- Dynamic Data Adjustment Introduction
- Adjusting the Global/Device/Transmission Data
- Adjusting the Cells/TRXs/Channels Data
- Adjusting the BTS Data
- Reparenting BTSs
- N/A
- Reconfiguring a BTS via LMT
- Changing the Connection Between the BSC and the MSC via LMT
- Reconfiguring a Cell via LMT
- Reconfiguring a Channel via LMT
- N/A
- Changing Signaling Points
- Reconfiguring a Cell
- Modifying an SCCPCH
- figuring Neighboring Cells
- Reconfiguring the NodeB Clock Source or the Clock Working Mode

Training Methods

Lectures、 Demonstration

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.79 OMT06 MBTS GU V100R008 Migration



Objectives

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

- Detail the scenarios of BTS/NodeB migration
- Detail the procedure of BTS/NodeB migration
- Perform the BTS/NodeB migration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration

- BSC6900 GU V900R015 Installation and Commissioning

Content

- BTS Reparenting Overview
- Reparenting BTSs within a BSC (TDM)
- Reparenting BTSs within a BSC (IP)
- Reparenting BTSs between BSCs (TDM/Static IP/Non-Static IP)
- NodeB Reparenting Scenarios
- Reparenting NodeBs Under an RNC
- Reparenting NodeBs Between RNCs of the Same Version

Training Methods

Lectures, Demonstration

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.80 OMT07 MBTS GU V100R008 Expanding



Objectives

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

- Describe the procedures of expanding the BTS capacity
- Perform how to add BTS Cells
- Perform how to add BTS TRXs
- Perform how to add WBBP Board
- Perform how to add RF Unit

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description

- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- Overview of Expanding the BTS Capacity
- Adding a BTS cell
- Adding a BTS TRX
- Adding a Baseband Board to a 3900 Series Base Station
- Adding an RF Unit

Training Methods

Lectures, Demonstration

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.81 OMS07 BSC6900/BSC6910 GU V900R015 Patch and Upgrade



Objectives

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

- Describe the software installation and upgrade flow
- Outline the backup and restore operations
- Complete the installation and upgrade tasks
- Grasp the OMU routine maintenance commands

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R015 Product Description

- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- BSC6900/BSC6910 OMU Introduction
- BSC6900/BSC6910 Application Software Upgrade Directly
- BSC6900/BSC6910 Application Software Upgrade by M2000
- OMU Operation and Maintenance

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.82 OMT08 MBTS GU V100R008 Patch and Upgrade



Objectives

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

- Describe the upgrade procedure
- Describe the upgrade of MBTS
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R015 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

Content

- MBTS GU Upgrade Overview
- MBTS GU Upgrade Guide based on LMT
- MBTS GU Upgrade Guide based on M2000

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.83 OMC04 GSM BSS15.0 Emergency Maintenance



Objectives

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

- Understand the Basic Symptoms About the Accident
- Know how to collect the related information
- Excute the quick emergency handling methods.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s):BSC6900 GSM V9R14 Product Description
- BSC6900 GSM V9R15 Operation and

Maintenance

- BSC6900 GSM V9R15 Data Configuration
- MBTS GSM V1R8 Product Description
- MBTS GSM V1R8 Operation and Maintenance
- MBTS GSM V1R8 Data Configuration

Content

- Emergency Maintenance Overview
- Basic symptoms about the accident
- Collect related information
- Quick emergency handling methods

Training Methods

Lectures, Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.84 OMC05 GSM BSS15.0 Precautions and Emergency Maintenance for Large Traffic



Objectives

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

- Understand Precautions and Emergency Maintenance for Large Traffic
- Know how to adjust BSC parameters before large traffic
- Excute emergency maintenance for large traffic

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s):BSC6900 GSM V9R14 Product Description

- BSC6900 GSM V9R16 Operation and Maintenance
- BSC6900 GSM V9R15 Data Configuration
- MBTS GSM V1R8 Product Description
- MBTS GSM V1R8 Operation and Maintenance
- MBTS GSM V1R8 Data Configuration

Content

- Precautions and Emergency Maintenance for Large Traffic Overview
- Adjusting BSC Parameters Before Large Traffic
- Emergency Maintenance for Large Traffic

Training Methods

Lectures, Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.85 OWC51 WCDMA RAN15.0 Emergency Maintenance



Objectives

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

- Describe Brief Guide to troubleshoot emergency fault
- Collect fault information for troubleshooting
- Grasp some typical emergency faults troubleshooting

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 WCDMA V9R15 Product Description
- BSC6900 WCDMA V9R15 Operation and Maintenance
- BSC6900 WCDMA V9R15 Data Configuration
- MBTS WCDMA V1R8 Product Description
- MBTS WCDMA V1R8 Operation and Maintenance

- MBTS WCDMA V1R8 Data Configuration

Content

- 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

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.86 OWC52 WCDMA RAN15.0 Heavy Traffic Precaution



Objectives

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

- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 WCDMA V9R15 Product Description
- BSC6900 WCDMA V9R15 Operation and Maintenance
- BSC6900 WCDMA V9R15 Data Configuration
- MBTS WCDMA V1R8 Product Description
- MBTS WCDMA V1R8 Operation and Maintenance
- MBTS WCDMA V1R8 Data Configuration
-

Content

- 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 lu Signaling Plane
- CN overload

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.87 OMS08 BSC6900/BSC6910 GU V900R014 - V900R015 Delta for Equipment



Objectives

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

- Know the capacity specifications of the BSC6900/6910 V900R015
- Know the new hardware adopted by the BSC6900/6910 V900R015
- Know the hardware configuration and capacity of the BSC6900/6910 V900R015

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- BSC6900/6910 Evolution Overview
- BSC6900/6910 Hardware Evolution
- BSC6900/6910 Typical Hardware Configuration

Training Methods

Lectures

Duration

0.25 working day

Class Size

Min 6, max 12

1.2.88 OMT09 MBTS GU V100R007 - V100R008 Delta for Hardware



Objectives

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

- Know the new hardware adopted by the MBTS GU V100R008
- Know the New hardware configuration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 WCDMA V900R012 Operation and Maintenance

- BSC6900 WCDMA V900R012 Data Configuration

Content

- SRAN8.0 Solution Introduction
- Overview of the new TRX modules
- Product hardware of the new TRX modules
- Configuration specifications of the new TRX modules

Training Methods

Lectures

Duration

0.25 working day

Class Size

Min 6, max 12

1.2.89 OMS09 BSC6900/BSC6910 GU V900R014 - V900R015 New Maintainability and Testability Feature



Objectives

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

- Know the principles and application scenarios of the O/M features
- Know the configuration procedures and implementation methods of the O/M features

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- GBSS O/M feature
- Enhanced Multi-Site Cell Maintenance and RF Maintenance

- CGI Used in MML Commands for Cell Identification
- eGBTS O/M Changes
- WRAN O/M feature
- Enhanced Single-User Signaling Tracing During RRC Connection Setup
- Trace of UEs Belonging to a Certain Type
- Optimized PCHR Log Storage on the OMU
- Improved Speech Quality Problem Diagnosis: FPPM Detection
- Transmission and Platform Services Maintenance Features
- Automatic Detection of Optical Power and Alarm Reporting
- Enhanced Crossed Pair Connection Detection
- Cell Out of Service Alarm Masked at the Cell Level
- Enhanced OMU Maintenance and Test
- Remote Deployment Optimization: DHCP Trace
- DSCP Value Change Detection

Training Methods

Lectures

Duration

0.75 working day

Class Size

Min 6, max 12

1.2.90 OMS10 BSC6900/BSC6910 GU V900R014 - V900R015 New Feature



Objectives

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

- Know the principles and application scenarios of the new features
- Know the configuration procedures and implementation methods of the new features

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration
- BSC6900 GU V900R014 Installation and Commissioning

Content

- GSM Features
- Baseband Extension
- Enhanced Multi-site Cell
- Synchronous Ethernet-based Soft-Synchronized Network
- IP QoS-EAMRC
- UMTS Features
- New RNC Platform
- New NodeB Hardware-WRFU
- New Micro NodeB -BTS3803E
- RNC in Pool
- SRAN Features
- Transmission Resource Pool in RNC/BSC
- Enhanced Backup Power Saving

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.91 OMS11 CME GU V200R12 - V200R13 Delta



Objectives

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

- Know the new feature of CME
- Master the new feature for GSM, UMTS and SRAN

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R014 Product Description
- BSC6900 GU V900R014 Operation and Maintenance
- BSC6900 GU V900R014 Data Configuration

- BSC6900 GU V900R014 Installation and Commissioning

Content

- New NE Types
- New and Modified Features on the Platform
- New and Modified Common Features
- New and Modified Features for GSM Configuration
- New and Modified Features for UMTS Configuration
- New and Modified Features for SRAN Configuration

Training Methods

Lectures

Duration

0.25 working day

Class Size

Min 6, max 12

1.2.92 OMT10 MBTS GUL V100R008 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- MBTS System Overview
- MBTS Hardware Structure
- MBTS Cable Connection
- MBTS Technical Specifications
- MBTS Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.93 OMT11 MBTS GUL V100R008 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by web LMT
- Perform GSM BTS local operation by SMT
- Perform UMTS NodeB routine operation by LMT

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GUL V100R008 Product Description

Content

- Checking hardware

- LEDs
- Cable connections
- Site local maintenance
- Replacing boards
- Routine maintenance list
- Connecting to BTS O/M System
- Alarm Management via M2000
- MBTS Device maintenance
- MBTS Transmission Layer Maintenance
- MBTS Radio Layer maintenance
- MBTS Tracing Management
- MBTS Monitoring Management
- MBTS System Management

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2.5 working days

Class Size

Min 6, max 12

1.2.94 OMT12 MBTS GUL V100R008 Data Configuration



Objectives

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

- Outline the procedure of MBTS data configuration
- Complete the MBTS initial data configuration based on CME
- Describe the meaning of some important parameters

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BTS3900 GUL V100R008 Product Description

Content

- MBTS Data Configuration Introduction
- Preparing MBTS Data
- Creating MBTS Data
- Exporting MBTS Data
- Creating MBTS Data in Batches (Summary Data File)

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2 working days

Class Size

Min 6, max 12

1.2.95 OMT13 MBTS GUL V100R008 Commissioning



Objectives

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

- Understand the MBTS installation procedure.
- Describe the steps of MBTS commissioning.
- Master the commissioning of MBTS.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BTS3900 GUL V100R008 Product Description
- BTS3900 GUL V100R008 Data Configuration

Content

- Overview of MBTS Commissioning
- Commissioning the MBTS based on M2000
- Commissioning the MBTS based on M2000 + USB

Training Methods

Lectures, Hands-on exercise

Duration

0.75 working day

Class Size

Min 6, max 12

1.2.96 OMT14 MBTS GUL TOP Alarm Handling



Objectives

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

- Comprehend the basic concepts of alarms
- Perform the methods of handling alarms via M2000 / LMT
- Complete TOP alarms handling

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 WCDMA V900R012 Operation and Maintenance

- BSC6900 WCDMA V900R012 Data Configuration

Content

- Basic Concept / Operation of Alarm
- Procedure of Alarm Handling
- GSM Top Alarm Handling
- UMTS Top Alarm Handling
- Basic Concept / Operation of Alarm
- LTE Top Alarm Handling

Training Methods

Lectures

Duration

0.75 working day

Class Size

Min 6, max 12

1.2.97 OMS12 GU IPRAN Fundamental



Objectives

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

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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- IP Origin and Standards
- IP RAN Networking Overview
- IP Protocol Structure and Service Implementation
- Comparison and Prospect of IP RAN Technologies

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.98 OMS13 GU IPRAN MSTP/PTN Networking



Objectives

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

- 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 implementation of key features for IP RAN MSTP networking
 - Understand differences between the layer 2 networking and layer 3 networking
 - Learn about the concepts and advantages of IP RAN
 - Understand IP RAN networking variations
 - Learn data exchanges and encapsulation in the packet transport network (PTN)
 - Understand implementation of the key features using PTN networking for the IP RAN
 - Understand the differences between the Layer 2 networking and Layer 3 networking
- Successful completion of the following course(s):
 - BSC6900 GU V900R013/14/15 Product Description
 - BSC6900 GU V900R015 Operation and Maintenance
 - BSC6900 GU V900R015 Data Configuration
 - BSC6900 GU V900R015 Installation and Commissioning
 - BTS3900 GU V100R006/7/8 Product Description
 - BTS3900 GU V100R006/7/8 Data Configuration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- IP RAN Overview
- MSTP Networking for IP RANs
- IP RAN Development
- Introduction to IP RAN
- PTN Networking for IP RAN
- IP RAN Development

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.99 OMS14 GU IPRAN Networking Planning



Objectives

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

- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- IP RAN Design Basics
- IP RAN Resource Planning
- IP RAN Internetworking Switching Process

Training Methods

Lectures

Duration

0.75 working day

Class Size

Min 6, max 12

1.2.100 OMS15 GU IPRAN Feature Application



Objectives

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

- 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
- Know how to handle faults that occur in reliability-ensuring application in different scenarios
- 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 the differences between the IEEE 1588v2 technology and synchronous Ethernet technology
- 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
- Learn the parameters and commands used to

ensure the QoS of IP RANs

- Describe the procedures of implementing QoS in IP RAN end to end (E2E) services
- Learn different QoS configuration and applications in different protocol and networking scenarios

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- IP RAN Reliability Requirements and Solution Application
- IP RAN Reliability Schemes for Different Interfaces
- IP RAN Reliability Parameter Configuration
- Requirements and Functions of IP RAN Clocks
- Application of IP RAN Clocks
- Parameter Configuration of IP RAN Clocks
- QoS Overview

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- QoS Configuration and Application
 - E2E QoS Implementation

Training Methods

Lectures

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.101 OMS16 GU IPRAN Maintenance and Monitoring



Objectives

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

- 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 check
- Monitor IP RAN transmission links, analyze and locate the faults
- Learn the monitoring points for locating common 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
- Learn methods for using packet capturing tool for IP networks
- Learn about the process of analyzing packets and locating faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- Overview for IP RAN O/M
- Active Monitoring Scheme and Implementation for IP RANs
- Active Monitoring for Common Faults in IP RANs
- Overview of IP RAN Troubleshooting
- Application of IP RAN Tools
- Ping
- Tracert
- Packet capturing tool

Training Methods

Lectures

Duration

0.75 working day

Class Size

Min 6, max 12

1.2.102 OMS17 GU IPRAN Troubleshooting



Objectives

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

- Understand the IP transmission troubleshooting roadmap
- 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
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description

Content

- IP Transmission Troubleshooting Roadmap
- IP Transmission Faults
- Three Steps in IP Transmission Fault Isolation
- Analysis of Typical IP Transmission Troubleshooting Cases

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.103 OMS18 GSM IPRAN Evolution Overview



Objectives

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

- Describe the IP Evolution
- Grasp the key steps in IP Evolution
- Understand the IP Evolution Policies

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance

- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- Description of the IP Evolution
- Key Steps in IP Evolution
- IP Evolution Policies
- Clock Design

Training Methods

Lectures

Duration

0.25 working day

Class Size

Min 6, max 12

1.2.104 OMC80 GSM IPRAN A over IP Reconstruction



Objectives

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

- Understand A over IP Networking, Hardware and IP design
- Prepare A over IP reconstruction script
- verify the A over IP reconstruction

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance

- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- A over IP Networking design
- A over IP Hardware design
- A over IP IP design
- A over IP Operation guide
- A over IP Test Verification

Training Methods

Lectures

Duration

0.75 working day

Class Size

Min 6, max 12

1.2.105 OMC81 GSM IPRAN Gb over IP Reconstruction



Objectives

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

- Understand Gb over IP Networking, Hardware and IP design
- Prepare Gb over IP reconstruction script
- verify the Gb over IP reconstruction

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance

- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- Gb over IP Networking design
- Gb over IP Hardware design
- Gb over IP IP design
- Gb over IP Operation guide
- Gb over IP Test verification

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.106 OMC82 GSM IPRAN Abis over IP Reconstruction



Objectives

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

- Understand Abis over IP Networking, Hardware and IP design
- Prepare Abis over IP reconstruction script
- verify the Abis over IP reconstruction

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance

- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning
- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- Abis over IP Networking design
- Abis over IP Hardware design
- Abis over IP IP design
- Abis over IP Operation guide
- Abis over IP Test verification
- N/A

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.107 OWI05 WCDMA IPRAN Reconstruction over Iub Interface



Objectives

On completion of this course, 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and Commissioning

- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- 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
- 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

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.108 OWI06 WCDMA IPRAN Reconstruction over luCS Interface



Objectives

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

- Describe the background of IPRAN Reconstruction
- Understand IPRAN basic knowledge about RNC
- Understand IPRAN networking policy
- Understand the procedure of Reconstruction in lu-CS interface from ATM to IP

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900 GU V900R013/14/15 Product Description
- BSC6900 GU V900R015 Operation and Maintenance
- BSC6900 GU V900R015 Data Configuration
- BSC6900 GU V900R015 Installation and

Commissioning

- BTS3900 GU V100R006/7/8 Product Description
- BTS3900 GU V100R006/7/8 Data Configuration

Content

- IP RAN Network Overview
- IP RAN Basic Knowledge
- IP Network Design Policy for luCS Interface
- lu-CS Interface Networking Solution
- Board and Port Reliability Backup
- Transport Layer Reliability
- luCS ATM to IP Reconstruction Solution
- luCS ATM to IP Reconstruction Cases
- Reconstruction Introduction
- Procedure of Hardware Replacement
- Data Configuration of IP Reconstruction
- Key Actions During IP Reconstruction

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.109 OMC06 BSC6900/BSC6910 GSM Fault Information Collecting



Objectives

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

- Describe the OMU Maintenance and Operation
- Know how to collect the fault information for CS and PS fault
- Describe where is the different file in OMU.
- Describe the functions of different files

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description

- BSC6900 GU V9R15 Operation and Maintenance
- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- OMU Overview
- CS Fault information collecting
- PS Fault information collecting

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.110 OMC07 BSC6900/BSC6910 CS Troubleshooting



Objectives

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

- Describe the CS Fault Troubleshooting flow
- Know how to do Single pass and no voice Troubleshooting
- Know how to do Cross pass Troubleshooting
- Know how to do Noise Troubleshooting
- Know how to do Echo Troubleshooting

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description

- BSC6900 GU V9R15 Operation and Maintenance
- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- CS Fault Troubleshooting flow
- Single pass and no voice Troubleshooting
- Cross pass Troubleshooting
- Noise Troubleshooting
- Echo Troubleshooting

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.111 OMC08 BSC6900/BSC6910 PS Troubleshooting



Objectives

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

- Describe the PS Fault Troubleshooting flow
- Know how to do PS Data rate Troubleshooting
- Know how to do PS Access Troubleshooting
- Know how to Anylase PS KPI

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and

Maintenance

- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- PS Fault Troubleshooting flow
- PS Data rate Troubleshooting
- PS Access Troubleshooting
- PS KPI Anylase

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.112 OMC09 BSC6900/BSC6910 IP Transmission Troubleshooting



Objectives

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

- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and

Maintenance

- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- TCP/IP Protocol
- Physical layer Troubleshooting
- Data link layer Troubleshooting
- Network layer Troubleshooting
- LAPD/SCTP Troubleshooting
- IPPATH Troubleshooting

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.113 OMC10 BSC6900/BSC6910 Clock Troubleshooting



Objectives

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

- Describe Clock Fault Troubleshooting Flow
- Know how to do Clock troubleshooting

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and

Maintenance

- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- Clock Fault Troubleshooting

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.114 OWC57 WCDMA RAN15.0 Fault Information Collecting



Objectives

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

- Describe the OMU Maintenance and Operation
- Know how to collect the fault information for different faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and Maintenance
- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- 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

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.115 OWC39 BSC6900/BSC6910 WCDMA R15 Troubleshooting



Objectives

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

- Know how to handle RNC equipment-related faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and Maintenance

- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- OMU Service Abnormality
- Equipment Troubleshooting
- Service Setup Failure Troubleshooting
- PS Relocation and Inter-RAT Handover Failure Troubleshooting

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.116 OWB36 NodeB WCDMA V200R015 Troubleshooting



Objectives

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

- Know how to handle NodeB-related faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and Maintenance
- BSC6900 GU V9R15 Data Configuration

- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- RTWP Fault
- CE Fault
- Clock Reference Fault
- CPRI Link Fault
- RF Channel Failure

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.117 OWC58 RAN15.0 Transmission Troubleshooting



Objectives

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

- Know how to handle ATM Transmission Faults
- Know how to handle IP Transmission Faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and Maintenance
- BSC6900 GU V9R15 Data Configuration
- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance

- MBTS GU V1R8 Data Configuration

Content

- ATM Transmission Faults Troubleshooting
- 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

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.118 OWC59 BSC6900/BSC6910 CS and PS Troubleshooting



Objectives

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

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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V9R15 Product Description
- BSC6900 GU V9R15 Operation and Maintenance
- BSC6900 GU V9R15 Data Configuration

- MBTS GU V1R8 Product Description
- MBTS GU V1R8 Operation and Maintenance
- MBTS GU V1R8 Data Configuration

Content

- Voice Service Problems
- Single Pass Voice Fault
- Noise Fault
- HSPA+ and HSPA Data Transmission
- HSUPA Data Transmission Fault Analysis
- HSDPA Data Transmission Fault
- Cell Setup Failure

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.119 OMS20 BSC6900/BSC6910 GU R16 Product Description



Objectives

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

- Detail the system structure of BSC6900/BSC6910
- Detail the functions of the components of BSC6900/BSC6910
- Detail the signal flows in BSC6900/BSC6910
- List the typical hardware configuration of BSC6900/BSC6910

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- BSC6900 System Overview
- BSC6900 Hardware Structure
- ◇ Cabinets

- ◇ Subracks
- ◇ Subsystems and Boards
- ◇ Cables
- BSC6900 Signal Flows
- ◇ BSC6900 UMTS Signal Flows
- ◇ BSC6900 GSM Signal Flows
- BSC6900 Typical Configuration
- BSC6910 System Overview
- BSC6910 Hardware Structure
- ◇ Cabinets
- ◇ Subracks
- ◇ Subsystems and Boards
- ◇ Cables
- BSC6910 Signal Flows
- ◇ BSC6910 UMTS Signal Flows
- ◇ BSC6910 GSM Signal Flows
- BSC6910 Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.120 OMS21 BSC6900/BSC6910 GU R16 Routine Operation and Maintenance



Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the BSC6900 routine operation
- Perform the BSC6900 routine maintenance

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product

Description

Content

- OM System Introduction
- Alarm Monitoring
- Device Maintenance
- Transmission Detecting
- Troubleshooting Assistant
- Hardware Replacement
- Data Backup and Restore
- Other OM Functions

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

3 working days

Class Size

Min 6, max 12

1.2.121 OMS22 BSC6900/BSC6910 GU R16 Initial Data Configuration



Objectives

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

- Detail the Procedure of BSC6900 Data Configuration
- Perform Global Data Configuration
- Perform Equipment Data Configuration
- Perform Interface Configuration
- Perform Cell Configuration
- Outline MBSC data configuration procedure based on CME and LMT
- Complete MBSC data configuration
- Export and activate the configuration data

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following

course(s):BSC6900/BSC6910 GU R16 Product Description

Content

- Data Configuration Overview
- Preparation for configuration
- Global Data Configuration
- Equipment Data Configuration
- Interface Data Configuration
- Cell Data Configuration
- Introduction of CME
- Configuration Preparation
- BSC6900/BSC6910 Data Configuration
- BSC6900/BSC6910 Data Export

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

6 working days

Class Size

Min 6, max 12

1.2.122 OMS23 BSC6900/BSC6910 GU R16 Installation and Commissioning



Objectives

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

- Describe BSC6900/BSC6910 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900/BSC6910 GU R16 Product Description

Content

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

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.123 OMT20 MBTS GU V100R009 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- MBTS System Overview
- MBTS Hardware Structure
- MBTS Cable Connection
- MBTS Technical Specifications
- MBTS Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.124 OMT21 MBTS GU V100R009 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by U2000
- Perform GSM BTS local operation by LMT
- Perform UMTS NodeB routine operation by LMT and U2000

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- MBTS GU V100R009 Product Description

Content

- Connecting to BTS O/M System

- Alarm Management via U2000
- MBTS Device maintenance
- MBTS Transmission Layer Maintenance
- MBTS Radio Layer maintenance
- MBTS Tracing Management
- MBTS Monitoring Management
- MBTS System Management
- Checking hardware
- ◇ LEDs
- ◇ Cable connections
- Site local maintenance
- Replacing boards
- Routine maintenance list

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2.5 working days

Class Size

Min 6, max 12

1.2.125 OMT22 MBTS GU V100R009 Initial Data Configuration



Objectives

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

- Outline the procedure of MBTS data configuration
- Complete the MBTS initial data configuration based on CME
- Describe the meaning of some important parameters

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- MBTS GU V100R009 Product Description

Content

- MBTS Data Configuration Introduction
- Preparing MBTS Data
- Creating MBTS Data
- Exporting MBTS Data
- Creating MBTS Data in Batches (Summary Data File)

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2 working days

Class Size

Min 6, max 12

1.2.126 OMT23 MBTS GU V100R009 Commissioning



Objectives

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

- Understand the MBTS installation procedure.
- Describe the steps of MBTS commissioning.
- Master the commissioning of MBTS.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following

course(s):

- MBTS GU V100R009 Product Description
- MBTS GU V100R009 Initial Data Configuration

Content

- Overview of MBTS Commissioning
- Commissioning the MBTS based on U2000
- Commissioning the MBTS based on U2000 + USB

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.127 OMT24 MBTS GU V100R009 TOP Alarm Handling



Objectives

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

- Comprehend the basic concepts of alarms
- Perform the methods of handling alarms via U2000 / LMT
- Complete TOP alarms handling

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration

Content

- Basic Concept / Operation of Alarm
- Procedure of Alarm Handling
- GSM Top Alarm Handling
- UMTS Top Alarm Handling

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.128 OMS24 BSC6900/BSC6910 GU R16 Dynamic Data Configuration



Objectives

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

- Describe the procedure of adjusting the BSC
- Describe the modification of OPC and DPC
- Perform the way to adding/removing subracks and boards
- expand the transmission resource in A, Gb and Abis interface.
- Reconfiguring the Transmission Mode on A, Gb and Abis interface.
- Adjust the cell processing in DPU board
- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- BSC6900/BSC6910 GU R16 Installation and

Commissioning

Content

- Changing the Connection Between the BSC and the MSC
- ◇ Cutting Over an MSC (with IP Transmission Mode Retained over the A Interface)
- ◇ Cutting Over an MSC (TDM to TDM Transmission Mode over the A Interface)
- ◇ Cutting Over an MSC (TDM to IP Transmission Mode over the A Interface)
- Modify OPC and DPC
- Modify N7 signaling link from 64k to 2M
- Add STP in A interface
- add subracks and boards
- Remove Boards and Subracks
- modify single OMU to double OMU
- expand the transmission resource in A, Gb and Abis interface.
- Reconfiguring the Transmission Mode
- ◇ Changing the Transmission Mode on the A Interface
- ◇ Reconfiguring the Transmission Mode on the Ater Interface
- ◇ Changing the Transmission Mode on the Gb Interface
- ◇ Changing the Transmission Mode on the Abis Interface
- Adjust the cell processing in DPU board(BSC6900)
- 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
- Reconfiguring resource management based on

NodeBs

- Reconfiguring resource management based on cells
- Reconfiguring resource management based on NCPs or CCPs

Training Methods

Lectures, Demonstration

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.129 OMS25 BSC6900/BSC6910 GU R16 Migration Data Configuration



Objectives

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

- Describe what is BSC migration
- Describe the procedure of the BSC migration
- Perform the BSC migration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration

- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- BSC Migration Summary
- Reparenting BSC Between MSC Servers
- Reparenting BSC Between SGSN
- 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)

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.130 OMS26 BSC6900/BSC6910 GU R16 Capacity Expanding



Objectives

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

- Describe the procedure of expanding the BSC/RNC capacity
- Perform how to add a BSC/RNC board
- Perform how to add an Subrack

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration
- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- Overview of Expanding the BSC Capacity
- Adding a BSC Board
- Adding an EPS Subrack
- 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

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.131 OMT25 MBTS GU V100R009 Dynamic Data Configuration



Objectives

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

- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Rehomings BTSs

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration

- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- Dynamic Data Adjustment Introduction
- Adjusting the Global/Device/Transmission Data
- Adjusting the Cells/TRXs/Channels Data
- Adjusting the BTS Data
- Rehomings BTSs
- Reconfiguring a BTS via LMT
- Changing the Connection Between the BSC and the MSC via LMT
- Reconfiguring a Cell via LMT
- Reconfiguring a Channel via LMT
- Changing Signaling Points
- Reconfiguring a Cell
- Modifying an SCCPCH
- Reconfiguring Neighboring Cells
- Reconfiguring the NodeB Clock Source or the Clock Working Mode

Training Methods

Lectures, Demonstration

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.132 OMT26 MBTS GU V100R009 Migration Data Configuration



Objectives

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

- Detail the scenarios of BTS/NodeB migration
- Detail the procedure of BTS/NodeB migration
- Perform the BTS/NodeB migration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900/BSC6910 GU R16 Product Description
 - BSC6900/BSC6910 GU R16 Operation and Maintenance
 - BSC6900/BSC6910 GU R16 Initial Data

Configuration

- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- BTS Reparenting Overview
- Reparenting BTSs within a BSC (TDM)
- Reparenting BTSs within a BSC (IP)
- Reparenting BTSs between BSCs (TDM/Static IP/Non-Static IP)
- NodeB Reparenting Scenarios
 - ◇ Reparenting NodeBs Under an RNC
 - ◇ Reparenting NodeBs Between RNCs of the Same Version

Training Methods

Lectures, Demonstration

Duration

1.5 working days

Class Size

Min 6, max 12

1.2.133 OMT27 MBTS GU V100R009 Capacity Expanding



Objectives

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

- Describe the procedures of expanding the BTS capacity
- Perform how to add BTS Cells
- Perform how to add BTS TRXs
- Perform how to add WBBP or UBBP Board
- Perform how to add RF Unit

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product Description

- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- Overview of Expanding the BTS Capacity
- Adding a BTS cell
- Adding a BTS TRX
- Adding a Baseband Board to a 3900 Series Base Station
- Adding an RF Unit

Training Methods

Lectures, Demonstration

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.134 OMS27 BSC6900/BSC6910 GU R16 Software Patch and Upgrading



Objectives

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

- Describe the software upgrade flow
- Outline the backup and restore operations
- Complete the software upgrade tasks
- Grasp the OMU routine maintenance commands

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product Description

- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- BSC6900/BSC6910 OMU Introduction
- BSC6900/BSC6910 Application Software Upgrade Directly
- BSC6900/BSC6910 Application Software Upgrade by U2000
- OMU Operation and Maintenance

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.135 OMT28 MBTS GU V100R009 Software Patch and Upgrading



Objectives

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

- Describe the upgrade procedure
- Describe the upgrade of MBTS
- Describe the verification operations after upgrade.
- Describe how to roll the version back to the one before upgrade

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):

- BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- MBTS GU Upgrade Overview
- MBTS GU Upgrade Guide based on LMT
- MBTS GU Upgrade Guide based on U2000

Training Methods

Lectures, Demonstration

Duration

1 working day

Class Size

Min 6, max 12

1.2.136 OMC32 GSM BSS16.0 Emergency Maintenance



Objectives

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

- Understand the Basic Symptoms About the Accident
- Know how to collect the related information
- Excute the quick emergency handling methods.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s):BSC6900 GSM V9R14 Product Description

- BSC6900 GSM V9R16 Operation and Maintenance
- BSC6900 GSM V9R16 Data Configuration
- MBTS GSM V1R9 Product Description
- MBTS GSM V1R9 Operation and Maintenance
- MBTS GSM V1R9 Data Configuration

Content

- Emergency Maintenance Overview
- Basic symptoms about the accident
- Collect related information
- Quick emergency handling methods

Training Methods

Lectures, Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.137 OMC33 GSM BSS16.0 Precautions and Emergency Maintenance for Large Traffic



Objectives

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

- Understand Precautions and Emergency Maintenance for Large Traffic
- Know how to adjust BSC parameters before large traffic
- Excute emergency maintenance for large traffic

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s):BSC6900 GSM V9R16 Product Description

- BSC6900 GSM V9R16 Operation and Maintenance
- BSC6900 GSM V9R16 Data Configuration
- MBTS GSM V1R9 Product Description
- MBTS GSM V1R9 Operation and Maintenance
- MBTS GSM V1R9 Data Configuration

Content

- Precautions and Emergency Maintenance for Large Traffic Overview
- Adjusting BSC Parameters Before Large Traffic
- Emergency Maintenance for Large Traffic

Training Methods

Lectures, Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.138 OWC72 WCDMA R16 Emergency Maintenance



Objectives

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

- Describe Brief Guide to troubleshoot emergency fault
- Collect fault information for troubleshooting
- Grasp some typical emergency faults troubleshooting

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 WCDMA V9R16 Product Description
- BSC6900 WCDMA V9R16 Operation and Maintenance
- BSC6900 WCDMA V9R16 Data Configuration
- MBTS WCDMA V1R9 Product Description
- MBTS WCDMA V1R9 Operation and

Maintenance

- MBTS WCDMA V1R9 Data Configuration

Content

- 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

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.139 OWC73 WCDMA R16 Heavy Traffic Precaution



Objectives

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

- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 WCDMA V9R16 Product Description
- BSC6900 WCDMA V9R16 Operation and Maintenance
- BSC6900 WCDMA V9R16 Data Configuration
- MBTS WCDMA V1R9 Product Description
- MBTS WCDMA V1R9 Operation and Maintenance
- MBTS WCDMA V1R9 Data Configuration

Content

- 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 lu Signaling Plane
- ◇ CN overload

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.140 OMS28 BSC6900/BSC6910 GU R15-R16 Delta for Hardware



Objectives

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

- Know the capacity specifications of the BSC6900/6910 V900R016
- Know the new hardware adopted by the BSC6900/6910 V900R016
- Know the hardware configuration and capacity of the BSC6900/6910 V900R016

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product

Description

- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- BSC6900/6910 Evolution Overview
- BSC6900/6910 Hardware Evolution
- BSC6900/6910 Typical Hardware Configuration

Training Methods

Lectures

Duration

0.25 working day

Class Size

Min 6, max 12

1.2.141 OMT29 MBTS GU V100R008-V100R009 Delta for Hardware



Objectives

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

- Know the new hardware adopted by the MBTS GU V100R009
- Know the New hardware configuration

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Operation and

Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration

Content

- SingleRAN network and product overview
- New boards in BBU
- New RF modules
- SingleRAN solution

Training Methods

Lectures

Duration

0.25 working day

Class Size

Min 6, max 12

1.2.142 OMS29 SingleRAN GU R15-R16 Delta for Operation and Maintenance



Objectives

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

- Know the principles and application scenarios of the O/M features
- Know the configuration procedures and implementation methods of the O/M features

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- GBSS O/M feature
- Quickly Collecting Fault Information
- Collecting BTS Logs
- Real-Time Monitoring of Cell Performance Monitoring
- GSM 1-Minute Performance Real-Time Monitoring
- E2E Voice Problem Location
- Single-User Tracing Optimization
- Optimization of the Function of Co-MPT Base Stations
- WRAN O&M feature
- Fault Management Assistant
- Enhancement of Batch Configuration
- Monitoring EVQI
- Real-Time Monitoring of Cell Performance Monitoring
- SingleOM

Training Methods

Lectures

Duration

0.75 working day

Class Size

Min 6, max 12

1.2.143 OMS30 SingleRAN GU R15-R16 Delta for New Feature



Objectives

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

- Know the principles and application scenarios of the new features
- Know the configuration procedures and implementation methods of the new features

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900/BSC6910 GU R16 Product Description
 - BSC6900/BSC6910 GU R16 Operation and Maintenance
 - BSC6900/BSC6910 GU R16 Initial Data Configuration
 - BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- GSM Features
 - ◇ 4-Way Receiver Diversity Supported by Multi-Carrier Modules
 - ◇ Antenna Frequency Hopping
 - ◇ Multi-Site Cell Enhancement
 - ◇ MOCN II
 - ◇ Base Station OMCH Self-recovery
- UMTS Features
 - ◇ RNC in Pool Solution
 - ◇ MOCN Cell Resource Demarcation
 - ◇ MOCN Independent Iub Transmission Resource Allocation
- SRAN Features
 - ◇ Co-MPT Reconstruction
 - ◇ Multi-BBU Interconnection
 - ◇ Base Station OMCH Self-recovery

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.144 OMS31 CME GU V200R13 - V200R14 Delta



Objectives

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

- Know the new feature of CME
- Master the new feature for GSM, UMTS and SRAN

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
 - BSC6900/BSC6910 GU R16 Product Description
 - BSC6900/BSC6910 GU R16 Operation and Maintenance
 - BSC6900/BSC6910 GU R16 Initial Data

Configuration

- BSC6900/BSC6910 GU R16 Installation and Commissioning

Content

- New NE Types
- New and Modified Features on the Platform
- New and Modified Common Features
- New and Modified Features for GSM Configuration
- New and Modified Features for UMTS Configuration
- New and Modified Features for SRAN Configuration

Training Methods

Lectures

Duration

0.25 working day

Class Size

Min 6, max 12

1.2.145 OMT30 MBTS GUL V100R009 Product Description



Objectives

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

- Outline BTS3900 product functions
- Detail the hardware structure of BTS3900
- Detail the functions of different modules
- Perform hardware configuration and cables connection

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- MBTS System Overview
- MBTS Hardware Structure
- MBTS Cable Connection
- MBTS Technical Specifications
- MBTS Typical Configuration

Training Methods

Lectures

Duration

1 working day

Class Size

Min 6, max 12

1.2.146 OMT31 MBTS GUL V100R009 Operation and Maintenance



Objectives

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

- Perform GSM BTS remote operation by U2000
- Perform GSM BTS local operation by LMT
- Perform UMTS NodeB routine operation by LMT and U2000
- Perform eNodeB routine operation by LMT and U2000

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s):
- BTS3900 GUL V100R009 Product Description

Content

- Checking hardware
- LEDs
- Cable connections
- Site local maintenance
- Replacing boards
- Routine maintenance list
- Connecting to BTS O/M System
- Alarm Management via U2000
- MBTS Device maintenance
- MBTS Transmission Layer Maintenance
- MBTS Radio Layer maintenance
- MBTS Tracing Management
- MBTS Monitoring Management
- MBTS System Management

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2.5 working days

Class Size

Min 6, max 12

1.2.147 OMT32 MBTS GUL V100R009 Initial Data Configuration



Objectives

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

- Outline the procedure of MBTS data configuration
- Complete the MBTS initial data configuration based on CME
- Describe the meaning of some important parameters

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

- Successful completion of the following course(s):
- BTS3900 GUL V100R009 Product Description

Content

- MBTS Data Configuration Introduction
- Preparing MBTS Data
- Creating MBTS Data
- Exporting MBTS Data
- Creating MBTS Data in Batches (Summary Data File)

Training Methods

Lectures, Demonstration, Hands-on exercise, eLab

Duration

2 working days

Class Size

Min 6, max 12

1.2.148 OMT33 MBTS GUL V100R009 Commissioning



Objectives

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

- Understand the MBTS installation procedure.
- Describe the steps of MBTS commissioning.
- Master the commissioning of MBTS.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following

course(s):

- BTS3900 GUL V100R009 Product Description
- BTS3900 GUL V100R009 Data Configuration

Content

- Overview of MBTS Commissioning
- Commissioning the MBTS based on U2000
- Commissioning the MBTS based on U2000 + USB

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.149 OMT34 MBTS GUL V100R009 TOP Alarm Handling



Objectives

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

- Comprehend the basic concepts of alarms
- Perform the methods of handling alarms via U2000 / LMT
- Complete TOP alarms handling

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in WCDMA wireless network operation and maintenance
- Successful completion of the following course(s):
- BSC6900/BSC6910 GU R16 Operation and

Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration

Content

- Basic Concept / Operation of Alarm
- Procedure of Alarm Handling
- GSM Top Alarm Handling
- UMTS Top Alarm Handling
- LTE Top Alarm Handling

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.150 OMC34 GSM R16 Fault Information Collecting



Objectives

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

- Describe the OMU Maintenance and Operation
- Know how to collect the fault information for CS and PS fault
- Describe where is the different file in OMU.
- Describe the functions of different files

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description

- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- MBTS GU V1R9 Product Description
- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- OMU Overview
- CS Fault information collecting
- PS Fault information collecting

Training Methods

Lectures, Hands-on exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.151 OMC35 GSM R16 CS Troubleshooting



Objectives

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

- Describe the CS Fault Troubleshooting flow
- Know how to do Single pass and no voice Troubleshooting
- Know how to do Cross pass Troubleshooting
- Know how to do Noise Troubleshooting
- Know how to do Echo Troubleshooting

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and

Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration
- MBTS GU V1R9 Product Description
- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- CS Fault Troubleshooting flow
- Single pass and no voice Troubleshooting
- Cross pass Troubleshooting
- Noise Troubleshooting
- Echo Troubleshooting

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.152 OMC36 GSM R16 PS Troubleshooting



Objectives

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

- Describe the PS Fault Troubleshooting flow
- Know how to do PS Data rate Troubleshooting
- Know how to do PS Access Troubleshooting
- Know how to Anylase PS KPI

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s):BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and

Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration
- MBTS GU V1R9 Product Description
- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- PS Fault Troubleshooting flow
- PS Data rate Troubleshooting
- PS Access Troubleshooting
- PS KPI Anylase

Training Methods

Lectures、 Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12

1.2.153 OMC37 GSM R16 IP Transmission Troubleshooting



Objectives

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

- 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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and

Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration
- MBTS GU V1R9 Product Description
- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- TCP/IP Protocol
- Physical layer Troubleshooting
- Data link layer Troubleshooting
- Network layer Troubleshooting
- LAPD/SCTP Troubleshooting
- IPPATH Troubleshooting

Training Methods

Lectures, Hands-on exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.154 OMC38 GSM R16 Clock Troubleshooting



Objectives

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

- Describe Clock Fault Troubleshooting Flow
- Know how to do Clock troubleshooting

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and

Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration
- MBTS GU V1R9 Product Description
- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- Clock Fault Troubleshooting

Training Methods

Lectures, Hands-on exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.155 OWC74 WCDMA R16 Fault Information Collecting



Objectives

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

- Describe the OMU Maintenance and Operation
- Know how to collect the fault information for different faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- MBTS GU V1R9 Product Description
- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- WRAN problems information collecting

- ◇ HSPA Rate Problems
- ◇ Voice Quality Problems
- ◇ Cell Flow Problems
 - RNC Fault information collecting
- ◇ BAM problems
- ◇ Equipment Problems
- ◇ Traffic Problems
- ◇ Loading Problems
- ◇ Inter-RAT handover failure
 - NodeB Fault information collecting
- ◇ RTWP Problems
- ◇ License Delivery failure
- ◇ Clock Problems
- ◇ Hardware and OM Problems
- ◇ NodeB Upgrade Failure
 - Transmission Information Collection
- ◇ ATM networking
- ◇ IP Networking
- ◇ OMCH channel problems

Training Methods

Lectures、 Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.156 OWC75 BSC6900/BSC6910 WCDMA R16 Troubleshooting



Objectives

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

- Know how to handle RNC equipment-related faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance

- BSC6900/BSC6910 GU R16 Initial Data Configuration

Content

- Troubleshooting Overview
- Troubleshooting typical scenarios
- OMU Service Abnormality
- Equipment Troubleshooting
- Service Setup Failure Troubleshooting
- PS Relocation and Inter-RAT Handover Failure Troubleshooting

Training Methods

Lectures, case analysis and discussion

Duration

1 working day

Class Size

Min 6, max 12

1.2.157 OWB60 NodeB WCDMA V200R016 Troubleshooting



Objectives

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

- Know how to handle NodeB-related faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration
- MBTS GU V1R9 Product Description

- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- Troubleshooting Overview
- Troubleshooting typical scenarios
 - ◇ RTWP Fault
 - ◇ CE Faults
 - ◇ Abnormal downlink power
 - ◇ License Delivery failure
 - ◇ Cell setup failure at NodeB side
 - ◇ Clock Reference Fault
 - ◇ CPRI Link Fault

Training Methods

Lectures、 Hands-on Exercise

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.158 OWC76 WCDMA R16 Transmission Troubleshooting



Objectives

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

- Know how to handle ATM Transmission Faults
- Know how to handle IP Transmission Faults

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration

Content

- Common Transmission maintenance function
- Troubleshooting ATM transmission faults
- Troubleshooting IP&IP POOL transmission faults
 - ◇ Determining IP transmission fault type
 - ◇ Bottom-layer transmission abnormalities
 - ◇ Application layer abnormalities
 - ◇ Poor IP transmission QoS
- Troubleshooting OMCH faults

Training Methods

Lectures, case analysis and discussion

Duration

0.5 working day

Class Size

Min 6, max 12

1.2.159 OWC77 BSC6900/BSC6910 WCDMA R16 PS Troubleshooting



Objectives

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

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

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900/BSC6910 GU R16 Product Description
- BSC6900/BSC6910 GU R16 Operation and Maintenance
- BSC6900/BSC6910 GU R16 Initial Data Configuration

- MBTS GU V1R9 Product Description
- MBTS GU V1R9 Operation and Maintenance
- MBTS GU V1R9 Initial Data Configuration

Content

- Troubleshooting process and methods
- Troubleshooting HSPA service setup
- Troubleshooting HSUPA data transmission faults
- Troubleshooting HSDPA service rate faults
- Troubleshooting RRC connection setup failures
- Troubleshooting RAB setup faults

Training Methods

Lectures, case analysis and discussion

Duration

1 working day

Class Size

Min 6, max 12

1.3 WBT Training Course Descriptions

1.3.1 NA BSC6900 GU V900R013 Product Description (WBT)



Objectives

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

- List the system structure of BSC6900
- Describe the functions of the components of BSC6900
- List the typical hardware configuration of BSC6900

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in

GSM/UMTS wireless network operation and maintenance

Content

- BSC6900 System Overview
- BSC6900 Hardware Structure
- BSC6900 Typical Configuration

Training Methods

WBT

Duration

1 hour

Class Size

No limit

1.3.2 NA MBTS GU V100R004 Product Description (WBT)



Objectives

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

- Know the application scenarios of Dual-Mode BTS3900
- Grasp the hardware structure of Dual-Mode BTS3900
- Grasp the functions of the modules
- Master typical configuration of Dual-Mode BTS3900
- Know the networking topology of Dual-Mode BTS3900

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in

GSM/UMTS wireless network operation and maintenance

Content

- MBTS39 Overview
- MBTS Hardware Components
- BBU
- RXU
- MBTS Typical Configuration
- MBTS Network

Training Methods

WBT

Duration

1 hour

Class Size

No limit

1.3.3 NA BSC6900 GU V900R013 Operation and Maintenance(WBT)



Objectives

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

- Detail the structure of operation and maintenance subsystem
- Perform the BSC6900 routine operation
- Perform the BSC6900 routine maintenance

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following course(s): BSC6900 GU V900R013 Product

Description

Content

- OM System Introduction
- Introduction of web LMT
- Alarm management
- Device panel management
- BSC maintenance
- Trace management
- Performance monitoring

Training Methods

WBT

Duration

1 hour

Class Size

No limit

1.3.4 NA SingleRAN MBTS GUL Product Overview (WBT)



Objectives

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

- Understand concept of the 3900 series base station.
- Grasp the hardware architecture.
- Master the typical application.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- MBTS Overview
- Hardware Architecture
- Typical Application Scenarios

Training Methods

WBT

Duration

1 hour

Class Size

No limit

1.3.5 NA SingleRAN MBSC GU Product Overview (WBT)



Objectives

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

- Know Concept of the single RAN
- Know MBSC product benefits
- Know MBSC basic architecture.

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

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

Content

- Concept of the SingleRAN
- Concept MBSC
- MBSC benefits
- MBSC base architecture

Training Methods

WBT

Duration

1 hour

Class Size

No limit

1.3.6 NA SingleRAN GUL O&M Tools Introduction(WBT)



Objectives

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

- Describe SingleRAN GUL O
- M Tools
- Know how to use Web LMT
- Know how to use M2000
- Know how to use CME

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and

maintenance

Content

- SingleRAN GUL O
- M Tools Introduction
- Web LMT Introduction
- M2000 Introduction
- CME Introduction

Training Methods

WBT

Duration

1 hour

Class Size

No limit

1.3.7 NA SingleRAN MBTS GUL Site Solution(WBT)



Objectives

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

- Describe SingleRAN MBTS GUL Site Solution
- Describe Site Solution for different application Scenarios

Target Audience

BSS Field Technicians, Operation and Maintenance Technicians and Engineers

Prerequisites

- Basic knowledge of mobile communications
- At least 1 year working experience in GSM/UMTS wireless network operation and maintenance
- Successful completion of the following

course(s): BSC6900 GU V900R013 Product Description

Content

- SingleRAN MBTS GUL Site Solution Overview
- Site Solution based on application Scenarios
- Site Solution based on BTS/DBS

Training Methods

WBT

Duration

1 hour

Class Size

No limit

