



Customer Training Catalog

Training Programs

GSM Product Technical Training



HUAWEI
HUAWEI Learning Service
2015



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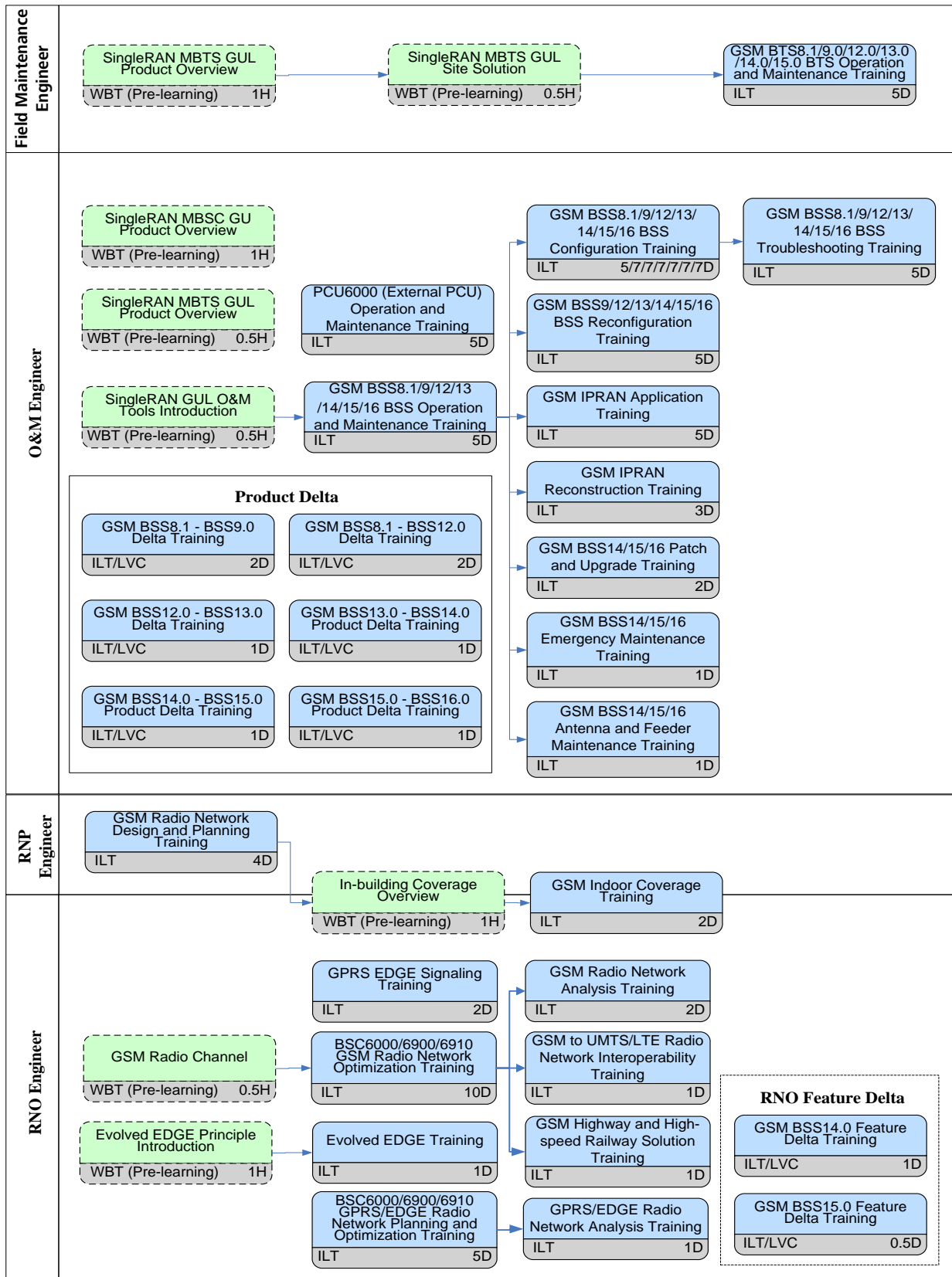


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1 Training Path



2 Training Programs

GSM RNP & RNO Technical Training Programs are designed as follows:

Training Programs	Level	Duration (working days)	Training Location	Class Size
GSM Product				
GSM BSS8.1 BTS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS8.1 BSS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS8.1 BSS Configuration Training	II	5		6 ~ 12
GSM BSS8.1 BSS Troubleshooting Training	III	5		6 ~ 12
PCU6000 (External PCU) Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS9.0 BTS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS9.0 BSS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS9.0 BSS Configuration Training	II	7		6 ~ 12
GSM BSS9.0 BSS Troubleshooting Training	III	5		6 ~ 12
GSM BSS9.0 BSS Reconfiguration Training	III	5		6 ~ 12
GSM BSS8.1 - BSS9.0 Delta Training	III	2		6 ~ 12
GSM BSS12.0 BTS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS12.0 BSS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS12.0 BSS Configuration Training	II	7		6 ~ 12
GSM BSS12.0 BSS Troubleshooting Training	III	5		6 ~ 12
GSM BSS12.0 BSS Reconfiguration Training	III	5		6 ~ 12
GSM BSS8.1 - BSS12.0 Delta Training	III	2		6 ~ 12
GSM BSS13.0 BTS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS13.0 BSS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS13.0 BSS Configuration Training	II	7		6 ~ 12
GSM BSS13.0 BSS Troubleshooting Training	III	5		6 ~ 12
GSM BSS13.0 BSS Reconfiguration Training		10		12 ~ 24

GSM BSS12.0 - BSS13.0 Delta Training	III	1		6 ~ 12
GSM BSS14.0 BTS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS14.0 BSS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS14.0 BSS Configuration Training	II	7		6 ~ 12
GSM BSS14.0 BSS Reconfiguration Training	III	5		6 ~ 12
GSM BSS14.0 BSS Troubleshooting Training	III	5		6 ~ 12
GSM BSS13.0 - BSS14.0 Product Delta Training	III	1		6 ~ 12
GSM BSS14.0 Emergency Maintenance Training	III	1		6 ~ 12
GSM BSS14.0 Upgrade Training	III	2		6 ~ 12
GSM BSS14.0 Antenna and Feeder Maintenance Training	III	1		6 ~ 12
GSM IPRAN Application Training	III	4.75		6 ~ 12
GSM IPRAN Reconstruction Training	III	3		6 ~ 12
GSM BSS15.0 BTS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS15.0 BSS Operation and Maintenance Training (BSC6900/6910)	II	5		6 ~ 12
GSM BSS15.0 BSS Configuration Training (BSC6900/6910)	II	7		6 ~ 12
GSM BSS15.0 BSS Reconfiguration Training (BSC6900/6910)	III	5		6 ~ 12
GSM BSS15.0 BSS Troubleshooting Training (BSC6900/6910)	III	5		6 ~ 12
GSM BSS14.0 - BSS15.0 Product Delta Training (BSC6900/6910)	III	1		6 ~ 12
GSM BSS15.0 Emergency Maintenance Training (BSC6900/6910)	III	1		6 ~ 12
GSM BSS15.0 Patch and Upgrade Training (BSC6900/6910)	III	2		6 ~ 12
GSM BSS15.0 Antenna and Feeder Maintenance Training (BSC6900/6910)	III	1		6 ~ 12
GSMR BTS Operation and Maintenance Training(BSC6000 V900R008C15)	II	5		6 ~ 12
GSMR BSS Operation and Maintenance Training(BSC6000 V900R008C15)	II	5		6 ~ 12
GSMR BSS Configuration Training(BSC6000V900R008C15)	II	5		6 ~ 12
GSMR BSS Troubleshooting Training(BSC6000V900R008C15)	III	3		6 ~ 12

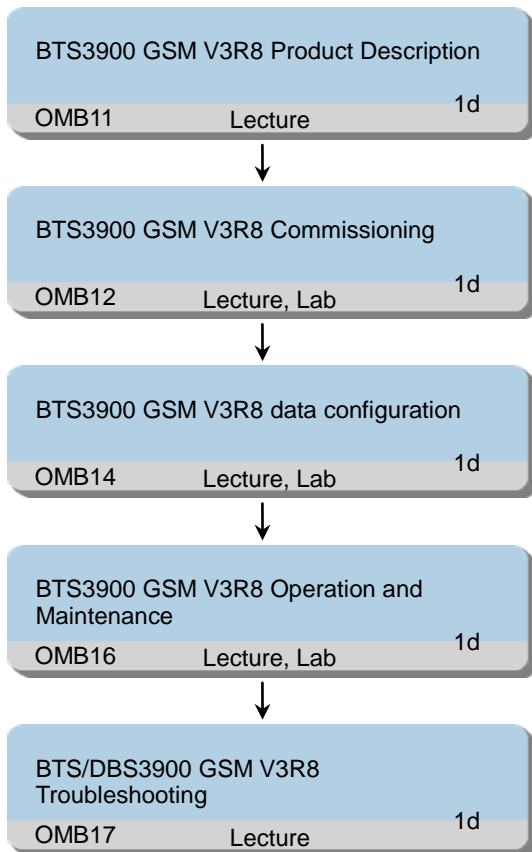
GSMR BTS Operation and Maintenance Training(BSC6000 V901R008)	II	5		6 ~ 12
GSMR BSS Operation and Maintenance Training(BSC6000 V901R008)	II	5		6 ~ 12
GSMR BSS Configuration Training(BSC6000 V901R008)	II	7		6 ~ 12
GSMR BSS Troubleshooting Training(BSC6000 V901R008)	III	3		6 ~ 12
GSM BSS16.0 BTS Operation and Maintenance Training	II	5		6 ~ 12
GSM BSS16.0 BSS Operation and Maintenance Training (BSC6900/6910)	II	5		6 ~ 12
GSM BSS16.0 BSS Configuration Training (BSC6900/6910)	II	7		6 ~ 12
GSM BSS16.0 BSS Reconfiguration Training (BSC6900/6910)	III	5		6 ~ 12
GSM BSS16.0 BSS Troubleshooting Training (BSC6900/6910)	III	5		6 ~ 12
GSM BSS15.0 - BSS16.0 Product Delta Training (BSC6900/6910)	III	1		6 ~ 12
GSM BSS16.0 Emergency Maintenance Training (BSC6900/6910)	III	1		6 ~ 12
GSM BSS16.0 Patch and Upgrade Training (BSC6900/6910)	III	2		6 ~ 12
GSM BSS16.0 Antenna and Feeder Maintenance Training (BSC6900/6910)	III	1		6 ~ 12
GSM Product WBT				
BSC6900 GSM V9R13 Product Description(WBT)	II	1 h		No limit
BSC6900 GSM Initial Data Configuration Based on CME(WBT)	II	1 h		No limit
BSC6900 GSM Troubleshooting (WBT)	II	1 h		No limit
MBTS GSM V100R004 Product Description(WBT)	II	1 h		No limit
MBTS GSM Initial Data Configuration (WBT)	II	0.5 h		No limit
MBTS GSM V100R004 Operation and Maintenance(WBT)	II	1 h		No limit
MBTS V100R004 GSM Troubleshooting (WBT)	II	0.5 h		No limit
GSM RNP&RNO				
GSM Radio Network Design and Planning Training	III	4		6 ~ 12
BSC6000 GSM Radio Network Optimization Training	III	10		6 ~ 12
BSC6000 GPRS/EDGE Radio Network Planning and Optimization Training	III	5		6 ~ 12

BSC6900/BSC6910 GSM Radio Network Optimization Training	III	10		6 ~ 12
GSM BSC6900/BSC6910 GPRS/EDGE Radio Network Planning and Optimization Training	III	5		6 ~ 12
GSM to UMTS/LTE Radio Network Interoperability Training	IV	1		6 ~ 12
GSM Indoor Coverage Training	III	2		6 ~ 12
GPRS EDGE Signaling Training	IV	2		6 ~ 12
Evolved EDGE Training	IV	1		6 ~ 12
GSM BSS14.0 Feature Delta Training	III	1		6 ~ 12
GSM BSS15.0 Feature Delta Training	III	1		6 ~ 12
GSM Highway and High-speed Railway Solution Training	IV	1		6 ~ 12
GSM Radio Network Analysis Training	IV	2		6 ~ 12
GPRS/EDGE Radio Network Analysis Training	IV	1		6 ~ 12
GSM RNP&RNO WBT				
GSM Radio Channel(WBT)	II	0.5 h		6 ~ 12
BSC6900 GSM GPRS EDGE PM System and Counters Overview(WBT)	II	1.2 h		6 ~ 12
GSM System Technology(WBT)	II	0.2 h		6 ~ 12
In-building Coverage Overview(WBT)	II	1h		6 ~ 12
BSC6900 Singnaling Trace Introduction(WBT)	II	0.5h		6 ~ 12

2.1 GSM Product Training Programs

2.1.1 GSM BSS8.1 BTS Operation and Maintenance Training

Training Path



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

Objectives

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

- Describe the features of Huawei BTS3900 products.
- Describe the hardware structure of BTS3900.

- Describe the function of boards of BTS3900.
- Explain the BTS signal flow.
- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe site maintenance objects.
- Describe the concepts of BTS3900 management status.
- Describe the concepts of BTS3900 operation status.
- Describe BTS3900 routine operation and maintenance procedure.
- Explain how to use BTS3900 remote maintenance console.
- Describe the steps to configure BTS3900 online.
- Describe the structure of BTS3900 data configuration.
- Explain how to add and delete site/cell/board.
- Explain how to define the ARFCN of carriers.
- Explain how to modify the relevant parameters.
- Describe the procedure of checking the BTS transmission.
- Implement the connection of Transmission Devices.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.
- Understand BTS safety precautions of maintenance.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for common BTS faults.
- Locate the troubleshooting cases for common BTS faults.
- Analyze the troubleshooting cases for common BTS faults.

Duration

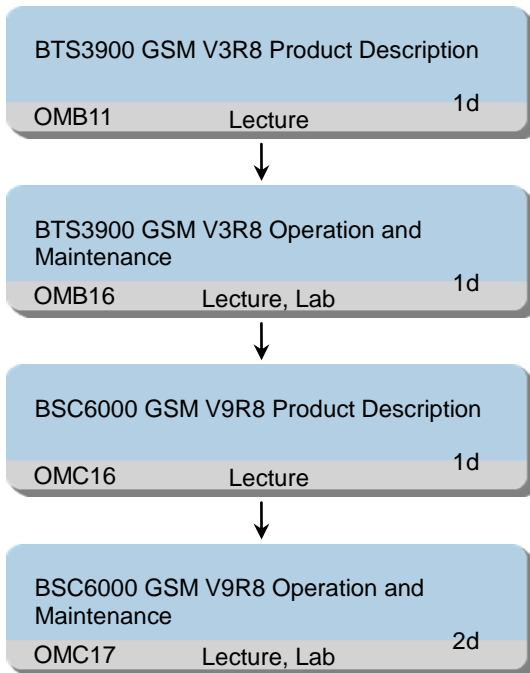
5 working days

Class Size

Min 6, Max 12

2.1.2 GSM BSS8.1 BSS Operation and Maintenance Training

Training Path



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

Objectives

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

- State the structure and functions of important boards of BSC6000.

- State the system structure and functions of modules of BSC6000.
- Describe the features of Huawei BTS3900 products.
- Describe the hardware structure of BTS3900.
- Describe the function of boards of BTS3900.
- Explain the BTS signal flow.
- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe the work flow of BSC6000 maintenance.
- Describe important parameters in BSC6000 maintenance.
- Operate on the BSC6000 maintenance console.
- Perform the routine maintenance for BSC6000.
- Describe site maintenance objects.
- Describe the concepts of BTS3900 management status.
- Describe the concepts of BTS3900 operation status.
- Describe BTS3900 routine operation and maintenance procedure.
- Explain how to use BTS3900 remote maintenance console.

Duration

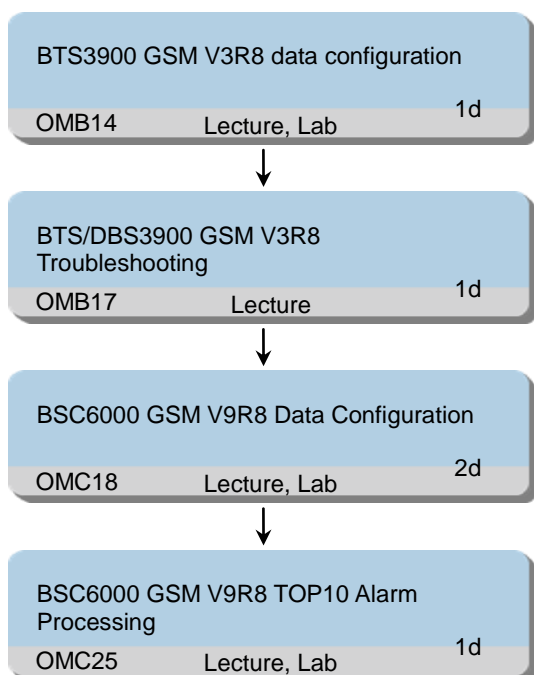
5 working days

Class Size

Min 6, Max 12

2.1.3 GSM BSS8.1 BSS Configuration Training

Training Path



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 program(s):
 BSC6000 GSM BSS Field Operation and Maintenance Training

Objectives

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

- Describe the function of BSC6000 data

configuration system function.

- Configure BSC6000 by data configuration console independently.
- Describe the configuration of important parameters of BSS system.
- Check the data configuration correctness and validity.
- Describe the steps to configure BTS3900 online.
- Describe the structure of BTS3900 data configuration.
- Explain how to add and delete site/cell/board.
- Explain how to define the ARFCN of carriers.
- Explain how to modify the relevant parameters.
- Understand BTS safety precautions of maintenance.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for common BTS faults.
- Locate the troubleshooting cases for common BTS faults.
- Analyze the troubleshooting cases for common BTS faults.
- Describe the BSC6000 TOP10 alarm troubleshooting procedure.
- Describe the troubleshooting phenomenon for common BSC6000 faults.

Duration

5 working days

Class Size

Min 6, Max 12

2.1.4 GSM BSS8.1 BSS Troubleshooting Training

Training Path

BSC6000 GSM V9R8 Advanced troubleshooting Training		
OMC24	Lecture, Lab	5d

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 program(s):
BSC6000 GSM BSS Field Operation and Maintenance Training
BSC6000 GSM BSS Operation and Maintenance Training

Objectives

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

- Describe the BSC6000 and BTS troubleshooting procedure.
- Describe the troubleshooting phenomenon for common BSC6000 and BTS faults.
- Locate, analyze and eliminate the troubleshooting cases for common BSC6000 and MBTS faults.
- Analyze the signaling message for troubleshooting.

Duration

5 working days

Class Size

Min 6, Max 12

2.1.5 PCU6000 (External PCU) Operation and Maintenance Training

Training Path

PCU6000 (External PCU) Operation and Maintenance		
OMC22	Lecture	5d

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

Objectives

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

- Outline the GPRS principle.
- Outline the function, architecture and structure of PCU6000.

- Outline the PCU6000 board features.
- Implement PCU6000 data configuration, parameters setting, data modification, restoration and back-up.
- Perform the PCU6000 routine operation and maintenance via MML and GUI console.
- Operate and maintain the alarms management via MML and GUI console.
- Operate and maintain the performance management via MML and GUI console.
- Locate, analyze and eliminate the common faults of PCU6000.

Duration

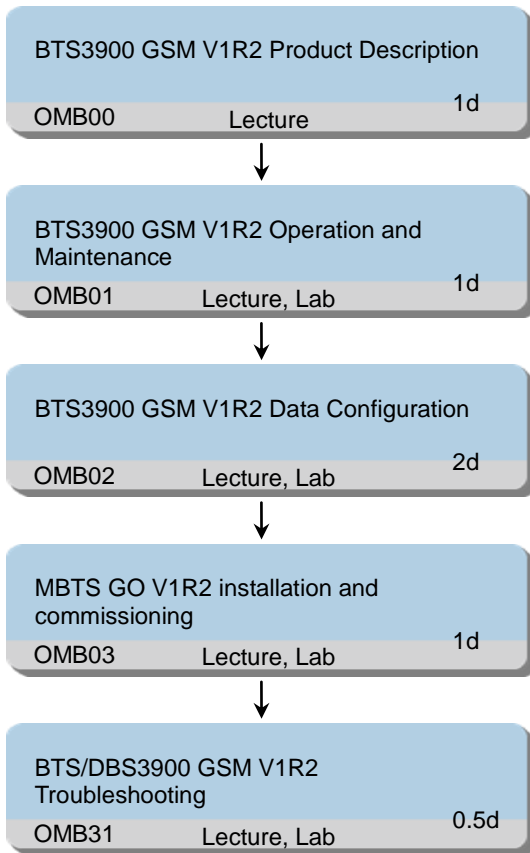
5 working days

Class Size

Min 6, Max 12

2.1.6 GSM BSS9.0 BTS Operation and Maintenance Training

Training Path



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

Objectives

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

- Describe the features of BTS3900(GSM Only) products.
- Describe the hardware structure of BTS3900(GSM Only) .
- Describe the function of boards of BTS3900(GSM Only) .
- Explain the BTS signal flow.

- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects(Web LMT and MML).
- Describe the concepts of BTS3900(GSM Only) management status.
- Describe the concepts of BTS3900(GSM Only) operation status.
- Describe BTS3900(GSM Only) routine operation and maintenance procedure.
- Explain how to use BTS3900(GSM Only) remote maintenance console.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.
- Understand BTS safety precautions of maintenance.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for common BTS faults.
- Locate the troubleshooting cases for common BTS faults.
- Analyze the troubleshooting cases for common BTS faults.

Duration

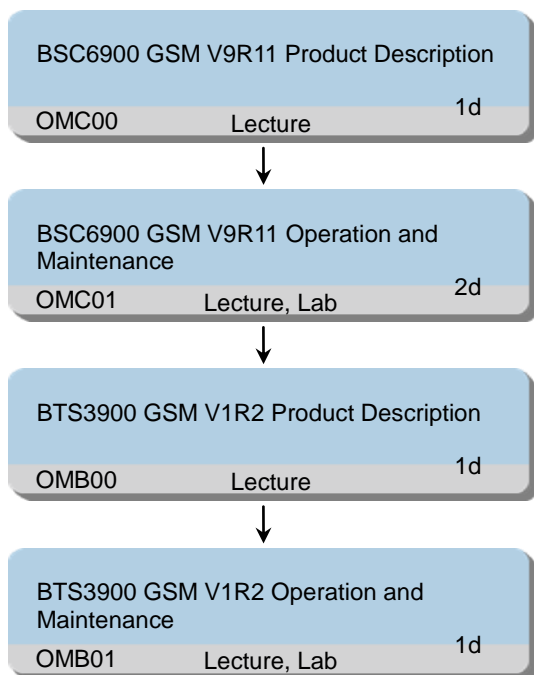
5 working days

Class Size

Min 6, Max 12

2.1.7 GSM BSS9.0 BSS Operation and Maintenance Training

Training Path



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

Objectives

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

- State the structure and functions of important boards of BSC6900 (GSM Only).
- State the system structure and functions of modules of BSC6900 (GSM Only).
- State the system structure and functions of subrack of BSC6900 (GSM Only).

- State the performance features of BSC6900 (GSM Only).
- Describe the features of BTS3900 (GSM Only) products.
- Describe the hardware structure of BTS3900 (GSM Only) .
- Describe the function of boards of BTS3900 (GSM Only) .
- Explain the BTS signal flow.
- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe the work flow of BSC6900 maintenance.
- Describe important parameters in BSC6900 maintenance (Web LMT and MML) .
- Operate on the BSC6900 maintenance console.
- Perform the routine maintenance for BSC6900.
- Describe GSM site maintenance objects (Web LMT and MML).
- Describe the concepts of BTS3900 (GSM Only) management status.
- Describe the concepts of BTS3900 (GSM Only) operation status.
- Describe BTS3900 (GSM Only) routine operation and maintenance procedure.
- Explain how to use BTS3900 (GSM Only) remote maintenance console.

Duration

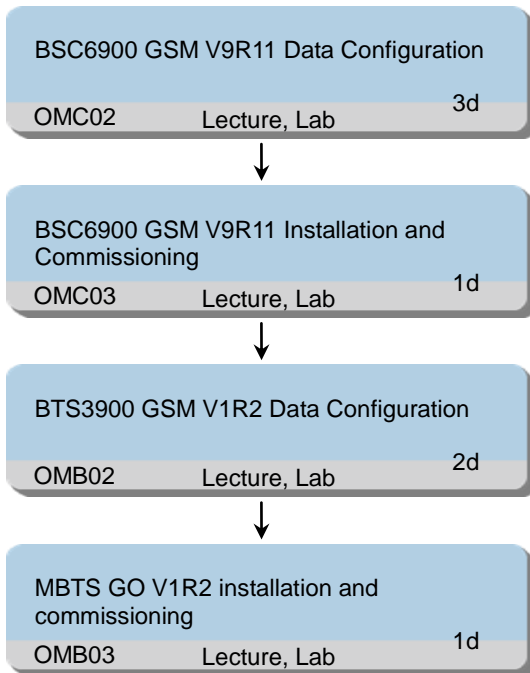
5 working days

Class Size

Min 6, Max 12

2.1.8 GSM BSS9.0 BSS Configuration Training

Training Path



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 program(s):
 BSC6900 GSM V900R011 BSS Operation and Maintenance Training

Objectives

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

- Configure BSC6900 by Web LMT independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data

configuration.

- Configure BSC6900 by CME independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.
- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Describe the alarm and server verification after commissioning
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.

Duration

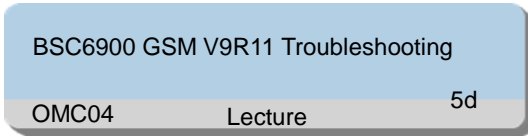
7 working days

Class Size

Min 6, Max 12

2.1.9 GSM BSS9.0 BSS Troubleshooting Training

Training Path



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 program(s):

BSC6900 GSM V900R011 BSS Operation and Maintenance Training

BSC6900 GSM V900R011 BSS Configuration Training

Objectives

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

- Understand BSC6900 (GSM Only) safety precautions of maintenance.
- Describe the BSC6900 (GSM Only) troubleshooting flow.
- Describe the troubleshooting phenomenon for common BSC6900 (GSM Only) faults.
- Locate the troubleshooting cases for common BSC6900 (GSM Only) faults.
- Analyze the troubleshooting cases for common BSC6900 (GSM Only) faults.
- Perform the troubleshooting for common BSC6900 (GSM Only) faults.

Duration

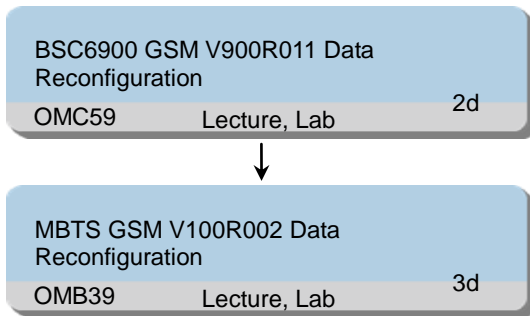
5 working days

Class Size

Min 6, Max 12

2.1.10 GSM BSS9.0 BSS Reconfiguration Training

Training Path



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 program(s):

BSC6900 GSM V900R012 BSS Operation and Maintenance Training

Objectives

On completion of this program, 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
- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Repairment BTSs

Duration

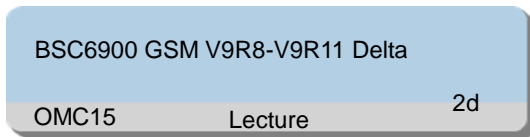
5 working days

Class Size

Min 6, Max 12

2.1.11 GSM BSS8.1 - BSS9.0 Delta Training

Training Path



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 program(s):

BSC6000 GSM BSS Field Operation and Maintenance Training

BSC6000 GSM BSS Operation and Maintenance Training

BSC6000 GSM BSS Advanced Operation and

Maintenance Training

Objectives

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

- Describe BSC6900 evolution overview
- Describe the hardware changing in BSC6900, including cabinet, subrack and boards.
- Describe the software changing in BSC6900, including OMU board software and OM software
- Describe the typical configuration

Duration

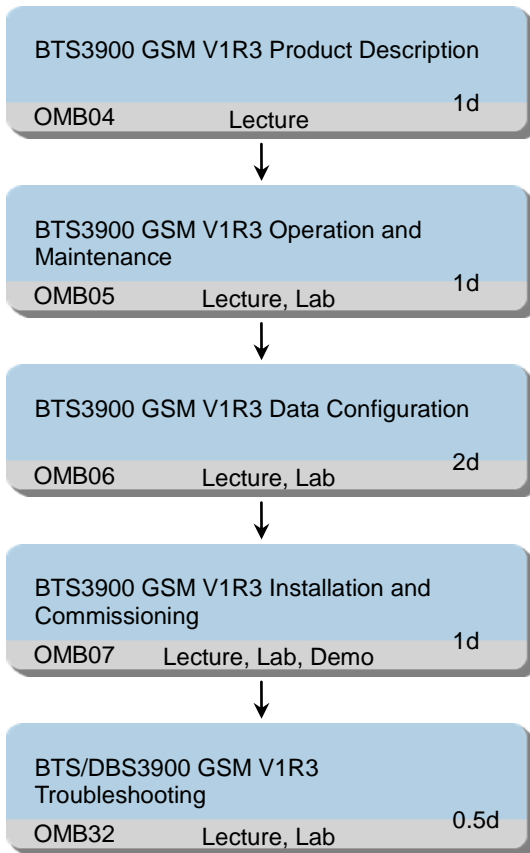
2 working days

Class Size

Min 6, Max 12

2.1.12 GSM BSS12.0 BTS Operation and Maintenance Training

Training Path



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

Objectives

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

- Describe the features of BTS3900 (GSM Only) products.
- Describe the hardware structure of BTS3900 (GSM Only) .
- Describe the function of boards of BTS3900 (GSM Only) .
- Explain the BTS signal flow.

- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects(Web LMT and MML).
- Describe the concepts of BTS3900 (GSM Only) management status.
- Describe the concepts of BTS3900 (GSM Only) operation status.
- Describe BTS3900 (GSM Only) routine operation and maintenance procedure.
- Explain how to use BTS3900 (GSM Only) remote maintenance console.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.
- Understand BTS safety precautions of maintenance.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for common BTS faults.
- Locate the troubleshooting cases for common BTS faults.
- Analyze the troubleshooting cases for common BTS faults.

Duration

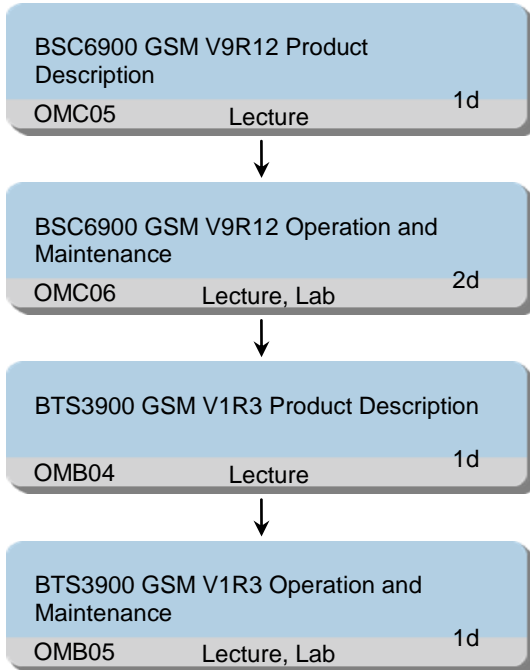
5 working days

Class Size

Min 6, Max 12

2.1.13 GSM BSS12.0 BSS Operation and Maintenance Training

Training Path



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

Objectives

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

- State the structure and functions of important boards of BSC6900 (GSM Only).
- State the system structure and functions of modules of BSC6900 (GSM Only).
- State the system structure and functions of subrack of BSC6900(GSM Only).

- State the performance features of BSC6900 (GSM Only).
- Describe the work flow of BSC6900 maintenance.
- Describe important parameters in BSC6900 maintenance (Web LMT and MML) .
- Operate on the BSC6900 maintenance console.
- Perform the routine maintenance for BSC6900.
- Describe the features of BTS3900 (GSM Only) products.
- Describe the hardware structure of BTS3900 (GSM Only) .
- Describe the function of boards of BTS3900 (GSM Only) .
- Explain the BTS signal flow.
- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects(Web LMT and MML).
- Describe the concepts of BTS3900 (GSM Only) management status.
- Describe the concepts of BTS3900 (GSM Only) operation status.
- Describe BTS3900 (GSM Only) routine operation and maintenance procedure.
- Explain how to use BTS3900 (GSM Only) remote maintenance console.

Duration

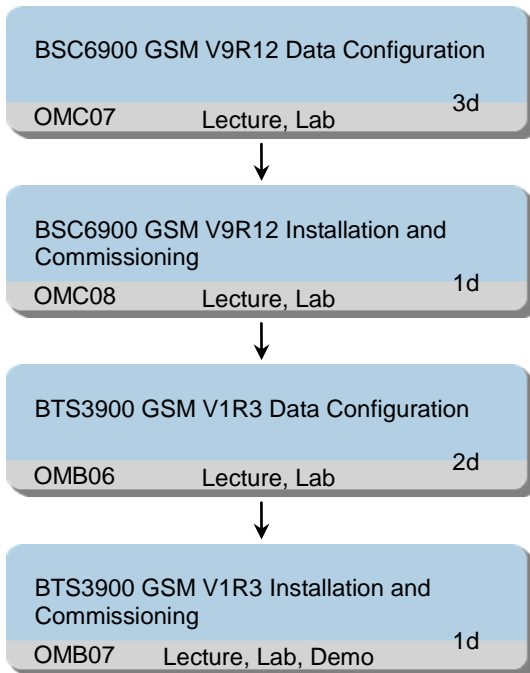
5 working days

Class Size

Min 6, Max 12

2.1.14 GSM BSS12.0 BSS Configuration Training

Training Path



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 program(s):
 BSC6900 GSM V900R012 BSS Operation and Maintenance Training

Objectives

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

- Configure BSC6900 by Web LMT independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data

configuration.

- Configure BSC6900 by CME independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.
- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation

Duration

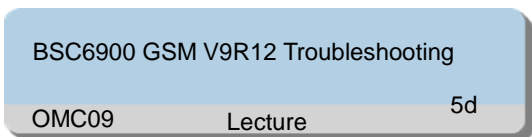
7 working days

Class Size

Min 6, Max 12

2.1.15 GSM BSS12.0 BSS Troubleshooting Training

Training Path



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 program(s):
BSC6900 GSM V900R012 BSS Operation and Maintenance Training
BSC6900 GSM V900R012 BSS Configuration Training

Objectives

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

- Understand BSC6900 (GSM Only) safety precautions of maintenance.
- Describe the BSC6900 (GSM Only) troubleshooting flow.
- Describe the troubleshooting phenomenon for common BSC6900 (GSM Only) faults.
- Locate the troubleshooting cases for common BSC6900 (GSM Only) faults.
- Analyze the troubleshooting cases for common BSC6900 (GSM Only) faults.
- Perform the troubleshooting for common BSC6900 (GSM Only) faults.

Duration

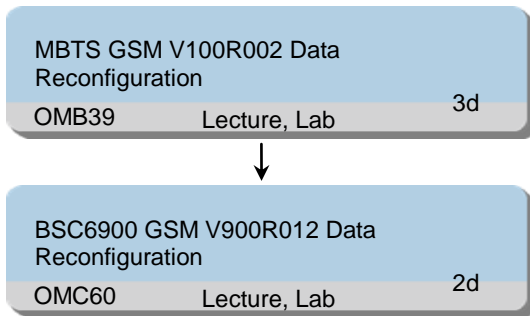
5 working days

Class Size

Min 6, Max 12

2.1.16 GSM BSS12.0 BSS Reconfiguration Training

Training Path



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 program(s):
BSC6900 GSM V900R012 BSS Operation and Maintenance Training
BSC6900 GSM V900R012 BSS Configuration Training

Objectives

On completion of this program, 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
- 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

Duration

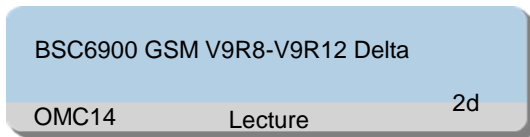
5 working days

Class Size

Min 6, Max 12

2.1.17 GSM BSS8.1 - BSS12.0 Delta Training

Training Path



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 program(s):

BSC6000 GSM BSS Field Operation and Maintenance Training

BSC6000 GSM BSS Operation and Maintenance Training

BSC6000 GSM BSS Advanced Operation and

Maintenance Training

Objectives

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

- Describe BSC6900 evolution overview
- Describe the hardware changing in BSC6900, including cabinet, subrack and boards.
- Describe the software changing in BSC6900, including OMU board software and OM software
- Describe the typical configuration

Duration

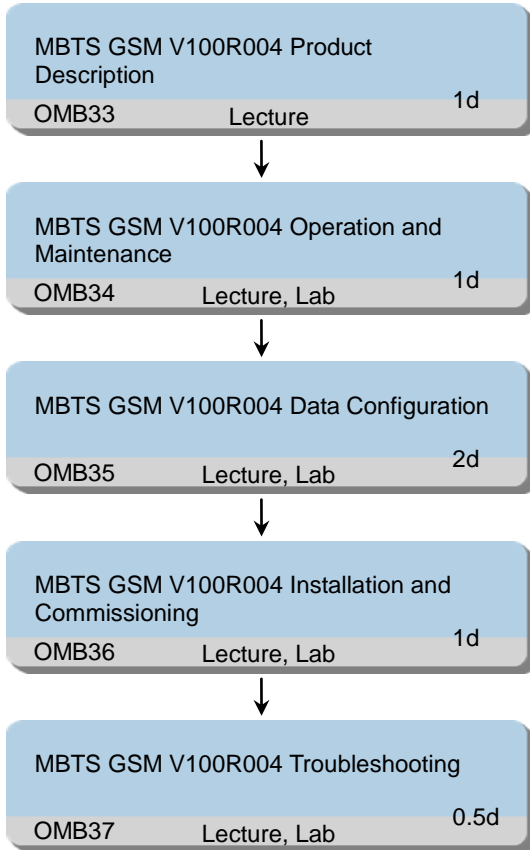
2 working days

Class Size

Min 6, Max 12

2.1.18 GSM BSS13.0 BTS Operation and Maintenance Training

Training Path



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

Objectives

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

- Describe the features of MBTS (GSM Only) products.
- Describe the hardware structure of MBTS (GSM Only) .
- Describe the function of boards of MBTS (GSM Only) .
- Explain the MBTS signal flow.

- Check the hardware structure of the MBTS, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects (Web LMT and MML).
- Describe the concepts of MBTS (GSM Only) management status.
- Describe the concepts of MBTS (GSM Only) operation status.
- Describe MBTS (GSM Only) routine operation and maintenance procedure.
- Explain how to use MBTS (GSM Only) remote maintenance console.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration via CME and LMT.
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform local commissioning via SMT and USB.
- Perform remote commissioning via M2000 and Web LMT.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.
- Understand BTS safety precautions of maintenance.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for common BTS faults.
- Locate the troubleshooting cases for common

- BTS faults.
- Analyze the troubleshooting cases for common BTS faults.

Duration

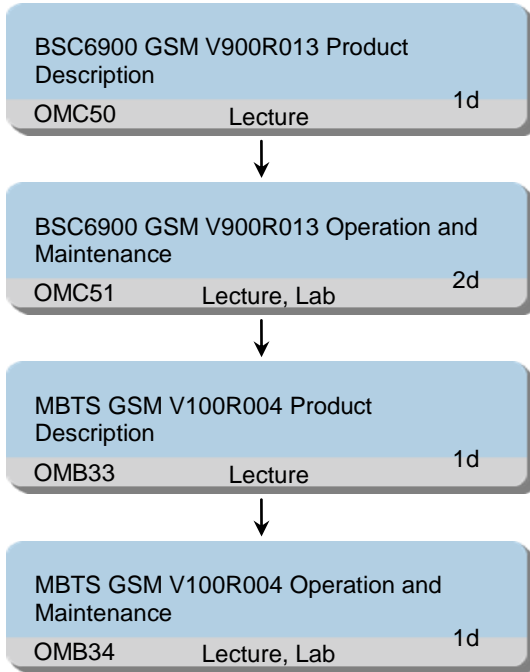
5 working days

Class Size

Min 6, Max 12

2.1.19 GSM BSS13.0 BSS Operation and Maintenance Training

Training Path



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

Objectives

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

- State the structure and functions of important boards of BSC6900 (GSM Only).
- State the system structure and functions of modules of BSC6900 (GSM Only).
- State the system structure and functions of subrack of BSC6900 (GSM Only).

- State the performance features of BSC6900 (GSM Only).
- Describe the features of MBTS (GSM Only) products.
- Describe the hardware structure of MBTS (GSM Only) .
- Describe the function of boards of MBTS (GSM Only) .
- Explain the MBTS signal flow.
- Check the hardware structure of the MBTS, such as the cabinet, subrack, board, and cable.
- Describe the work flow of BSC6900 maintenance.
- Describe important parameters in BSC6900 maintenance (Web LMT and MML) .
- Operate on the BSC6900 maintenance console.
- Perform the routine maintenance for BSC6900.
- Describe GSM site maintenance objects(Web LMT and MML).
- Describe the concepts of MBTS (GSM Only) management status.
- Describe the concepts of MBTS (GSM Only) operation status.
- Describe MBTS (GSM Only) routine operation and maintenance procedure.
- Explain how to use MBTS (GSM Only) remote maintenance console.

Duration

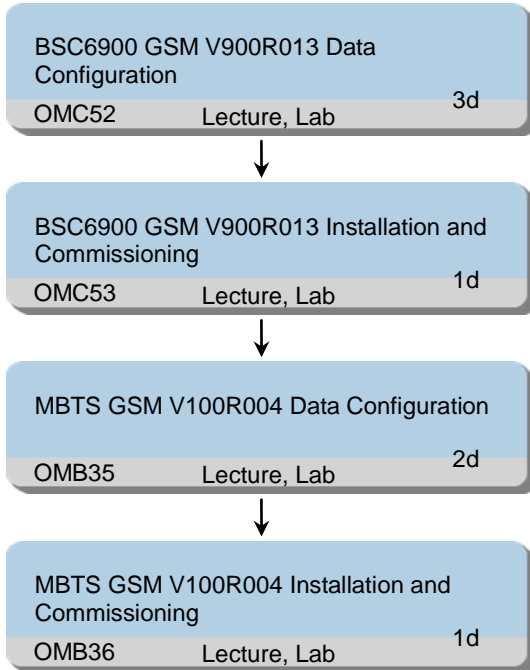
5 working days

Class Size

Min 6, Max 12

2.1.20 GSM BSS13.0 BSS Configuration Training

Training Path



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 program(s):
 BSC6900 GSM V900R013 BSS Operation and Maintenance Training

Objectives

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

- Configure BSC6900 by Web LMT independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration.

- Configure BSC6900 by CME independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration via CME.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration via CME and LMT.
- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform local commissioning via SMT and USB.
- Perform remote commissioning via M2000 and Web LMT.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.

Duration

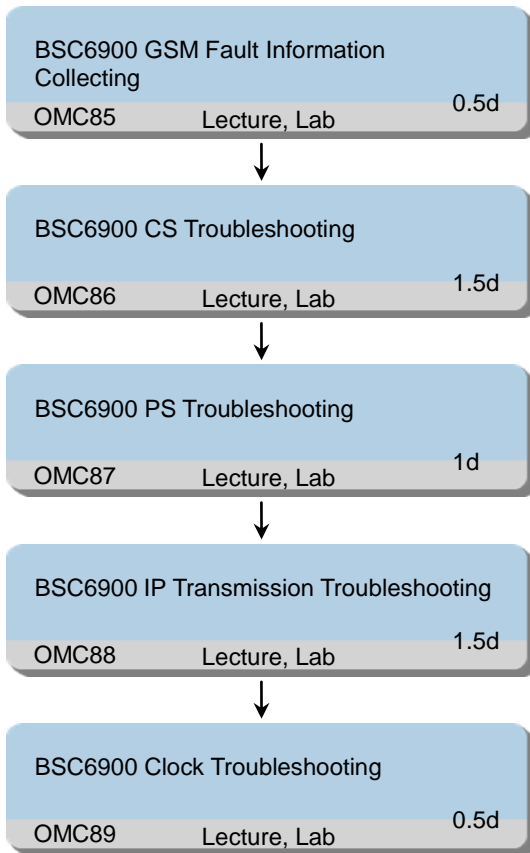
7 working days

Class Size

Min 6, Max 12

2.1.21 GSM BSS13.0 BSS Troubleshooting Training

Training Path



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 program(s):
 BSC6900 GSM V900R013 BSS Operation and Maintenance Training
 BSC6900 GSM V900R013 BSS Configuration

Training

Objectives

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

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

Duration

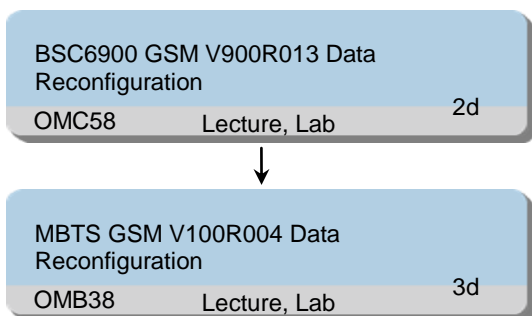
5 working days

Class Size

Min 6, Max 12

2.1.22 GSM BSS13.0 BSS Reconfiguration Training

Training Path



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 program(s):
BSC6900 GSM V900R013 BSS Operation and Maintenance Training
BSC6900 GSM V900R013 BSS Configuration Training

Objectives

On completion of this program, 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
- 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

Duration

10 working days

Class Size

Min 12, Max 24

2.1.23 GSM BSS12.0 - BSS13.0 Delta Training

Training Path

BSC6900 GSM V900R012 - V900R013 Delta		
OMC56	Lecture	1d

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 program(s):
BSC6000 GSM BSS Field Operation and
Maintenance Training
BSC6000 GSM BSS Operation and Maintenance
Training
BSC6000 GSM BSS Advanced Operation and
Maintenance Training

Objectives

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

- Describe BSC6900 GSM evolution overview
- Describe the hardware changing in BSC6900
GSM and MBTS GSM, including cabinet,
subrack and boards.
- Describe the software changing in
BSC6900GSM, including OMU board software
and OM software
- Describe the new features of BSC6900GSM
and MBTS GSM.

Duration

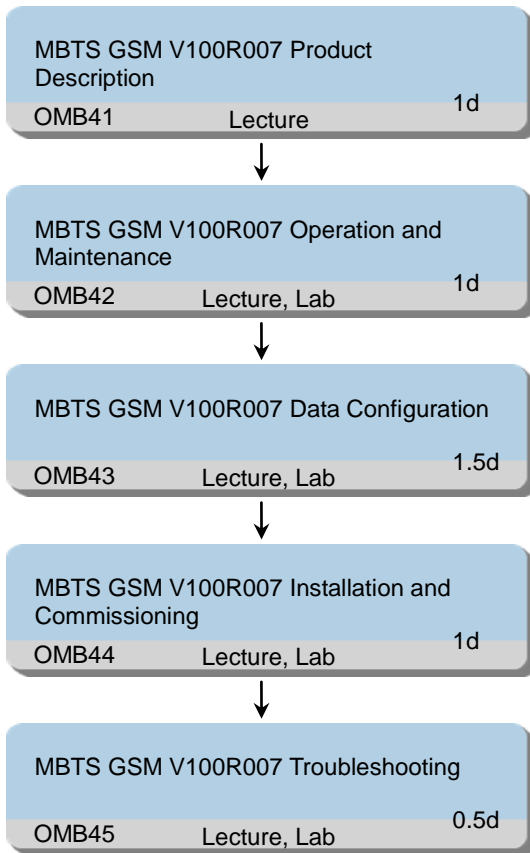
1 working day

Class Size

Min 6, Max 12

2.1.24 GSM BSS14.0 BTS Operation and Maintenance Training

Training Path



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

Objectives

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

- Describe the features of MBTS (GSM Only) products.
- Describe the hardware structure of MBTS (GSM Only) .
- Describe the function of boards of MBTS (GSM Only) .
- Explain the MBTS signal flow.

- Check the hardware structure of the MBTS, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects (Web LMT and MML).
- Describe the concepts of MBTS (GSM Only) management status.
- Describe the concepts of MBTS (GSM Only) operation status.
- Describe MBTS (GSM Only) routine operation and maintenance procedure.
- Explain how to use MBTS (GSM Only) remote maintenance console.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration via CME and LMT.
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform local commissioning via SMT and USB.
- Perform remote commissioning via M2000 and Web LMT.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for TOP BTS faults.
- Locate the troubleshooting cases for TOP BTS faults.
- Analyze the troubleshooting cases for TOP

BTS faults.

Class Size

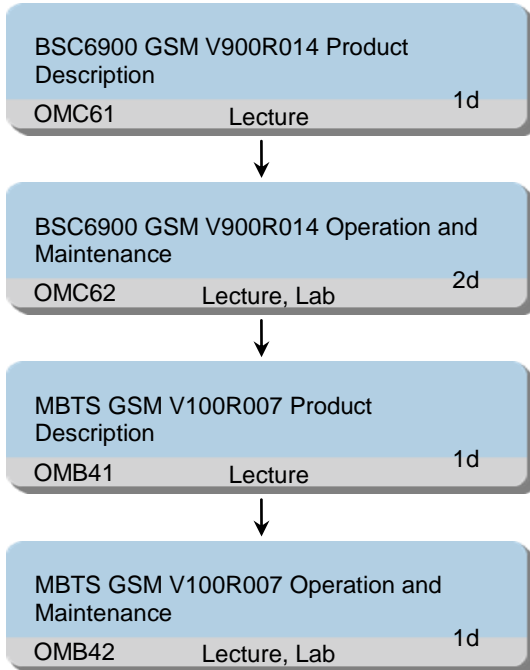
Duration

Min 6, Max 12

5 working days

2.1.25 GSM BSS14.0 BSS Operation and Maintenance Training

Training Path



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

Objectives

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

- State the structure and functions of important boards of BSC6900 (GSM Only).
- State the system structure and functions of modules of BSC6900 (GSM Only).
- State the system structure and functions of subrack of BSC6900 (GSM Only).

- State the performance features of BSC6900 (GSM Only).
- Describe the features of MBTS (GSM Only) products.
- Describe the hardware structure of MBTS (GSM Only) .
- Describe the function of boards of MBTS (GSM Only) .
- Explain the MBTS signal flow.
- Check the hardware structure of the MBTS, such as the cabinet, subrack, board, and cable.
- Describe the work flow of BSC6900 maintenance.
- Describe important parameters in BSC6900 maintenance (Web LMT and MML) .
- Operate on the BSC6900 maintenance console.
- Perform the routine maintenance for BSC6900.
- Describe GSM site maintenance objects (Web LMT and MML).
- Describe the concepts of MBTS (GSM Only) management status.
- Describe the concepts of MBTS (GSM Only) operation status.
- Describe MBTS (GSM Only) routine operation and maintenance procedure.
- Explain how to use MBTS (GSM Only) remote maintenance console.

Duration

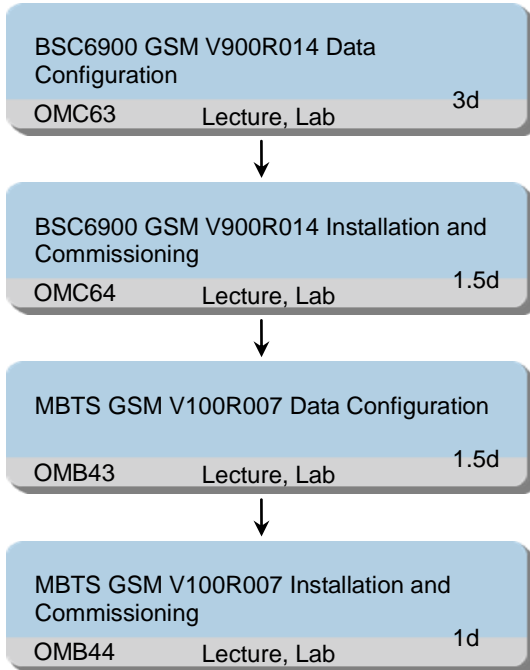
5 working days

Class Size

Min 6, Max 12

2.1.26 GSM BSS14.0 BSS Configuration Training

Training Path



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 program(s):
 BSC6900 GSM V900R014 BSS Operation and Maintenance Training

Objectives

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

- Configure BSC6900 by Web LMT independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration.

- Configure BSC6900 by CME independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration via CME.
- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration via CME and LMT.
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform local commissioning via SMT and USB.
- Perform remote commissioning via M2000 and Web LMT.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.

Duration

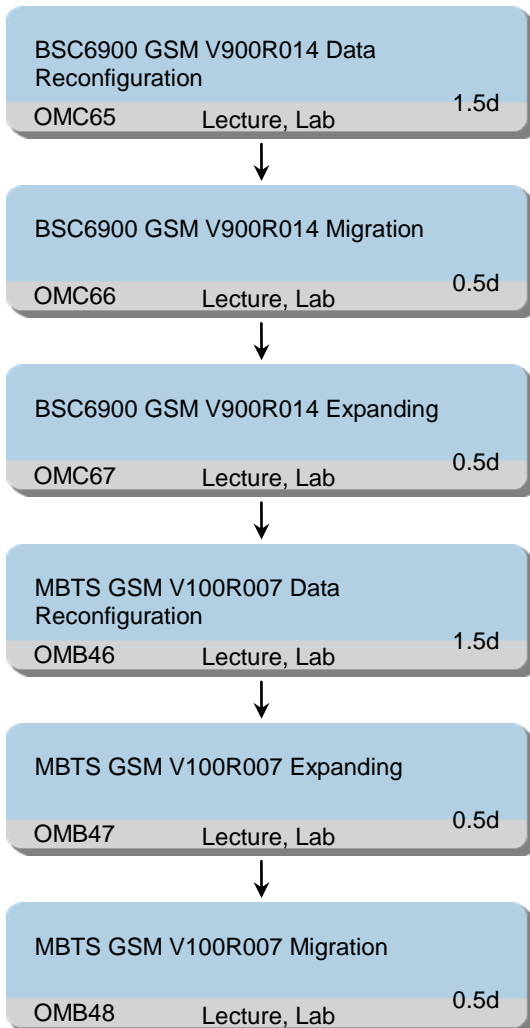
7 working days

Class Size

Min 6, Max 12

2.1.27 GSM BSS14.0 BSS Reconfiguration Training

Training Path



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 program(s):
 BSC6900 GSM V900R014 BSS Operation and Maintenance Training
 BSC6900 GSM V900R014 BSS Configuration Training

Objectives

On completion of this program, 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
- Describe the procedures of expanding the BTS capacity
- Perform how to add BSC board
- Perform how to add BSC Subrack
- Detail the scenarios of BSC migration
- Detail the procedure of BSC migration
- Perform the BSC migration
- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Repairment BTSs
- Describe the procedures of expanding the BTS capacity
- Perform how to add BTS Cells
- Perform how to add BTS TRXs
- Detail the scenarios of BTS migration
- Detail the procedure of BTS migration
- Perform the BTS migration

Duration

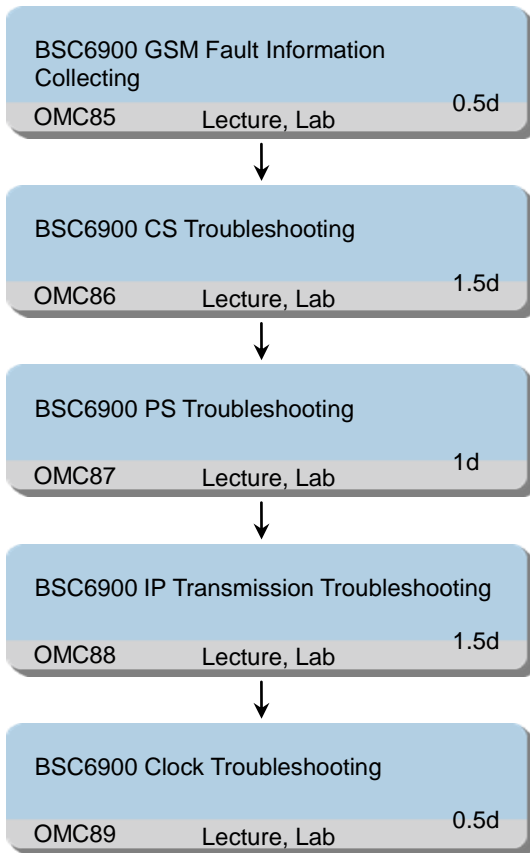
5 working days

Class Size

Min 6, Max 12

2.1.28 GSM BSS14.0 BSS Troubleshooting Training

Training Path



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 program(s):
 BSC6900 GSM V900R014 BSS Operation and Maintenance Training
 BSC6900 GSM V900R014 BSS Configuration

Training

Objectives

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

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

Duration

5 working days

Class Size

Min 6, Max 12

2.1.29 GSM BSS13.0 - BSS14.0 Product Delta Training

Training Path

BSC6900 GSM V900R013 - V900R014 Delta		
OMC69	Lecture	1d

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 program(s):
BSC6900 GSM V900R013 BSS Operation and
Maintenance Training
BSC6900 GSM V900R013 BSS Configuration
Training

Objectives

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

- Describe BSC6900 GSM evolution overview
- Describe the hardware changing in BSC6900
GSM and MBTS GSM, including cabinet,
subrack and boards.
- Describe the software changing in
BSC6900GSM, including OMU board software
and OM software
- Describe the new features of BSC6900GSM
and MBTS GSM.

Duration

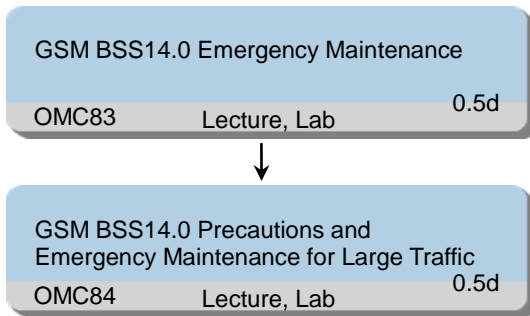
1 working day

Class Size

Min 6, Max 12

2.1.30 GSM BSS14.0 Emergency Maintenance Training

Training Path



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 program(s):
 BSC6900 GSM V900R014 BSS Operation and Maintenance Training
 BSC6900 GSM V900R014 BSS Configuration Training

Objectives

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

- Understand the Basic Symptoms About the Accident
- Know how to collect the related information
- Execute the quick emergency handling methods.
- Understand Precautions and Emergency Maintenance for Large Traffic
- Know how to adjust BSC parameters before large traffic
- Execute emergency maintenance for large traffic

Duration

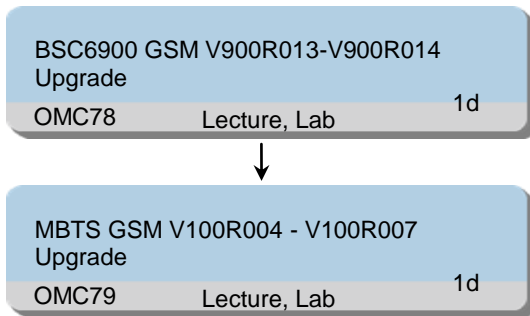
1 working day

Class Size

Min 6, Max 12

2.1.31 GSM BSS14.0 Upgrade Training

Training Path



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 program(s):
BSC6900 GSM V900R014 BSS Operation and Maintenance Training
BSC6900 GSM V900R014 BSS Configuration Training

Objectives

On completion of this program, 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
- Understand the modification of upgrade from R1 to R7 comparing to earlier upgrades, learn about the upgrade procedure, and complete an upgrade by referring to the Upgrade Guide.
- Understand the modification of upgrade from R2 to R7 comparing to earlier upgrades, learn about the upgrade procedure, and complete an upgrade by referring to the Upgrade Guide.

Duration

2 working days

Class Size

Min 6, Max 12

2.1.32 GSM BSS14.0 Antenna and Feeder Maintenance Training

Training Path

GSM BSS14.0 Antenna and Feeder Maintenance		
OMB49	Lecture	1d

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

Objectives

On completion of this program, the participants will

be able to:

- Describe Antenna and Feeder hardware structure.
- Describe Antenna and Feeder maintenance
- Describe the Antenna and Feeder troubleshooting flow.
- Analyze the Antenna and Feeder fault reasons.
- Master the Antenna and Feeder troubleshooting.

Duration

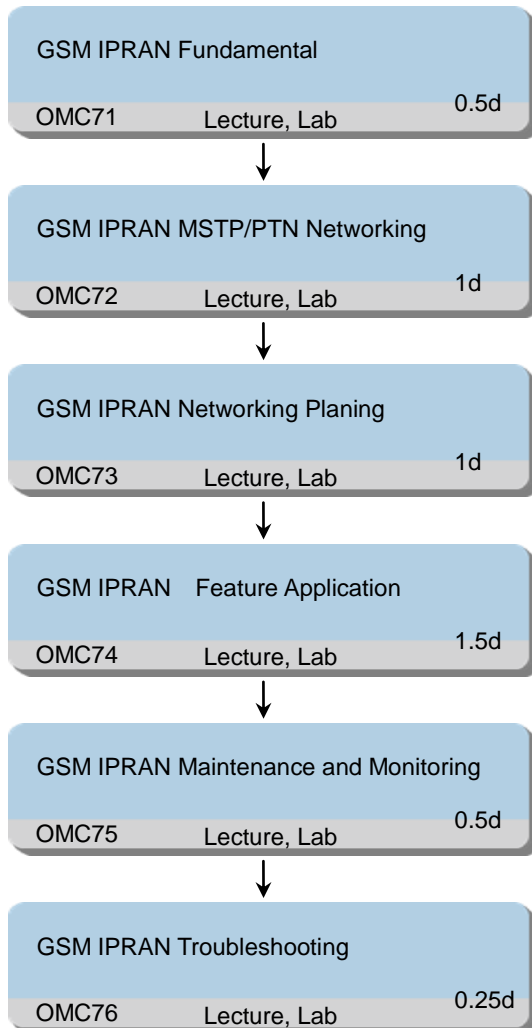
1 working day

Class Size

Min 6, Max 12

2.1.33 GSM IPRAN Application Training

Training Path



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 program(s):

BSC6900 GSM V900R011/12/13/14 BSS

Operation and Maintenance Training

BSC6900 GSM V900R011/12/13/14 BSS

Configuration Training

Objectives

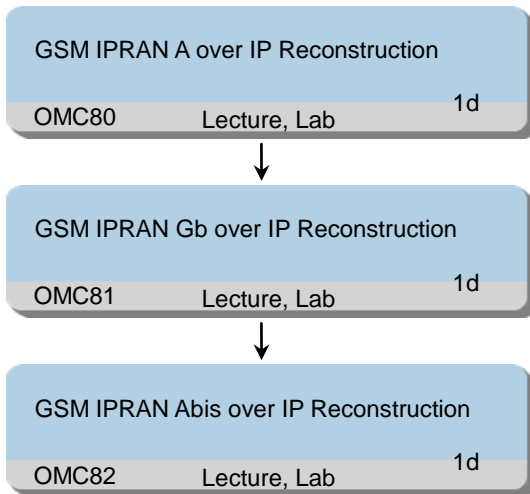
On completion of this program, the participants will be able to:

- 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
- 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
- Learn about the basic IP RAN resource planning
- Learn principles of IP address allocation and

- internal limitation of the RAN equipment
- Plan and configure the IP addresses for interface boards
 - Learn principles of planning VLAN and how to process VLAN tags
 - Understand data transmission between the protocol layer and the RAN equipment
 - Understand the IP RAN reliability-ensuring implementation mechanism
 - Understand the principles and application of the reliability detection mechanism
 - Know how to configure IP RAN reliability-ensuring parameters
 - Learn about the differences in reliability guarantee in different networking scenarios
 - Master the application schemes of the reliability-ensuring mechanism in different scenarios
 - 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
 - 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
 - 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
- Duration
- 4.75 working days
- Class Size
- Min 6, Max 12

2.1.34 GSM IPRAN Reconstruction Training

Training Path



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 program(s):
BSC6900 GSM V900R011/12/13/14 BSS
Operation and Maintenance Training

BSC6900 GSM V900R011/12/13/14 BSS
Configuration Training

Objectives

On completion of this program, 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
- Understand Gb over IP Networking, Hardware and IP design
- Prepare Gb over IP reconstruction script
- verify the Gb over IP reconstruction
- Understand Abis over IP Networking, Hardware and IP design
- Prepare Abis over IP reconstruction script
- verify the Abis over IP reconstruction

Duration

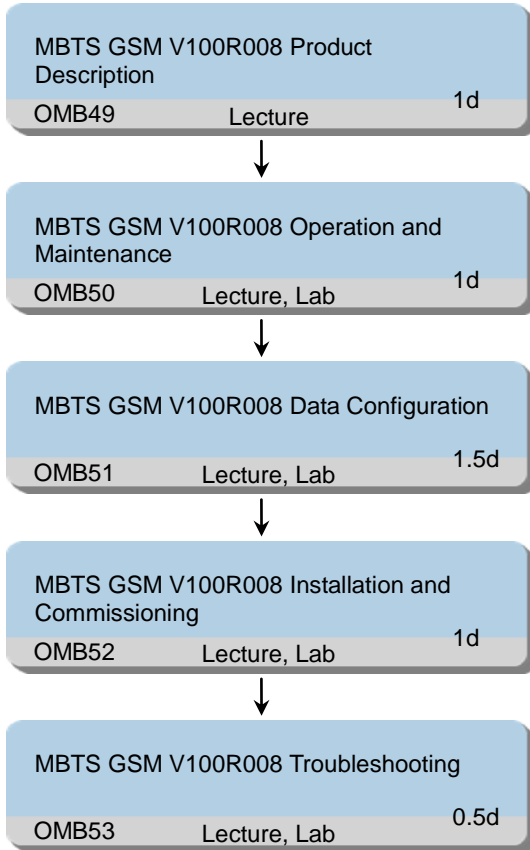
3 working days

Class Size

Min 6, Max 12

2.1.35 GSM BSS15.0 BTS Operation and Maintenance Training

Training Path



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 program(s):

BSC6900 GSM V900R011/12/13/14 BSS

Operation and Maintenance Training

BSC6900 GSM V900R011/12/13/14 BSS

Configuration Training

Objectives

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

- Describe the features of MBTS GSM products.
- Describe the hardware structure of MBTS GSM

- Describe the function of boards of MBTS GSM
- Explain the MBTS GSM signal flow.
- Check the hardware structure of the MBTS GSM, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects
- Describe the concepts of MBTS GSM management status.
- Describe the concepts of MBTS GSM operation status.
- Describe MBTS GSM routine operation and maintenance procedure.
- Explain how to use MBTS GSM remote maintenance console.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration via CME and LMT.
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform remote commissioning via M2000 and USB+M2000.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for BTS faults.
- Locate the troubleshooting cases for BTS faults.
- Analyze the troubleshooting cases for BTS

faults.

Class Size

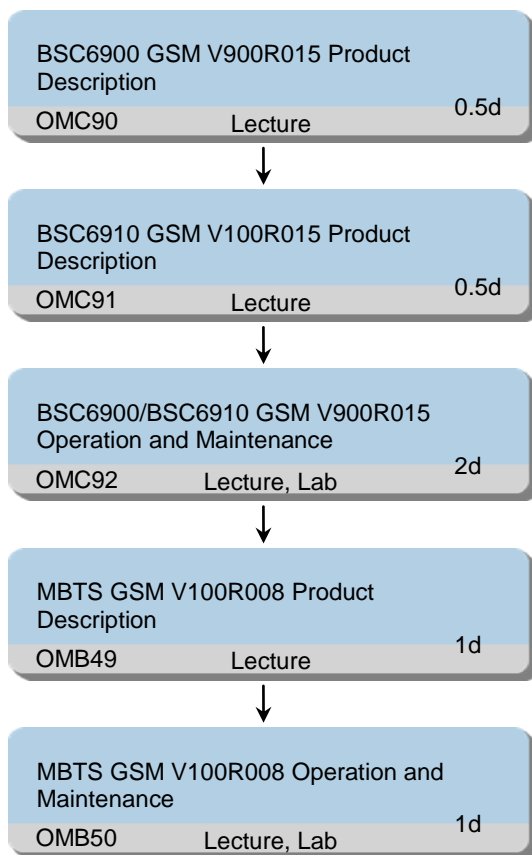
Duration

Min 6, Max 12

5 working days

2.1.36 GSM BSS15.0 BSS Operation and Maintenance Training (BSC6900/6910)

Training Path



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 program(s):

BSC6900 GSM V900R011/12/13/14 BSS

Operation and Maintenance Training

BSC6900 GSM V900R011/12/13/14 BSS

Configuration Training

Objectives

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

- State the structure and functions of important boards of BSC6900 GSM

- State the system structure and functions of modules of BSC6900 GSM
- State the system structure and functions of subrack of BSC6900 GSM
- State the performance features of BSC6900 GSM Only
- State the structure and functions of important boards of BSC6910 GSM
- State the system structure and functions of modules of BSC6910 GSM
- State the system structure and functions of subrack of BSC6910 GSM
- State the performance features of BSC6910 GSM
- Describe the work flow of BSC6900/BSC6910 maintenance.
- Describe important parameters in BSC6900/BSC6910 maintenance (Web LMT and MML) .
- Operate on the BSC6900/BSC6910 maintenance console.
- Perform the routine maintenance for BSC6900/BSC6910.
- Describe the features of MBTS GSM products.
- Describe the hardware structure of MBTS GSM
- Describe the function of boards of MBTS GSM
- Explain the MBTS GSM signal flow.
- Check the hardware structure of the MBTS GSM, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects
- Describe the concepts of MBTS GSM management status.
- Describe the concepts of MBTS GSM operation status.
- Describe MBTS GSM routine operation and maintenance procedure.
- Explain how to use MBTS GSM remote maintenance console.

Duration

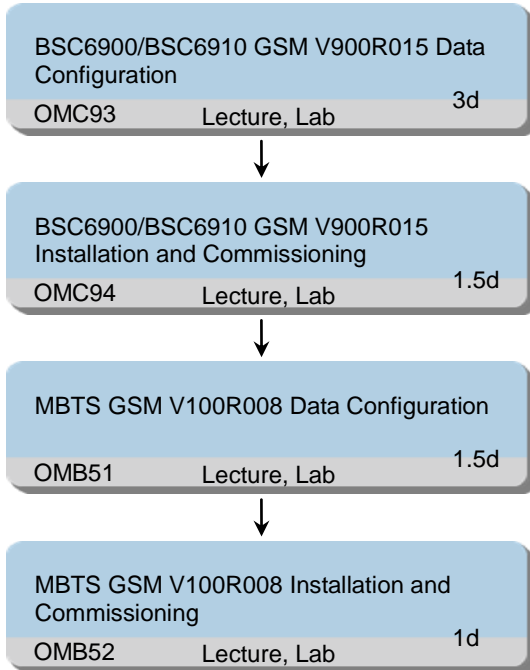
5 working days

Class Size

Min 6, Max 12

2.1.37 GSM BSS15.0 BSS Configuration Training (BSC6900/6910)

Training Path



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 program(s):
 BSC6900 GSM V900R011/12/13/14 BSS Operation and Maintenance Training
 BSC6900 GSM V900R011/12/13/14 BSS Configuration Training

Objectives

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

- Configure BSC6900/BSC6910 by Web LMT independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.

- Describe the loading procedure of data configuration.
- Configure BSC6900/BSC6910 by CME independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration via CME.
- Describe BSC6900/BSC6910 commissioning procedure
- Outline OMU software functions
- Complete BSC6900/BSC6910 commissioning
- Complete BSC6900/BSC6910 application software installation
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration via CME and LMT.
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform remote commissioning via M2000 and USB+M2000.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.

Duration

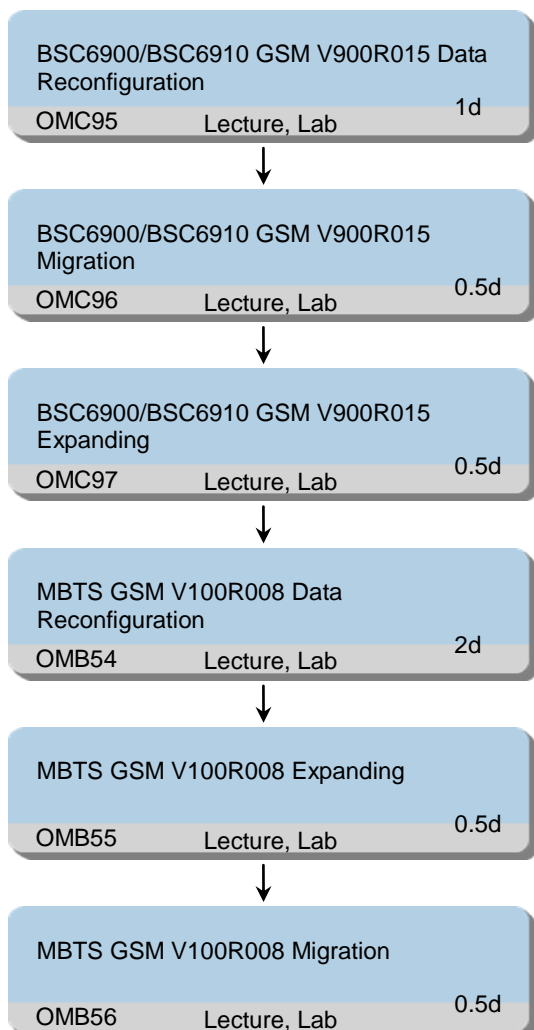
7 working days

Class Size

Min 6, Max 12

2.1.38 GSM BSS15.0 BSS Reconfiguration Training (BSC6900/6910)

Training Path



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 program(s):
 BSC6900 GSM V900R011/12/13/14 BSS Operation and Maintenance Training
 BSC6900 GSM V900R011/12/13/14 BSS Configuration Training

Objectives

On completion of this program, 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
- Detail the scenarios of BSC migration
- Detail the procedure of BSC migration
- Perform the BSC migration
- Describe the procedures of expanding the BSC capacity
- Perform how to add BSC board
- Perform how to add BSC Subrack
- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Repairment BTSs
- Describe the procedures of expanding the BTS capacity
- Perform how to add BTS Cells
- Perform how to add BTS TRXs
- Detail the scenarios of BTS migration
- Detail the procedure of BTS migration
- Perform the BTS migration

Duration

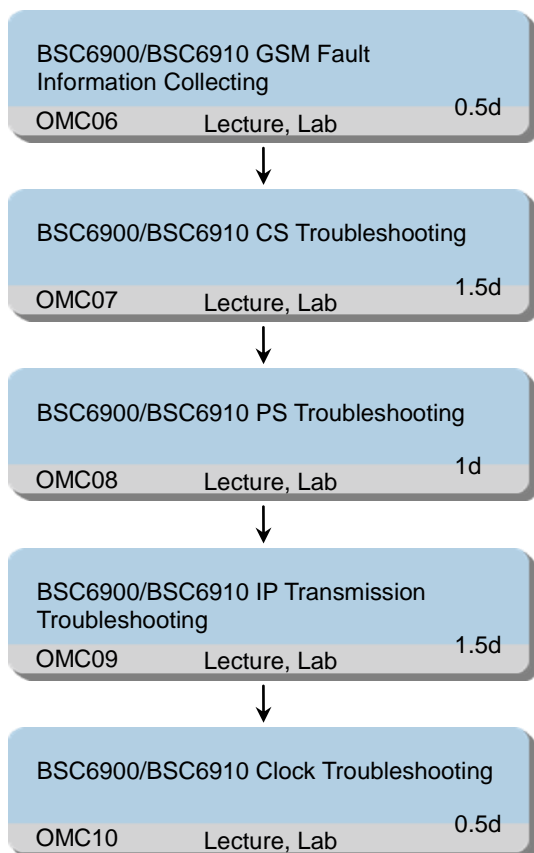
5 working days

Class Size

Min 6, Max 12

2.1.39 GSM BSS15.0 BSS Troubleshooting Training (BSC6900/6910)

Training Path



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 program(s):
 BSC6900 GSM V900R011/12/13/14 BSS Operation and Maintenance Training
 BSC6900 GSM V900R011/12/13/14 BSS

Configuration Training

Objectives

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

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

Duration

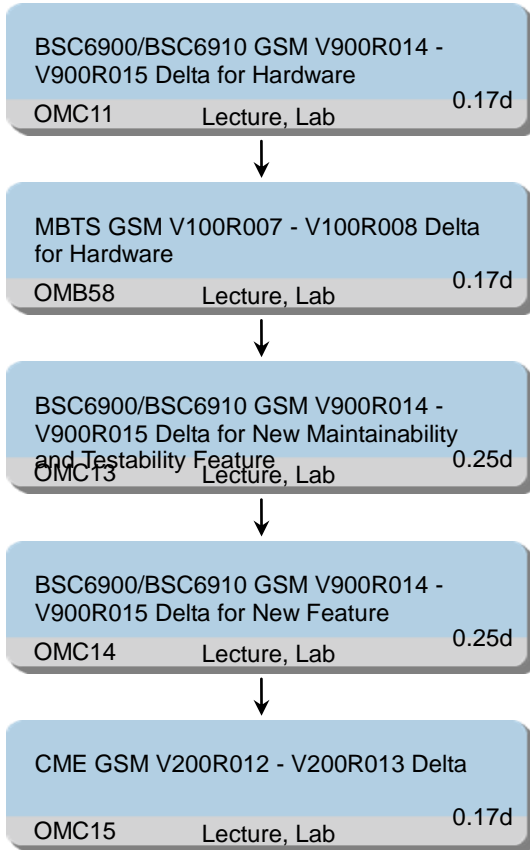
5 working days

Class Size

Min 6, Max 12

2.1.40 GSM BSS14.0 - BSS15.0 Product Delta Training (BSC6900/6910)

Training Path



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 program(s):
 BSC6900 GSM V900R011/12/13/14 BSS
 Operation and Maintenance Training

BSC6900 GSM V900R011/12/13/14 BSS
 Configuration Training

Objectives

On completion of this program, 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
- Know the new hardware adopted by the MBTS GU V100R008
- Know the New hardware configuration
- Know the principles and application scenarios of the O/M features
- Know the configuration procedures and implementation methods of the O/M features
- Know the principles and application scenarios of the new features
- Know the configuration procedures and implementation methods of the new features
- Know the new feature of CME
- Master the new feature for GSM, UMTS and SRAN

Duration

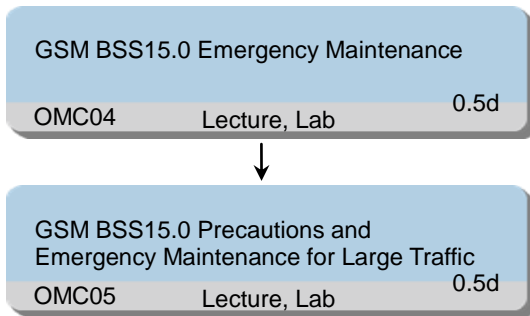
1 working day

Class Size

Min 6, Max 12

2.1.41 GSM BSS15.0 Emergency Maintenance Training (BSC6900/6910)

Training Path



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 program(s):
BSC6900 GSM V900R011/12/13/14 BSS Operation and Maintenance Training
BSC6900 GSM V900R011/12/13/14 BSS Configuration Training

Objectives

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

- Understand the Basic Symptoms About the Accident
- Know how to collect the related information
- Execute the quick emergency handling methods.
- Understand Precautions and Emergency Maintenance for Large Traffic
- Know how to adjust BSC parameters before large traffic
- Execute emergency maintenance for large traffic

Duration

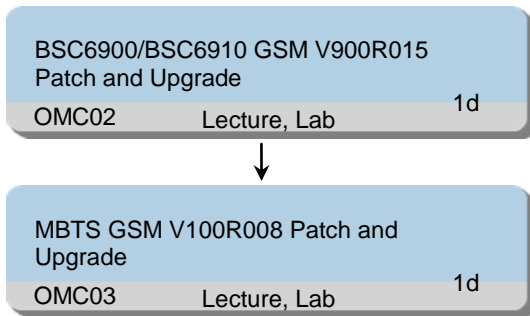
1 working day

Class Size

Min 6, Max 12

2.1.42 GSM BSS15.0 Patch and Upgrade Training (BSC6900/6910)

Training Path



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 program(s):

BSC6900 GSM V900R011/12/13/14 BSS

Operation and Maintenance Training

BSC6900 GSM V900R011/12/13/14 BSS

Configuration Training

Objectives

On completion of this program, 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
- Understand the basic concepts .
- Master MBTS GSM software upgrade procedures.

Duration

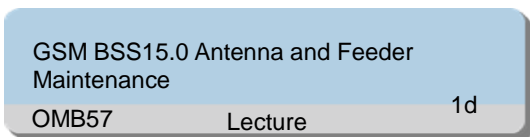
2 working days

Class Size

Min 6, Max 12

2.1.43 GSM BSS15.0 Antenna and Feeder Maintenance Training (BSC6900/6910)

Training Path



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 program(s):
BSC6900 GSM V900R011/12/13/14 BSS Operation and Maintenance Training
BSC6900 GSM V900R011/12/13/14 BSS Configuration Training

Objectives

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

- Describe Antenna and Feeder hardware

structure.

- Describe Antenna and Feeder maintenance
- Describe the Antenna and Feeder troubleshooting flow.
- Analyze the Antenna and Feeder fault reasons.
- Master the Antenna and Feeder troubleshooting.
- Describe the basic principles of intermodulation interference and CDMA network interference
- Explain how to troubleshoot interference problems by using the wireless air interface and RF maintenance / testing functions
- Explain principles of the wireless air interface and RF maintenance and testing functions
- Know how to use the wireless air interface and RF maintenance and testing functions

Duration

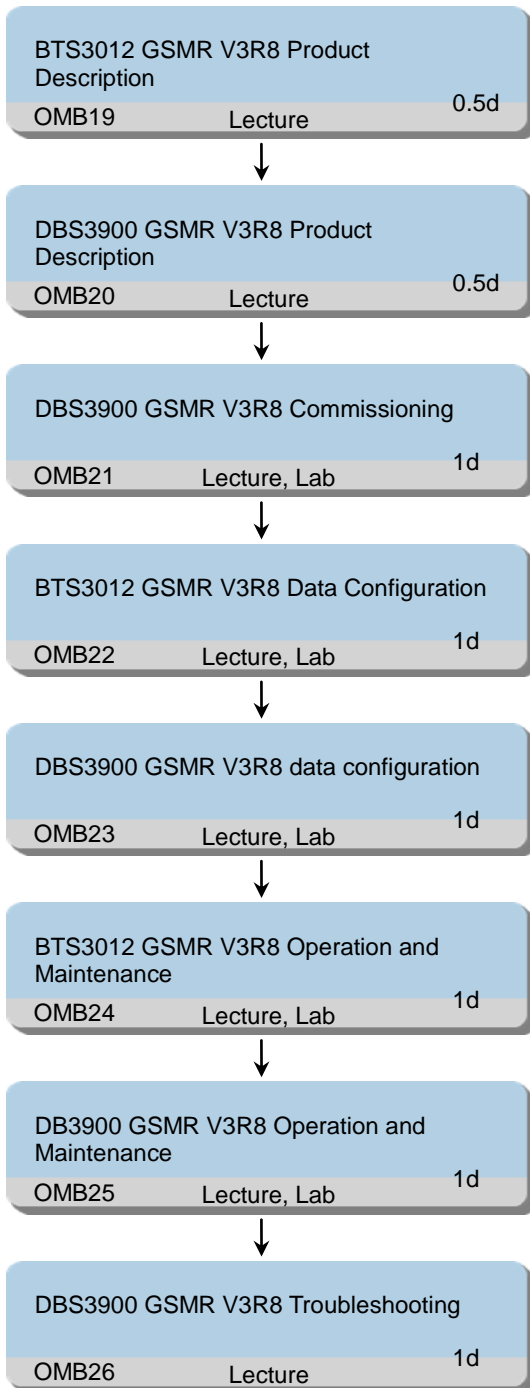
1 working day

Class Size

Min 6, Max 12

2.1.44 GSMR BTS Operation and Maintenance Training(BSC6000 V900R008C15)

Training Path



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 program(s):

Objectives

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

- Describe the features of Huawei BTS3012 products.
- Describe the hardware structure of BTS3012.
- Describe the function of boards of BTS3012.
- Explain the BTS signal flow.
- Explain the configuration principle of BTS hardware.
- Describe the features of Huawei BTS3900 products.
- Describe the hardware structure of BTS3900.
- Describe the function of boards of BTS3900.
- Explain the BTS signal flow.
- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe the steps to configure BTS3012 online.
- Describe the structure of BTS3012 data configuration.
- Explain how to add and delete site/cell/board.
- Explain how to define the ARFCN of carriers.
- Explain how to modify the relevant parameters.
- Describe the steps to configure BTS3900 online.
- Describe the structure of BTS3900 data configuration.
- Explain how to add and delete site/cell/board.
- Explain how to define the ARFCN of carriers.
- Explain how to modify the relevant parameters.
- Describe site maintenance objects.
- Describe the concepts of BTS3012 management status.
- Describe the concepts of BTS3012 operation status.
- Describe BTS3012 routine operation and

maintenance procedure.

- Explain how to use BTS3012 remote maintenance console.
- Describe site maintenance objects.
- Describe the concepts of BTS3900 management status.
- Describe the concepts of BTS3900 operation status.
- Describe BTS3900 routine operation and maintenance procedure.
- Explain how to use BTS3900 remote maintenance console.
- Describe the procedure of checking the BTS transmission.
- Implement the connection of Transmission Devices.
- Master the loading procedure of BTS, and check the current version to ensure the loading

step.

- Identify the way to check the different alarm of BTS.
- Understand BTS safety precautions of maintenance.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for common BTS faults.
- Locate the troubleshooting cases for common BTS faults.
- Analyze the troubleshooting cases for common BTS faults.

Duration

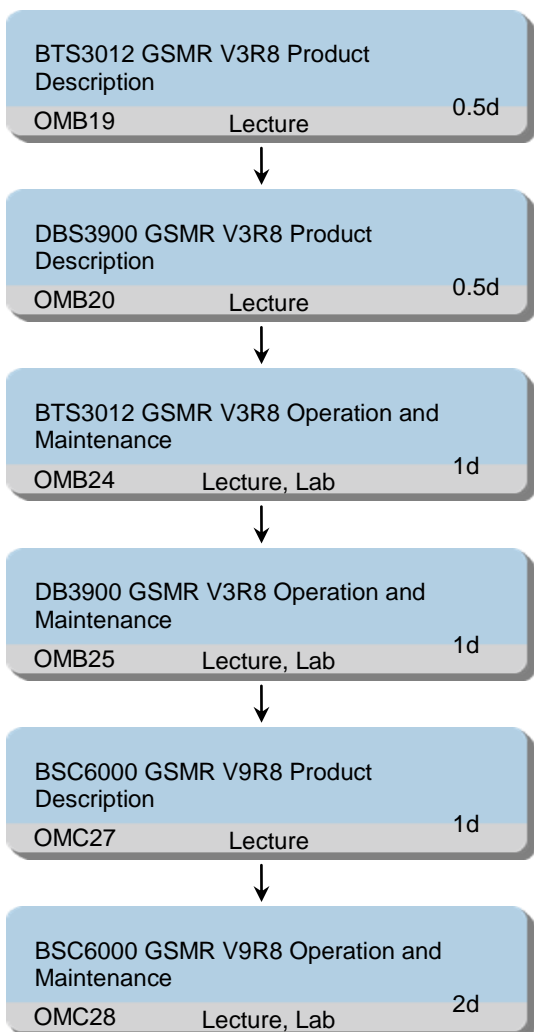
5 working days

Class Size

Min 6, Max 12

2.1.45 GSMR BSS Operation and Maintenance Training(BSC6000 V900R008C15)

Training Path



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

Objectives

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

- State the structure and functions of important boards of BSC6000.
- State the system structure and functions of

modules of BSC6000.

- Describe the features of Huawei BTS3012 products.
- Describe the hardware structure of BTS3012.
- Describe the function of boards of BTS3012.
- Explain the BTS signal flow.
- Explain the configuration principle of BTS hardware.
- Describe the features of Huawei BTS3900 products.
- Describe the hardware structure of BTS3900.
- Describe the function of boards of BTS3900.
- Explain the BTS signal flow.
- Check the hardware structure of the BTS, such as the cabinet, subrack, board, and cable.
- Describe site maintenance objects.
- Describe the concepts of BTS3012 management status.
- Describe the concepts of BTS3012 operation status.
- Describe BTS3012 routine operation and maintenance procedure.
- Explain how to use BTS3012 remote maintenance console.
- Describe site maintenance objects.
- Describe the concepts of BTS3900 management status.
- Describe the concepts of BTS3900 operation status.
- Describe BTS3900 routine operation and maintenance procedure.
- Explain how to use BTS3900 remote maintenance console.
- Describe the work flow of BSC6000 maintenance.
- Describe important parameters in BSC6000 maintenance.
- Operate on the BSC6000 maintenance console.
- Perform the routine maintenance for BSC6000.

Duration

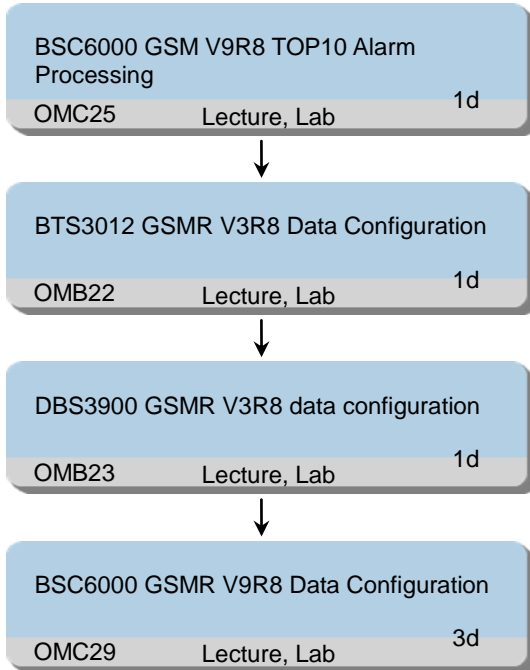
5 working days

Class Size

Min 6, Max 12

2.1.46 GSMR BSS Configuration Training(BSC6000V900R008C15)

Training Path



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 program(s):
 GSMR BSS Operation and Maintenance Training(BSC6000 V900R008C15)

Objectives

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

- Describe the function of BSC6000 data configuration system function.
- Configure BSC6000 by data configuration console independently.
- Describe the configuration of important parameters of BSS system.
- Check the data configuration correctness and validity.
- Describe the steps to configure BTS3900 online.
- Describe the structure of BTS3900 data configuration.
- Explain how to add and delete site/cell/board.
- Explain how to define the ARFCN of carriers.
- Explain how to modify the relevant parameters.
- Describe the steps to configure BTS3012 online.
- Describe the structure of BTS3012 data configuration.
- Explain how to add and delete site/cell/board.
- Explain how to define the ARFCN of carriers.
- Explain how to modify the relevant parameters.
- Describe the BSC6000 TOP10 alarm troubleshooting procedure.
- Describe the troubleshooting phenomenon for common BSC6000 faults.

Duration

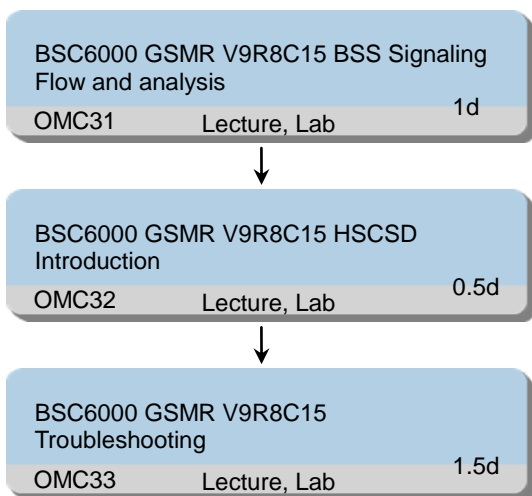
5 working days

Class Size

Min 6, Max 12

2.1.47 GSMR BSS Troubleshooting Training(BSC6000V900R008C15)

Training Path



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 program(s):
GSMR BSS Operation and Maintenance Training(BSC6000 V900R008C15)

GSMR BSS Configuration

Training(BSC6000V900R008C15)

Objectives

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

- Describe the BSS signaling flow.
- Analysis the BSS signaling message.
- Describe the principle and application of HSCSD
- Describe the BSC6000 and BTS troubleshooting procedure.
- Describe the troubleshooting phenomenon for common BSC6000 and BTS faults.
- Locate, analyze and eliminate the troubleshooting cases for common BSC6000 and MBTS faults.
- Analyze the signaling message for troubleshooting.

Duration

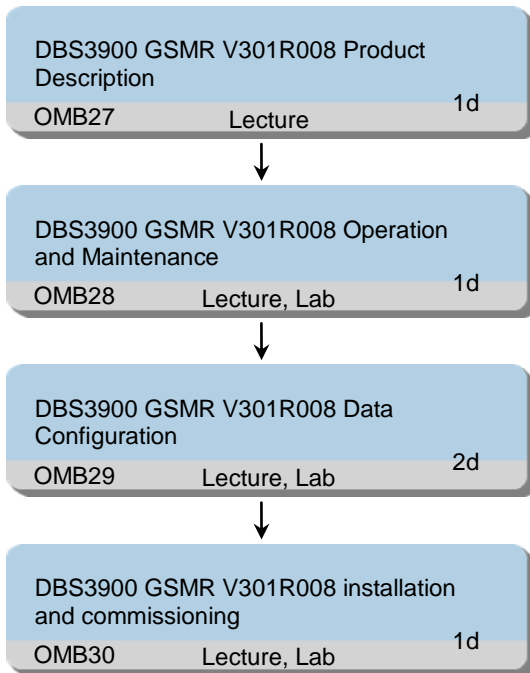
3 working days

Class Size

Min 6, Max 12

2.1.48 GSMR BTS Operation and Maintenance Training(BSC6000 V901R008)

Training Path



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

Objectives

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

- Describe the features of DBS3900 products.
- Describe the hardware structure of DBS3900.
- Describe the function of boards of DBS3900.
- Explain the DBS signal flow.
- Check the hardware structure of the DBS, such as the cabinet, subrack, board, and cable.

- Describe GSM site maintenance objects(Web LMT and MML).
- Describe the concepts of DBS3900 management status.
- Describe the concepts of DBS3900 operation status.
- Describe DBS3900 routine operation and maintenance procedure.
- Explain how to use DBS3900 remote maintenance console.
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.
- Describe the procedure of checking the BTS transmission.
- Implement the connection of Transmission Devices.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.

Duration

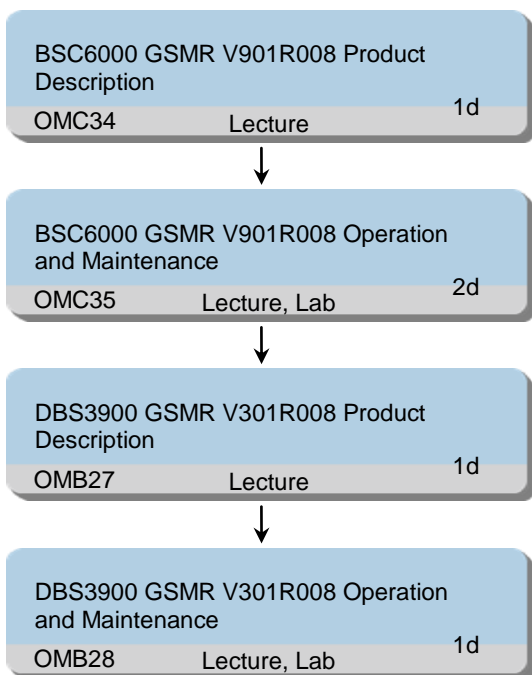
5 working days

Class Size

Min 6, Max 12

2.1.49 GSMR BSS Operation and Maintenance Training(BSC6000 V901R008)

Training Path



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

Objectives

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

- State the structure and functions of important boards of BSC6000 GSMR.
- State the system structure and functions of modules of BSC6000 GSMR.

- State the system structure and functions of subrack of BSC6000 GSMR.
- State the performance features of BSC6000 GSMR.
- Describe the work flow of BSC6000 maintenance.
- Describe important parameters in BSC6000 maintenance (Web LMT and MML) .
- Operate on the BSC6000 maintenance console.
- Perform the routine maintenance for BSC6000.
- Describe the features of DBS3900 products.
- Describe the hardware structure of DBS3900.
- Describe the function of boards of DBS3900.
- Explain the DBS signal flow.
- Check the hardware structure of the DBS, such as the cabinet, subrack, board, and cable.
- Describe GSM site maintenance objects(Web LMT and MML).
- Describe the concepts of DBS3900 management status.
- Describe the concepts of DBS3900 operation status.
- Describe DBS3900 routine operation and maintenance procedure.
- Explain how to use DBS3900 remote maintenance console.

Duration

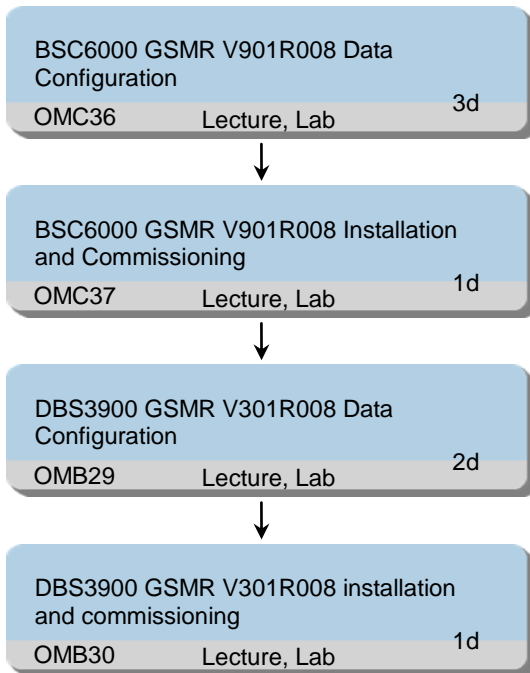
5 working days

Class Size

Min 6, Max 12

2.1.50 GSMR BSS Configuration Training(BSC6000 V901R008)

Training Path



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 program(s):
 GSMR BSS Operation and Maintenance Training(BSC6000 V901R008)

Objectives

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

- Configure BSC6000 by Web LMT independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data

configuration.

- Configure BSC6000 by CME independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration.
- Describe BSC6900 commissioning procedure
- Outline OMU software functions
- Complete BSC6900 commissioning
- Complete BSC6900 application software installation
- Describe the alarm and server verification after commissioning
- Outline the user interface of Web LMT configuration tool.
- Illustrate the data configuration procedure.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.
- Describe the procedure of checking the BTS transmission.
- Implement the connection of Transmission Devices.
- Master the loading procedure of BTS, and check the current version to ensure the loading step.
- Identify the way to check the different alarm of BTS.

Duration

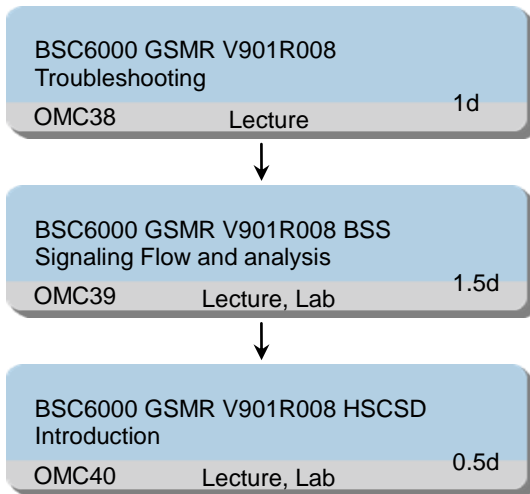
7 working days

Class Size

Min 6, Max 12

2.1.51 GSMR BSS Troubleshooting Training(BSC6000 V901R008)

Training Path



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 program(s):
GSMR BSS Operation and Maintenance Training (BSC6000 V901R008)
GSMR BSS Configuration Training(BSC6000V901R008)

Objectives

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

- Understand BSC6000 safety precautions of maintenance.
- Describe the BSC6000 troubleshooting flow.
- Describe the troubleshooting phenomenon for common BSC6000 faults.
- Locate the troubleshooting cases for common BSC6000 faults.
- Analyze the troubleshooting cases for common BSC6000 faults.
- Perform the troubleshooting for common BSC6000 faults.
- Describe the BSS signaling flow.
- Analysis the BSS signaling message.
- Describe the principle and application of HSCSD

Duration

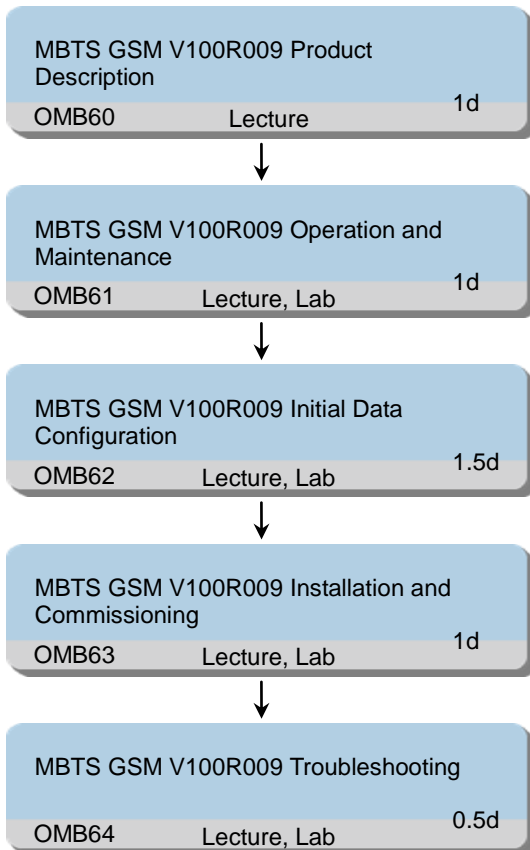
3 working days

Class Size

Min 6, Max 12

2.1.52 GSM BSS16.0 BTS Operation and Maintenance Training

Training Path



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 program(s): BSC6900 GSM V900R011/12/13/14/15 BSS Operation and Maintenance Training
- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

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

- Describe the features of MBTS GSM products
- Describe the hardware structure of MBTS GSM

- Describe the function of boards of MBTS GSM
- Explain the MBTS GSM signal flow
- Check the hardware structure of the MBTS GSM, such as the cabinet, subrack, board, and cable
- Describe GSM site maintenance objects
- Describe the concepts of MBTS GSM management status
- Describe the concepts of MBTS GSM operation status
- Describe MBTS GSM routine operation and maintenance procedure
- Explain how to use MBTS GSM remote maintenance console
- Outline the user interface of Web LMT configuration tool
- Illustrate the data configuration procedure
- Explain key parameters in each step during data configuration procedure
- Implement the data configuration with template file
- Perform initial data configuration via CME and LMT
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform remote commissioning via U2000 and USB+U2000
- Master the loading procedure of BTS, and check the current version to ensure the loading step
- Identify the way to check the different alarm of BTS
- Describe the BTS troubleshooting flow
- Describe the troubleshooting phenomenon for BTS faults
- Locate the troubleshooting cases for BTS faults
- Analyze the troubleshooting cases for BTS

faults

Duration

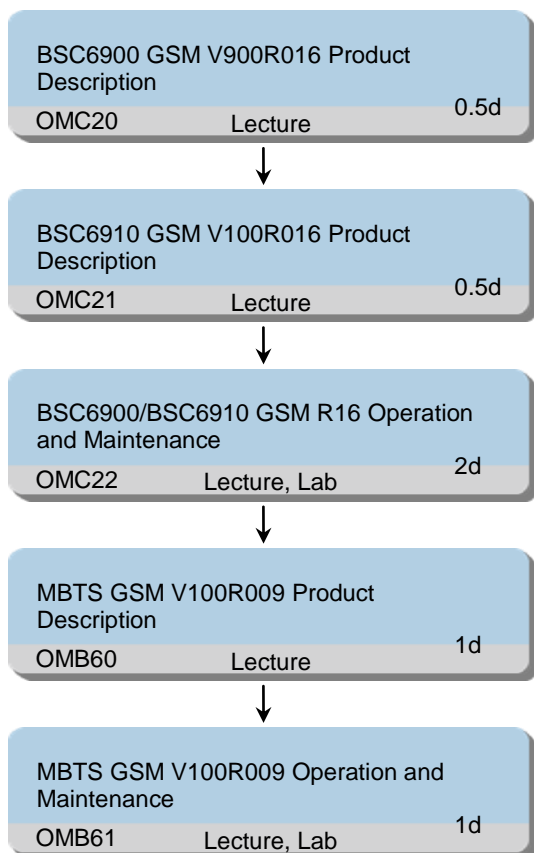
5 working days

Class Size

Min 6, max 12

2.1.53 GSM BSS16.0 BSS Operation and Maintenance Training (BSC6900/6910)

Training Path



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 program(s): BSC6900 GSM V900R011/12/13/14/15 BSS Operation and Maintenance Training
- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

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

- State the structure and functions of important boards of BSC6900 GSM
- State the system structure and functions of

modules of BSC6900 GSM

- State the system structure and functions of subrack of BSC6900 GSM
- State the performance features of BSC6900 GSM Only
- State the structure and functions of important boards of BSC6910 GSM
- State the system structure and functions of modules of BSC6910 GSM
- State the system structure and functions of subrack of BSC6910 GSM
- State the performance features of BSC6910 GSM
- Describe the work flow of BSC6900/BSC6910 maintenance
- Describe important parameters in BSC6900/BSC6910 maintenance (Web LMT and MML)
- Operate on the BSC6900/BSC6910 maintenance console
- Perform the routine maintenance for BSC6900/BSC6910
- Describe the features of MBTS GSM products
- Describe the hardware structure of MBTS GSM
- Describe the function of boards of MBTS GSM
- Explain the MBTS GSM signal flow
- Check the hardware structure of the MBTS GSM, such as the cabinet, subrack, board, and cable
- Describe GSM site maintenance objects
- Describe the concepts of MBTS GSM management status
- Describe the concepts of MBTS GSM operation status
- Describe MBTS GSM routine operation and maintenance procedure
- Explain how to use MBTS GSM remote maintenance console

Duration

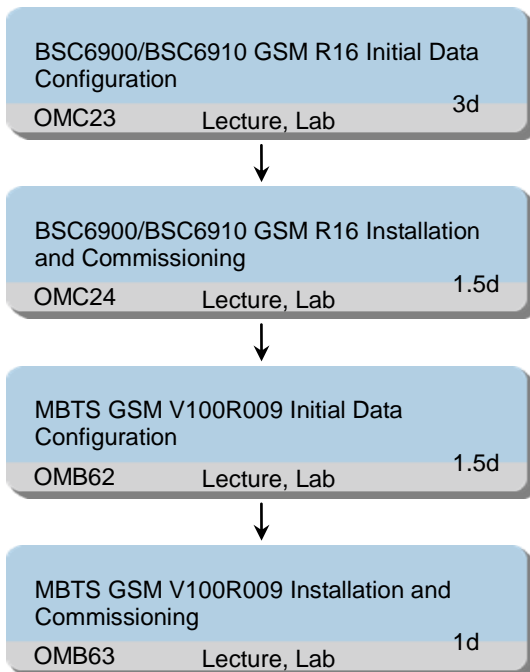
5 working days

Class Size

Min 6, max 12

2.1.54 GSM BSS16.0 BSS Configuration Training (BSC6900/6910)

Training Path



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 program(s): BSC6900 GSM V900R011/12/13/14/15 BSS Operation and Maintenance Training
- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

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

- Configure BSC6900/BSC6910 by Web LMT independently
- Describe the configuration of important parameters of GSM BSS system
- Check the data configuration correctness and validity
- Describe the loading procedure of data

configuration

- Configure BSC6900/BSC6910 by CME independently
- Describe the configuration of important parameters of GSM BSS system
- Check the data configuration correctness and validity
- Describe the loading procedure of data configuration via CME
- Describe BSC6900/BSC6910 commissioning procedure
- Outline OMU software functions
- Complete BSC6900/BSC6910 commissioning
- Complete BSC6900/BSC6910 application software installation
- Outline the user interface of Web LMT configuration tool
- Illustrate the data configuration procedure
- Explain key parameters in each step during data configuration procedure
- Implement the data configuration with template file
- Perform initial data configuration via CME and LMT
- Describe the installation procedure
- Describe the software commissioning procedures in different scenarios
- Describe the different commissioning mode according to different scenarios
- Perform remote commissioning via U2000 and USB+U2000
- Master the loading procedure of BTS, and check the current version to ensure the loading step
- Identify the way to check the different alarm of BTS

Duration

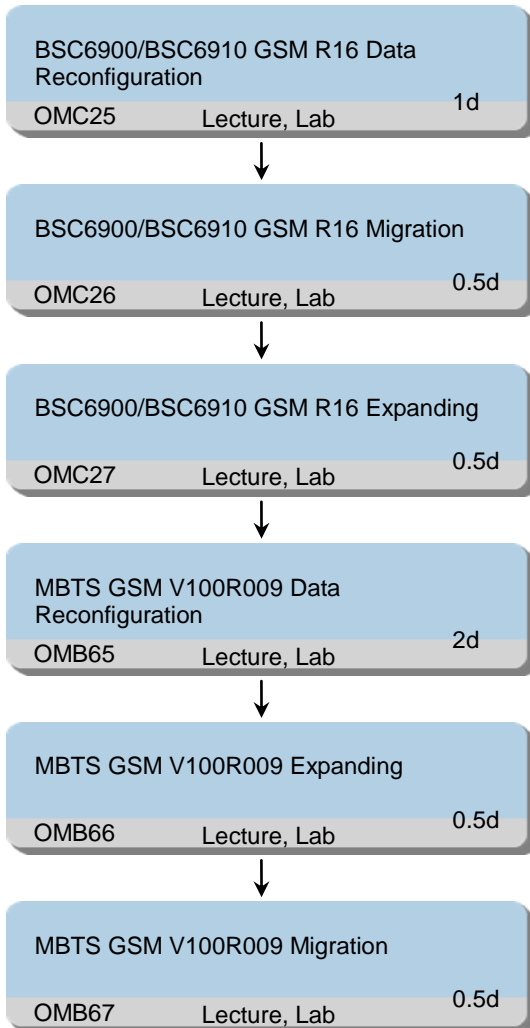
7 working days

Class Size

Min 6, max 12

2.1.55 GSM BSS16.0 BSS Reconfiguration Training (BSC6900/6910)

Training Path



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 program(s): BSC6900 GSM V900R011/12/13/14/15 BSS Operation and Maintenance Training
- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

On completion of this program, 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
- Detail the scenarios of BSC migration
- Detail the procedure of BSC migration
- Perform the BSC migration
- Describe the procedures of expanding the BSC capacity
- Perform how to add BSC board
- Perform how to add BSC Subrack
- Describe the procedure of MBTS dynamic data adjustment
- Adjust the Global/Device/Transmission Data
- Adjust the Cells/TRXs/Channels Data
- Adjust the BTS Data
- Repair and re-homing BTSs
- Describe the procedures of expanding the BTS capacity
- Perform how to add BTS Cells
- Perform how to add BTS TRXs
- Detail the scenarios of BTS migration
- Detail the procedure of BTS migration
- Perform the BTS migration

Duration

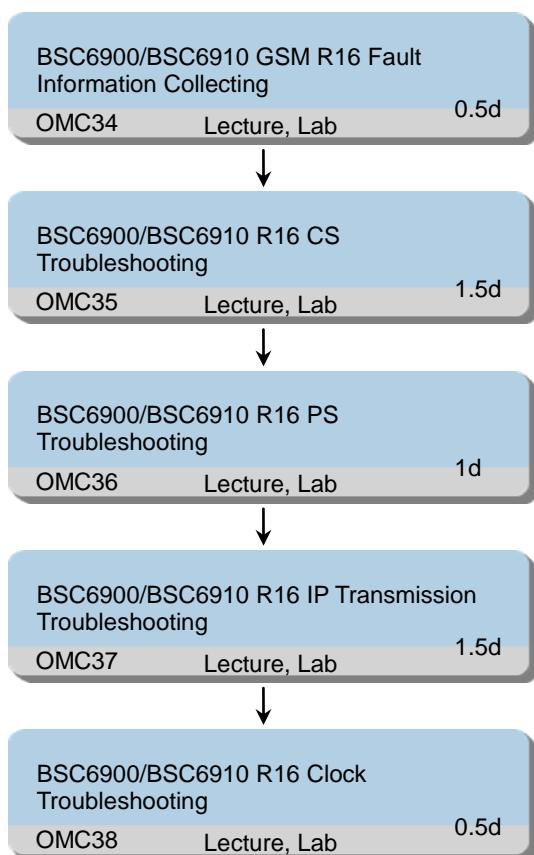
5 working days

Class Size

Min 6, max 12

2.1.56 GSM BSS16.0 BSS Troubleshooting Training (BSC6900/6910)

Training Path



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 program(s): BSC6900 GSM V900R011/12/13/14/15 BSS Operation and Maintenance Training
- BSC6900 GSM V900R011/12/13/14/15 BSS

Configuration Training Objectives

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

- Describe the OMU Maintenance and Operation
- Know how to collect the fault information for CS and PS fault
- Describe where is the different file in OMU
- Describe the functions of different files
- 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
- Describe the PS Fault Troubleshooting flow
- Know how to do PS Data rate Troubleshooting
- Know how to do PS Access Troubleshooting
- Know how to Analyze PS KPI
- 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
- Describe Clock Fault Troubleshooting Flow
- Know how to do Clock troubleshooting

Duration

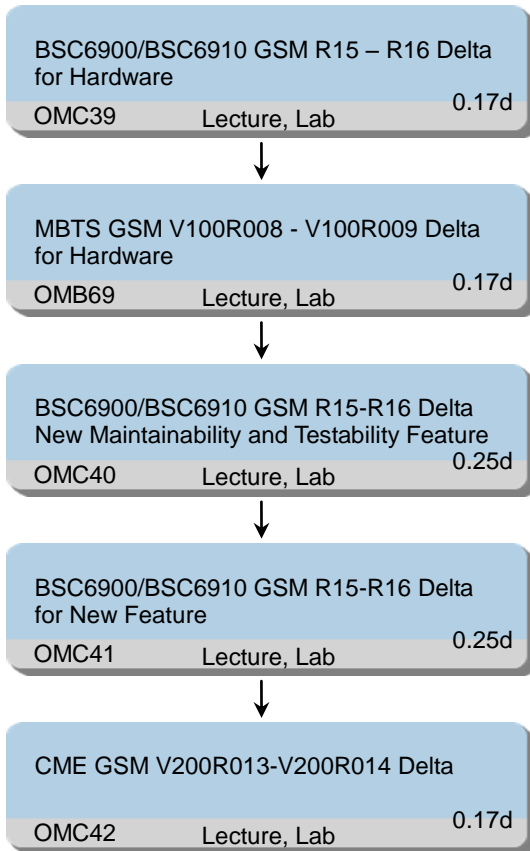
5 working days

Class Size

Min 6, max 12

2.1.57 GSM BSS15.0 - BSS16.0 Product Delta Training (BSC6900/6910)

Training Path



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 program(s): BSC6900 GSM V900R011/12/13/14/15 BSS Operation and

Maintenance Training

- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

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

- Know the capacity specifications of the BSC6900/6910 R16
- Know the new hardware adopted by the BSC6900/6910 R16
- Know the hardware configuration and capacity of the BSC6900/6910 R16
- Know the new hardware adopted by the MBTS GU V100R009
- Know the New hardware configuration
- Know the principles and application scenarios of the O/M features
- Know the configuration procedures and implementation methods of the O/M features
- Know the principles and application scenarios of the new features
- Know the configuration procedures and implementation methods of the new features
- Know the new feature of CME
- Master the new feature for GSM

Duration

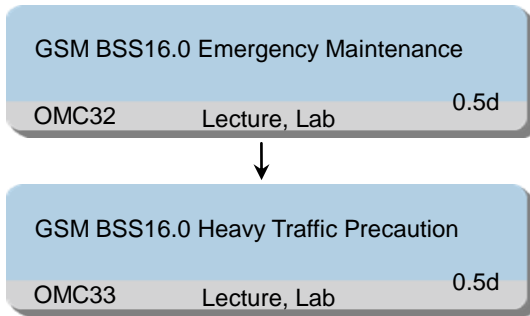
1 working day

Class Size

Min 6, max 12

2.1.58 GSM BSS16.0 Emergency Maintenance Training (BSC6900/6910)

Training Path



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 program(s): BSC6900 GSM V900R011/12/13/14/15 BSS Operation and Maintenance Training

- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

On completion of this program, 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
- Understand Precautions and Emergency Maintenance for heavy Traffic
- Know how to adjust BSC parameters before heavy traffic
- Excute emergency maintenance for heavy traffic

Duration

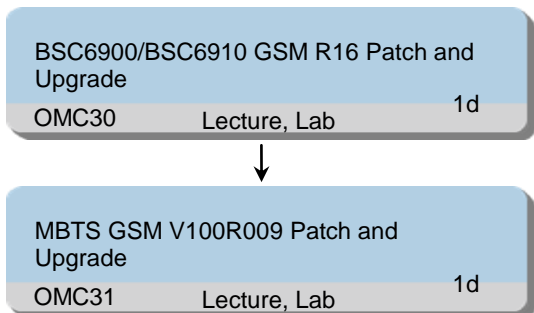
1 working day

Class Size

Min 6, max 12

2.1.59 GSM BSS16.0 Patch and Upgrade Training (BSC6900/6910)

Training Path



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 program(s):
- BSC6900 GSM V900R011/12/13/14/15 BSS

Operation and Maintenance Training

- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

On completion of this program, 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
- Understand the basic concepts
- Master MBTS GSM software upgrade procedures

Duration

2 working days

Class Size

Min 6, max 12

2.1.60 GSM BSS16.0 Antenna and Feeder Maintenance Training (BSC6900/6910)

Training Path

GSM BSS16.0 Antenna and Feeder Maintenance		
OMB68	Lecture	1d

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 program(s):
- BSC6900 GSM V900R011/12/13/14/15 BSS Operation and Maintenance Training
- BSC6900 GSM V900R011/12/13/14/15 BSS Configuration Training

Objectives

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

- Describe Antenna and Feeder hardware structure
- Describe Antenna and Feeder maintenance
- Describe the Antenna and Feeder troubleshooting flow
- Analyse the Antenna and Feeder fault reasons
- Master the Antenna and Feeder troubleshooting
- Describe the basic principles of intermodulation interference and CDMA network interference
- Explain how to troubleshoot interference problems by using the wireless air interface and RF maintenance / testing functions
- Explain principles of the wireless air interface and RF maintenance and testing functions
- Know how to use the wireless air interface and RF maintenance and testing functions

Duration

1 working day

Class Size

Min 6, max 12

2.2 GSM Product WBT Training Programs

2.2.1 BSC6900 GSM V9R13 Product Description(WBT)

Training Path

BSC6900 GSM V9R13 Product Description (WBT)		
NA	WBT	1h

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

Objectives

On completion of this program, the participants will

be able to:

- State the structure and functions of important boards of BSC6900.
- State the system structure and functions of modules of BSC6900.
- State the system structure and functions of subracks of BSC6900.
- State the performance features of BSC6900

Duration

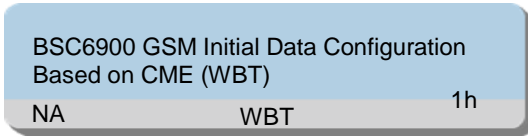
1 hour

Class Size

No limit

2.2.2 BSC6900 GSM Initial Data Configuration Based on CME(WBT)

Training Path



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

Objectives

On completion of this program, the participants will

be able to:

- Configure BSC6900 by CME independently.
- Describe the configuration of important parameters of GSM BSS system.
- Check the data configuration correctness and validity.
- Describe the loading procedure of data configuration via CME.

Duration

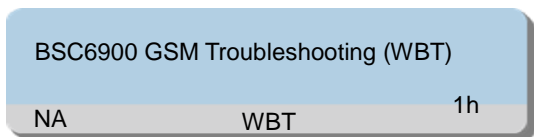
1 hour

Class Size

No limit

2.2.3 BSC6900 GSM Troubleshooting (WBT)

Training Path



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

Objectives

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

- Understand BSC6900 safety precautions of

maintenance.

- Describe the BSC6900 troubleshooting flow.
- Describe the troubleshooting phenomenon for common BSC6900 faults.
- Locate the troubleshooting cases for common BSC6900 faults.
- Analyze the troubleshooting cases for common BSC6900 faults.
- Perform the troubleshooting for common BSC6900 faults.

Duration

1 hour

Class Size

No limit

2.2.4 MBTS GSM V100R004 Product Description(WBT)

Training Path

MBTS GSM V100R004 Product Description(WBT)		
NA	WBT	1h

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

Objectives

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

- Describe the features of MBTS (GSM Only) products.
- Describe the hardware structure of MBTS (GSM Only).
- Describe the function of boards of MBTS (GSM Only).
- Explain the MBTS signal flow.
- Check the hardware structure of the MBTS, such as the cabinet, subrack, board, and cable.

Duration

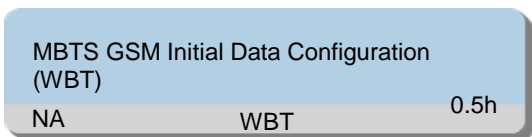
1 hour

Class Size

No limit

2.2.5 MBTS GSM Initial Data Configuration (WBT)

Training Path



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

Objectives

On completion of this program, the participants will

be able to:

- Illustrate the data configuration procedure based on CME.
- Explain key parameters in each step during data configuration procedure.
- Implement the data configuration with template file.
- Perform initial data configuration and dynamic modification.

Duration

0.5 hour

Class Size

No limit

2.2.6 MBTS GSM V100R004 Operation and Maintenance(WBT)

Training Path

MBTS GSM V100R004 Operation and Maintenance(WBT)		
NA	WBT	1h

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

Objectives

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

- Describe GSM site maintenance objects (Web LMT and MML).
- Describe the concepts of MBTS (GSM Only) management status.
- Describe the concepts of MBTS (GSM Only) operation status.
- Describe MBTS GSM routine operation and maintenance procedure.
- Explain how to use MBTS (GSM Only) remote maintenance console.

Duration

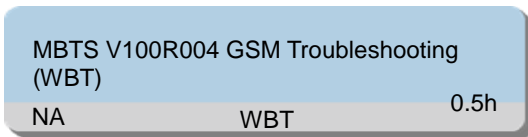
1 hour

Class Size

No limit

2.2.7 MBTS V100R004 GSM Troubleshooting (WBT)

Training Path



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

Objectives

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

- Understand BTS safety precautions of maintenance.
- Describe the BTS troubleshooting flow.
- Describe the troubleshooting phenomenon for common BTS faults.
- Locate the troubleshooting cases for common BTS faults.
- Analyze the troubleshooting cases for common BTS faults.

Duration

0.5 hour

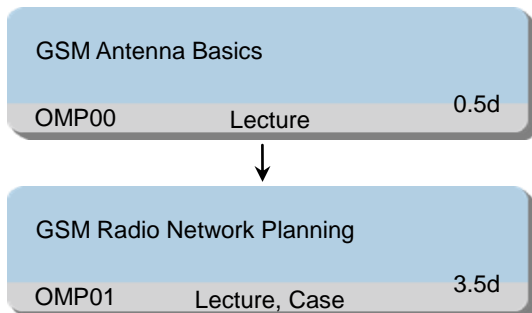
Class Size

No limit

2.3 GSM RNP&RNO Training Programs

2.3.1 GSM Radio Network Design and Planning Training

Training Path



Target Audience

GSM Radio Network Planning Engineers

Prerequisites

- Basic knowledge of mobile communications

Objectives

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

- Describe the theory of radio signal propagation
- Describe the radio signal propagation model
- Interpret the structure of the antenna equipments
- Interpret the features of the antenna equipments

- Implement selecting the suitable antenna type
- Outline the key specifications of antenna
- Implement GSM radio network coverage planning
- Explain the link budget model and its application
- Explain the advance technology for improving coverage
- Implement GSM radio network traffic capacity planning on TCHF/TCHH/SDCCH
- Explain the capacity enhancement technology
- Explain the location area planning?
- Describe the paging ability of radio network
- Explain GSM frequency resource, C/I conception, frequency reuse definition, and frequency tighten reuse technology and its application

Duration

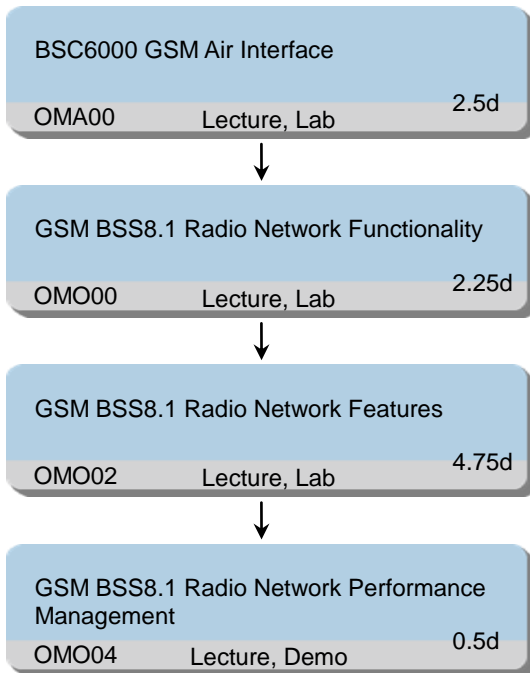
4 working days

Class Size

Min 6, Max 12

2.3.2 BSC6000 GSM Radio Network Optimization Training

Training Path



Target Audience

GSM Radio Network Optimization Engineers

Prerequisites

Basic knowledge of mobile communications

At least 1 year working experience in GSM wireless network optimization

Objectives

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

- Describe the function of each kind of logical channel
- Describe the general radio signal process on Um interface
- State the techniques used on Um interface
- Describe typical GSM communication flow
- Perform the operation for interface message trace
- Identify the messages on A interface and Abis interface

- Analysis the messages on A interface and Abis interface
- Explain the important message parameters
- Identify the fault by the method of analyzing the signaling flow
- List the MS behaviors in idle mode
- Describe the parameters associated with MS behaviors in idle mode
- List the types of frequency hopping
- Describe the functions of frequency hopping algorithm
- Describe the parameters of frequency hopping
- Describe the general flow of GSM power control algorithm
- Interpret Huawei power control algorithm II
- Interpret Huawei power control algorithm III
- Describe the other features about power control
- Describe the general flow of GSM handover algorithm
- Interpret Huawei handover algorithm I/II
- Describe the enhanced full rate algorithm
- Describe the half rate algorithm
- Describe the adaptive multiple rate algorithm
- Describe the GSM radio channel allocation algorithm II
- Describe the operations about performance management based on M2000
- Interpret the general analysis procedure of traffic analysis
- Interpret the functions of some typical counters

Duration

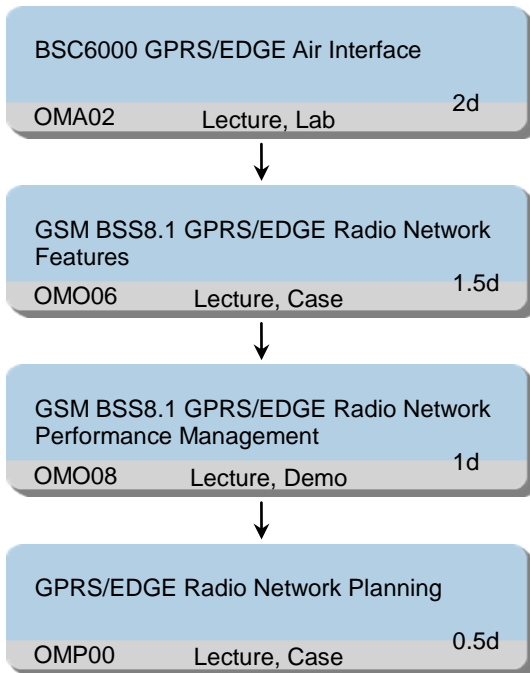
10 working days

Class Size

Min 6, Max 12

2.3.3 BSC6000 GPRS/EDGE Radio Network Planning and Optimization Training

Training Path



Target Audience

GPRS/EDGE Radio Network Planning and Optimization Engineers

Prerequisites

Basic knowledge of mobile communications
At least 1 year working experience in GPRS/EDGE wireless network planning and optimization

Objectives

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

- Outline the GPRS/EDGE network structure and functions of entities in GPRS network
- Describe the GPRS/EDGE frame structure of Um interface
- Describe the function of each kind of logical channel

- Describe the typical application scenarios of different logical channel
- Describe the multiple timeslot ability of GPRS/EDGE MS
- Describe GPRS/EDGE channel setup flow
- Describe GPRS/EDGE channel release flow
- List the typical parameters for GPRS/EDGE radio network optimization
- Interpret the typical parameters for GPRS/EDGE radio network optimization
- Describe GPRS/EDGE power control algorithm
- Describe GPRS/EDGE cell reselection conditions
- Describe the operations about performance management based on M2000
- Interpret the functions of typical counters
- List the typical KPIs
- Interpret the definition and measurement points of typical KPIs
- Describe the work flow of GPRS/EDGE radio network planning
- Implement GPRS/EDGE radio network traffic capacity planning
- Implement GPRS/EDGE radio network coverage planning
- Implement GPRS/EDGE radio network frequency planning
- Describe the influence to the GSM network

Duration

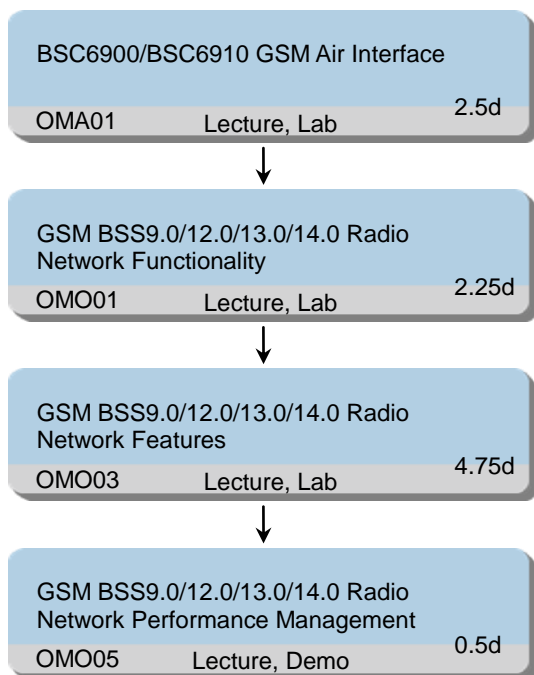
5 working days

Class Size

Min 6, Max 12

2.3.4 BSC6900/BSC6910 GSM Radio Network Optimization Training

Training Path



Target Audience

GSM Radio Network Optimization Engineers

Prerequisites

Basic knowledge of mobile communications

At least 1 year working experience in GSM wireless network optimization

Objectives

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

- Describe the function of each kind of logical channel
- Describe the general radio signal process on Um interface
- State the techniques used on Um interface
- Describe typical GSM communication flow
- Perform the operation for interface message trace
- Identify the messages on A interface and Abis interface

- Analysis the messages on A interface and Abis interface
- Explain the important message parameters
- Identify the fault by the method of analyzing the signaling flow
- List the MS behaviors in idle mode
- Describe the parameters associated with MS behaviors in idle mode
- List the types of frequency hopping
- Describe the functions of frequency hopping algorithm
- Describe the parameters of frequency hopping
- Describe the general flow of GSM power control algorithm
- Interpret Huawei power control algorithm II
- Interpret Huawei power control algorithm III
- Describe the other features about power control
- Describe the general flow of GSM handover algorithm
- Interpret Huawei handover algorithm I/II
- Describe the enhanced full rate algorithm
- Describe the half rate algorithm
- Describe the adaptive multiple rate algorithm
- Describe the GSM radio channel allocation algorithm II
- Describe the operations about performance management based on M2000
- Interpret the general analysis procedure of traffic analysis
- Interpret the functions of some typical counters

Duration

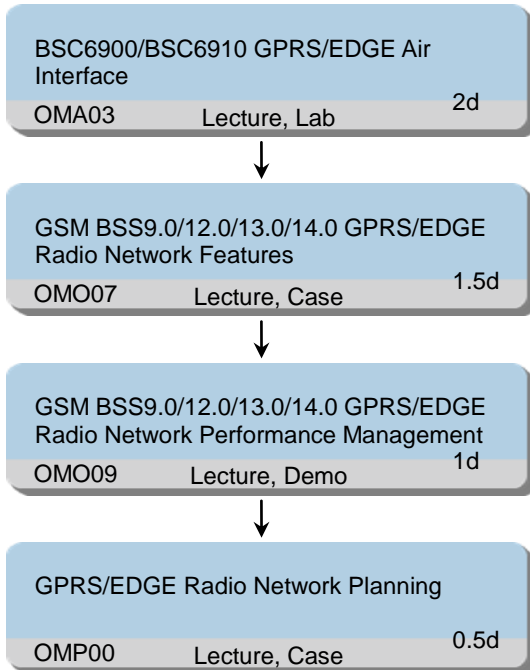
10 working days

Class Size

Min 6, Max 12

2.3.5 GSM BSC6900/BSC6910 GPRS/EDGE Radio Network Planning and Optimization Training

Training Path



Target Audience

GPRS/EDGE Radio Network Planning and Optimization Engineers

Prerequisites

Basic knowledge of mobile communications
At least 1 year working experience in GPRS/EDGE wireless network planning and optimization

Objectives

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

- Outline the GPRS/EDGE network structure and functions of entities in GPRS network
- Describe the GPRS/EDGE frame structure of Um interface
- Describe the function of each kind of logical channel

- Describe the typical application scenarios of different logical channel
- Describe the multiple timeslot ability of GPRS/EDGE MS
- Describe GPRS/EDGE channel setup flow
- Describe GPRS/EDGE channel release flow
- List the typical parameters for GPRS/EDGE radio network optimization
- Interpret the typical parameters for GPRS/EDGE radio network optimization
- Describe GPRS/EDGE power control algorithm
- Describe GPRS/EDGE cell reselection conditions
- Describe the operations about performance management based on M2000
- Interpret the functions of typical counters
- List the typical KPIs
- Interpret the definition and measurement points of typical KPIs
- Describe the work flow of GPRS/EDGE radio network planning
- Implement GPRS/EDGE radio network traffic capacity planning
- Implement GPRS/EDGE radio network coverage planning
- Implement GPRS/EDGE radio network frequency planning
- Describe the influence to the GSM network

Duration

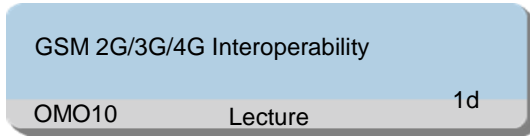
5 working days

Class Size

Min 6, Max 12

2.3.6 GSM to UMTS/LTE Radio Network Interoperability Training

Training Path



Target Audience

GSM Radio Network Optimization Engineers

Prerequisites

Completion of the following program(s):

GSM BSC6000 Radio Network Optimization Training,

OR GSM BSC6900 Radio Network Optimization Training

Objectives

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

- Describe the inter-RAT CS cell reselection conditions
- Describe the inter-RAT PS cell reselection conditions
- Describe the inter-RAT handover algorithm
- Describe the signaling flow of inter-RAT handover

Duration

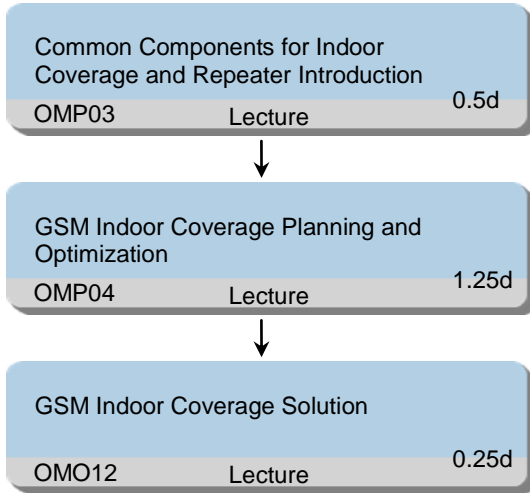
1 working day

Class Size

Min 6, Max 12

2.3.7 GSM Indoor Coverage Training

Training Path



Target Audience

GSM Radio Network Planning Engineers

GSM Radio Network Optimization Engineers

Prerequisites

Basic knowledge of mobile communications

At least 1 year working experience in GSM wireless network optimization

Objectives

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

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

Duration

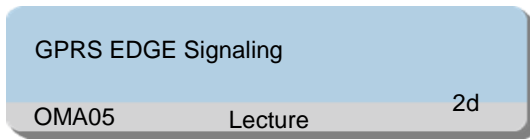
2 working days

Class Size

Min 6, Max 12

2.3.8 GPRS EDGE Signaling Training

Training Path



Target Audience

GPRS/EDGE Radio Network Planning and Optimization Engineers

Prerequisites

Basic knowledge of mobile communications

At least 1 year working experience in GSM wireless network optimization

Objectives

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

- Describe the layer3 of Um interface and relative signalling flows
- Describe the layer2 of Um interface and relative signaling flows
- Describe the layer1 of Um interface and relative signaling flows
- Describe the Gb interface and relative signaling flows
- Describe the Gn/Gp interface and relative signaling flows

Duration

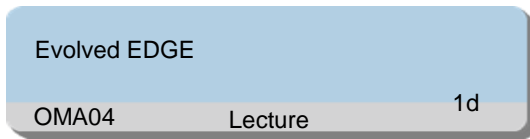
2 working days

Class Size

Min 6, Max 12

2.3.9 Evolved EDGE Training

Training Path



Target Audience

GPRS/EDGE Radio Network Planning and Optimization Engineers

Prerequisites

Basic knowledge of mobile communications
At least 1 year working experience in GSM wireless network optimization

Objectives

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

- Describe the principle of evolved EDGE
- List the feature set
- Describe the EGPRS2 resource allocation and operation

Duration

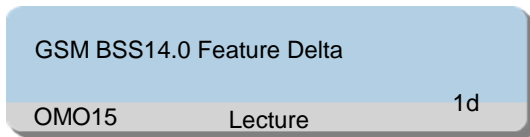
1 working day

Class Size

Min 6, Max 12

2.3.10 GSM BSS14.0 Feature Delta Training

Training Path



Target Audience

GSM Radio Network Optimization Engineers

Prerequisites

Completion of the following program(s):

GSM BSC6000 Radio Network Optimization Training,

OR GSM BSC6900 Radio Network Optimization Training

Objectives

On completion of this program, the participants will

be able to:

- Describe the enhanced part in handover algorithm I
- Describe the enhanced part in handover algorithm II
- Describe the feature of VAMOS
- Describe the feature of PS power control
- Describe the feature of HSCSD
- Describe the feature of smart pipe

Duration

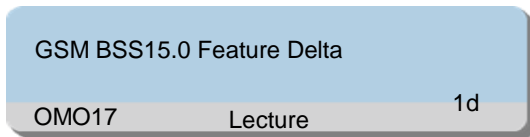
1 working day

Class Size

Min 6, Max 12

2.3.11 GSM BSS15.0 Feature Delta Training

Training Path



Target Audience

GSM Radio Network Optimization Engineers

Prerequisites

Completion of the following program(s):

GSM BSC6000 Radio Network Optimization Training,

OR GSM BSC6900 Radio Network Optimization Training

Objectives

On completion of this program, the participants will

be able to:

- Describe the enhanced part in handover algorithm I
- Describe the enhanced part in handover algorithm II
- Describe the feature of VAMOS
- Describe the feature of PS power control
- Describe the feature of HSCSD
- Describe the feature of smart pipe

Duration

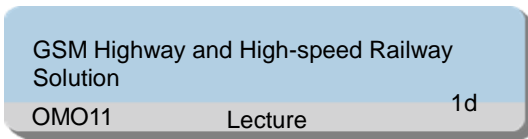
1 working day

Class Size

Min 6, Max 12

2.3.12 GSM Highway and High-speed Railway Solution Training

Training Path



Target Audience

GSM Radio Network Planning Engineers
GSM Radio Network Optimization Engineers

Prerequisites

Completion of the following program(s):
GSM Radio Network Design and Planning Training

Objectives

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

- Describe highway and high-speed railway solution
- Describe the networking strategy of highway and high-speed railway
- Describe the feature and equipment of highway and high-speed railway
- Describe the scenario solutions of highway and high-speed railway
- Describe the optimization method of highway and high-speed railway

Duration

1 working day

Class Size

Min 6, Max 12

2.3.13 GSM Radio Network Analysis Training

Training Path

BSC6900/BSC6910 GSM Radio Network Optimization		
OMO14	Lecture, Case	2d

Target Audience

GSM Radio Network Optimization Engineers

Prerequisites

Completion of the following program(s):

GSM BSC6000 Radio Network Optimization Training,

OR GSM BSC6900 Radio Network Optimization Training

Objectives

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

- Describe the key KPIs of TCH/SDCCH call drop
- Summarize the typical problems of call drop in realistic network
- Analyze the main reasons of call drop
- Describe the key KPIs of handover
- Summarize the typical problems of handover failure in realistic network
- Analyze the main reasons of handover failure
- Study the cases

Duration

2 working days

Class Size

Min 6, Max 12

2.3.14 GPRS/EDGE Radio Network Analysis Training

Training Path

BSC6900/BSC6910 GPRS/EDGE Radio Network Optimization		
OMO16	Lecture, Case	1d

Target Audience

GSM Radio Network Optimization Engineers

Prerequisites

Completion of the following program(s):
GSM BSC6000 GPRS/EDGE Radio Network Optimization Training,
OR GSM BSC6900 GPRS/EDGE Radio Network Optimization Training

Objectives

On completion of this program, the participants will

be able to:

- Describe the general analysis method of TBF setup success rate problem
- Introduce the detailed solution of TBF setup success rate problem
- Describe the general analysis method of download speed problem
- Introduce the detailed solution of download speed problem
- Study the cases

Duration

1 working day

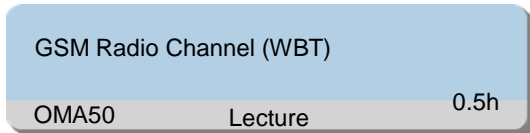
Class Size

Min 6, Max 12

2.4 GSM RNP&RNO WBT Training Programs

2.4.1 GSM Radio Channel(WBT)

Training Path



Target Audience

GSM BSS senior engineers

GSM RNP engineers

GSM RNO engineers

Prerequisites

Having basic knowledge of radio network system

Objectives

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

- Describe the function of each kind of logical channel
- Describe the general radio signal process on

Um interface

- State the techniques used on Um interface
- Describe typical GSM communication flow
- Perform the operation for interface message trace
- Identify the messages on A interface and Abis interface
- Analysis the messages on A interface and Abis interface
- Explain the important message parameters
- Identify the fault by the method of analyzing the signaling flow

Duration

0.5 hour

Class Size

Min 6, Max 12

2.4.2 BSC6900 GSM GPRS EDGE PM System and Counters Overview(WBT)

Training Path

BSC6900 GSM GPRS EDGE PM System
and Counters Overview (WBT)
OMO51 Lecture 1.2h

Target Audience

GSM BSS Engineers
GSM RNP Engineers
GSM RNO Engineers

Prerequisites

Completion of the following course(s):
BSC6900 GSM Air Interface

Objectives

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

- Describe the operations about performance management based on M2000
- Interpret the general analysis procedure of traffic analysis
- Interpret the functions of some typical counters

Duration

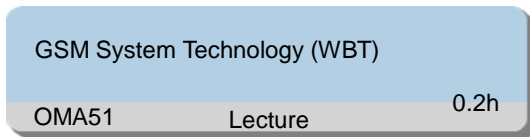
1.2 hour

Class Size

Min 6, Max 12

2.4.3 GSM System Technology(WBT)

Training Path



Target Audience

GSM BSS senior engineers

GSM RNP engineers

GSM RNO engineers

Prerequisites

Having basic knowledge of radio network system

Objectives

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

- Describe the function of each kind of logical channel
- Describe the general radio signal process on

Um interface

- State the techniques used on Um interface
- Describe typical GSM communication flow
- Perform the operation for interface message trace
- Identify the messages on A interface and Abis interface
- Analysis the messages on A interface and Abis interface
- Explain the important message parameters
- Identify the fault by the method of analyzing the signaling flow

Duration

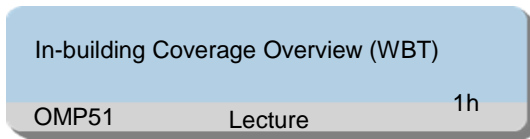
0.2 hour

Class Size

Min 6, Max 12

2.4.4 In-building Coverage Overview(WBT)

Training Path



Target Audience

GSM BSS Engineers
GSM RNP Engineers
GSM RNO Engineers

Prerequisites

Completion of the following course(s):
GSM Radio Network Planning

Objectives

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

- Implement GSM radio network coverage planning
- Explain the link budget model and its application
- Explain the advance technology for improving coverage

Duration

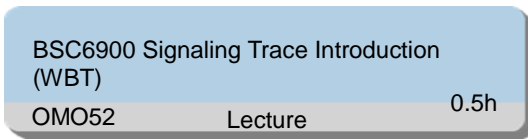
1 hour

Class Size

Min 6, Max 12

2.4.5 BSC6900 Signaling Trace Introduction(WBT)

Training Path



Target Audience

GSM BSS senior engineers

GSM RNO engineers

Prerequisites

Having basic knowledge of radio network system

Objectives

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

- Describe the layer3 of Um interface and

relative signalling flows

- Describe the layer2 of Um interface and relative signaling flows
- Describe the layer1 of Um interface and relative signaling flows
- Describe the Gb interface and relative signaling flows
- Describe the Gn/Gp interface and relative signaling flows

Duration

0.5 hour

Class Size

Min 6, Max 12