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1.1 Training Course Descriptions

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<th>Duration (working days)</th>
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<td>6 ~ 12</td>
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<tr>
<td>OSC03</td>
<td>C&amp;C08 Switch Data Configuration</td>
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1.2 C&C08 Training Course Descriptions

1.2.1 OSC01 C&C08 Switch System Overview

Objectives

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

- Explain the basic principle and structure of the C&C08 Switch system.
- Outline the performance of C&C08 Switch system.

Target Audience

NMS operator, Technical support engineer

Prerequisites

- A basic understanding of telecommunication

Content

- The overall knowledge of system structure, service configuration and system performance.

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12
1.2.2 OSC02 C&C08 Switch Hardware System

Objectives

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

- Describe the system structure at module, frame and board level and the performance features of C&C08.
- Identify the hierarchy and network architecture of AM/CM.
- Explain the system resource allocation, the control architecture and the communication process of SM.
- Identify the general hardware structure of C&C08.

Target Audience

Technical support engineer

Prerequisites

- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field
- Completion of OSC01 C&C08 Switch System Overview course

Content

- The overall architecture of Switch Module.
- Frame and board description of Switch Module.
- The functional structure, control structure, network structure and system resource allocation of Switch Module.
- Various modules composing the Central Module.
- Frame and board description of Central Module.
- Hardware architecture and functions of each functional module.
- C&C08 terminal system architecture.
- The hardware and software platform of BAM and WS.
- The hardware structure of alarm system.
- The general knowledge about internal cable/wire distribution of AMCM.
- Introduction of internal fiber, HDLC and HW connection.

Training Methods

Lectures, Hands-on exercise

Duration

3.5 working days

Class Size

Min 6, max 12
1.2.3 OSC03 C&C08 Switch Data Configuration

Objectives

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

- Set and maintain the office data.
- Set and maintain the user data.
- Set and maintain the trunk data.
- Set and maintain the charging data.

Target Audience

Technical support engineer

Prerequisites

- Being familiar with computer operation
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field
- Completion of OSC01 C&C08 Switch System Overview course and OSC02 C&C08 Switch Hardware System course

Content

- Configure the hardware data of AM/CM and SM.
- Related concepts introduction of user data.
- Configure the primary subscriber data.
- PBX service introduction.
- Configure the PBX data.
- Centrex service introduction.
- Configure the Centrex data.
- The concept, function and hierarchy introduction of CCS7.
- MTP function detailed description.
- Basic signaling procedure of CCS7.
- SPM hardware and service introduction.
- Configure SPM data.
- Configure CCS7 trunk data.
- Configure CCS7 link data.
- The concept and application of PRA.
- Configure PRA data.
- Charging system working principle.
- Charging data setting.

Training Methods

Lectures, Hands-on exercise

Duration

8 working days

Class Size

Min 6, max 12
1.2.4 OSC04 C&C08 System Maintenance

Objectives

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

- Use the common tools in the maintain subsystem.
- Perform the routine operations in the bill management subsystem.
- Perform the routine operations in the traffic statistics subsystem.
- Perform the routine maintenance tasks.

Target Audience

Technical support engineer

Prerequisites

- Being familiar with computer operation
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field
- Completion of OSC01 C&C08 Switch System Overview course, OSC02 C&C08 Switch Hardware System course and OSC03 C&C08 Switch Data Configuration course

Content

- Bill ticket management.
- Browse the bill information in bill pool and BAM.
- Fetch the bill ticket from host to BAM.
- The caller number discrimination principle and application.
- The inter-group call restriction principle and application.
- Configure the special call barring group - Black list and White list.
- The outgoing call barring service.
- Describe the concept, function and structure of test system.
- Perform instant test and routine test.
- Discuss the traffic statistics result and test result application.
- Describe the concept, function and structure of traffic statistics.
- Manage traffic statistics tasks.
- The routine operation and maintenance.

Training Methods

Lectures, Hands-on exercise

Duration

5 working days

Class Size

Min 6, max 12
1.2.5 OSC05 C&C08 Switch Troubleshooting

Objectives

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

- Perform the troubleshooting for minor faults.
- Explain the alarm subsystem and perform the routine operation.
- Perform the various tests and analyze the test results.

Target Audience

Technical support engineer

Prerequisites

- Being familiar with computer operation
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field
- Completion of OSC01 C&C08 Switch System

Content

- The troubleshooting method for minor faults.
- The alarm subsystem and the routine operation.
- The various tests and analyze the test results.

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12
1.2.6  OSD01 C&C08 Switch In-depth Introduction

Objectives

On completion of this course, the participants will be able to:
- Describe the knowledge of Windows NT and SQL Server.
- Describe the loading procedure of C&C08 hardware system.
- Describe the principle of C&C08 clock system.
- Describe the principle of C&C08 charging system.

Target Audience

Specialist

Prerequisites

- Completion of C&C08 Operation and Maintenance Training
- Being familiar with computer operation
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field

Content

- The overall architecture of C&C08 switching system.
- AM/CM hardware architecture.
- Signal flow in the central module.
- SM hardware architecture.
- Signal flow in the switching module.
- Structure of the clock system, communications control system, voice channel and signaling system.
- Concept of program and data loading of C&C08.
- Loading procedures of the key boards of AM/CM and SM.
- In-depth introduction of terminal system platform including operation system and database.
- BAM server and SQL server installation demonstration.

Training Methods

Lectures, Hands-on exercise

Duration

3 working days

Class Size

Min 6, max 12
1.2.7 OSD02 C&C08 Switch Advanced Maintenance

Objectives

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

- Perform the whole system hardware configuration.
- Perform the whole system software installation.
- Perform the advanced data setting such as number change, call failure process and auxiliary signaling.
- Describe the principle of software parameter.

Target Audience

Specialist

Prerequisites

- Completion of C&C08 Operation and Maintenance Training
- Being familiar with computer operation
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field

Content

- Introduce some advanced data setting such as number change, auxiliary signaling, trunk bearer, call failure process.
- Introduce software parameter function and application.
- Charging and billing system advanced maintenance.
- Advanced charging data setting.
- Charging security management.
- CRG charging introduction.
- The rules of C&C08 project data setting.
- The general suggestions of C&C08 network structure and module configuration.

Training Methods

Lectures, Hands-on exercise

Duration

7 working days

Class Size

Min 6, max 12
1.2.8  OSD03 C&C08 Switch Advanced Troubleshooting

Objectives

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

- State the general procedures and methods of troubleshooting.
- Describe the alarm information and use the maintenance tool for troubleshooting.
- Perform troubleshooting for various faults.

Target Audience

Specialist

Prerequisites

- Completion of C&C08 Operation and Maintenance Training
- Completion of OSD01 C&C08 Switch In-depth Introduction course and OSD02 C&C08 Switch Advanced Maintenance course
- Being familiar with computer operation
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field

Content

- The emergency recovery operation after making mistake of important operation.
- The important operation and commands usually used in C&C08.

Training Methods

- Lectures, Hands-on exercise

Duration

- 2 working days

Class Size

- Min 6, max 12
1.2.9 OSD04 C&C08 Switch Introduction to Special Subject

Objectives

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

- Describe the detailed call process of C&C08 switch.
- Describe the principle of trunk line hunting.
- Describe the MTP and ISUP principle.

Target Audience

Specialist

Prerequisites

- Completion of C&C08 Operation and Maintenance Training
- Being familiar with computer operation
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field

Content

- MTP protocol principle and function detailed introduction.
- SS7 signaling link management.
- MTP message tracing and process instruction.
- ISUP protocol, message and parameter introduction.
- ISUP call setup process.
- ISUP message tracing concept and process instruction.
- The special introduction of route, sub-route, trunk group, trunk circuit and the relations among them.
- The selection principle and methods of route, sub-route, trunk group and trunk circuit.

Training Methods

- Lectures, Hands-on exercise

Duration

- 2.5 working days

Class Size

- Min 6, max 12
1.2.10 OSD05 C&C08 Switch Network Planning

Objectives

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

- Describe the planning and configuration principle of C&C08 switch.
- Describe the network management principle of C&C08 switch.
- Perform the basic design of C&C08 switch according to requirements.

Target Audience

Specialist

Prerequisites

- Completion of C&C08 Operation and Maintenance Training
- A basic understanding of telecommunication
- At least one year experience in operation and maintenance of PSTN field

Content

- Main procedures of Telecom Network design.
- C&C08 application in Telecom Network Design.

Training Methods

Lectures

Duration

0.5 working day

Class Size

Min 6, max 12
1.2.11 OSP01 Basic Knowledge of Intelligent Network

Objectives

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

- Describe the basic knowledge of SS7 signaling system.
- Describe the basic knowledge of SCCP, TCAP and INAP protocol.
- State the application of SS7 in the IN system.

Target Audience

C&C08 SSP technical support engineer

Prerequisites

- At least one year experience in operation and maintenance of PSTN field
- A basic understanding of telecommunication

Content

- The architecture, component and conceptual model of IN.
- TELLIN system networking, charging and application.
- The concept, function and hierarchy introduction of CCS7.
- MTP function detailed description.
- Signaling units explanation.
- Basic signaling procedure of CCS7.
- Features and functions introduction of SCCP.
- Description of addressing and routing functions of SCCP.
- Introduction of SCCP message format.
- Features and functions introduction of TCAP.
- Introduction of TCAP message format.
- Introduction of INAP operations.
- INAP information flow.

Training Methods

Lectures, Hands-on exercise

Duration

3 working days

Class Size

Min 6, max 12
1.2.12 OSP02 C&C08-SSP Hardware System

Objectives

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

- Describe the basic architecture of C&C08 SSP hardware.
- Describe the hierarchy and network architecture of AM/CM.
- Describe the system resource allocation, the control architecture and the communication process of SM.
- Identify the general hardware structure of C&C08 SSP.

Target Audience

C&C08 SSP technical support engineer

Prerequisites

- At least one year experience in operation and maintenance of PSTN field
- A basic understanding of telecommunication

Content

- Various modules composing the Central Module.
- Frame and board description of Central Module.
- Hardware architecture and functions of each functional module.
- The general knowledge about internal cable/wire distribution of AMCM.
- Introduction of internal fiber, HDLC and HW connection.
- SPM hardware and service introduction.
- Configure SPM data.

Training Methods

Lectures

Duration

2 working days

Class Size

Min 6, max 12
1.2.13 OSP03 C&C08-SSP Operation and Maintenance

Objectives

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

● Describe the basic architecture of C&C08 SSP hardware.
● Describe the hierarchy and network architecture of AM/CM.
● Describe the system resource allocation, the control architecture and the communication process of SM.
● Identify the general hardware structure of C&C08 SSP.

Target Audience

C&C08 SSP technical support engineer

Prerequisites

● At least one year experience in operation and maintenance of PSTN field

Being familiar with computer operation
● A basic understanding of telecommunication

Content

● Configure CCS7 trunk data.
● Configure CCS7 link data.
● Intelligent service data configuration method, procedure and maintenance.
● Description of PCS service feature, numbering format and call flow.

Training Methods

Lectures, Hands-on exercise

Duration

4 working days

Class Size

Min 6, max 12
1.2.14 OSP04 C&C08-SSP Troubleshooting

Objectives

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

- Analyze the general malfunction of the C&C08-SSP system.
- Perform the troubleshooting of the C&C08-SSP system.
- Describe troubleshooting flow of the C&C08-SSP.

Target Audience

C&C08 SSP technical support engineer

Prerequisites

- Completion of OSP01 Basic Knowledge of Intelligent Network course, OSP02 C&C08-SSP Hardware System course and OSP03 C&C08-SSP Operation and Maintenance course
- At least one year experience in operation and maintenance of PSTN field
- Being familiar with computer operation
- A basic understanding of telecommunication

Content

- Troubleshooting flow of the C&C08-SSP.
- The general malfunction of the C&C08-SSP system.

Training Methods

Lectures, Hands-on exercise

Duration

1 working day

Class Size

Min 6, max 12