

Training Proposal for C & C08 Project



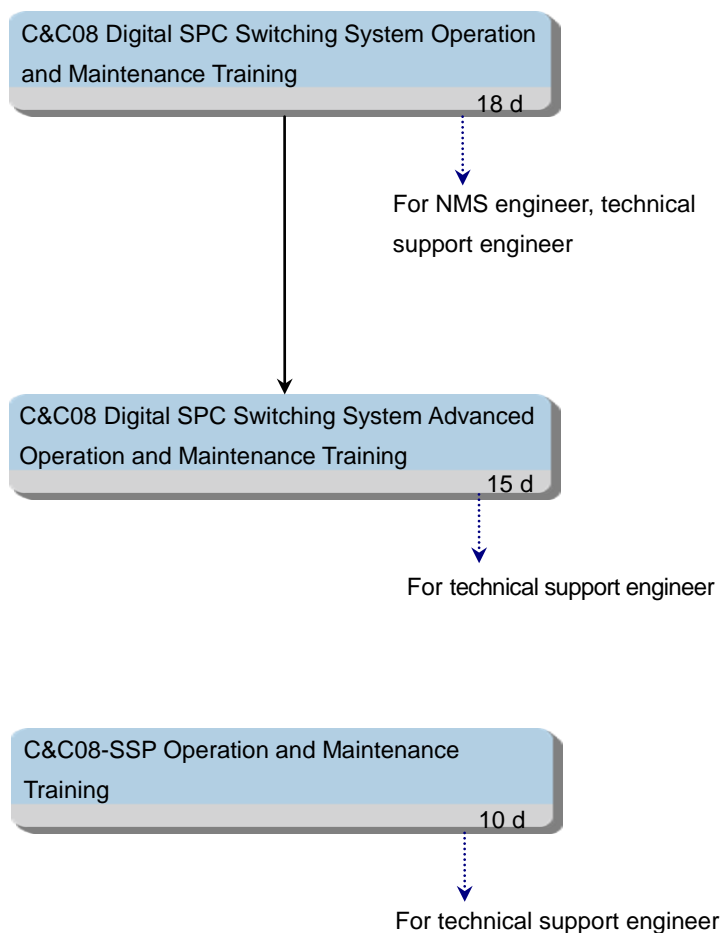
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1 Training Solution

1.1 Background Introduction

1.2 C&C08 Training Path



-  For Target
-  Training Upgrade

1.3 Required Training Programs

C&C08 For this project, the whole training solution is designed into the following programs. List of Training Program(s) for C&C08 Project:

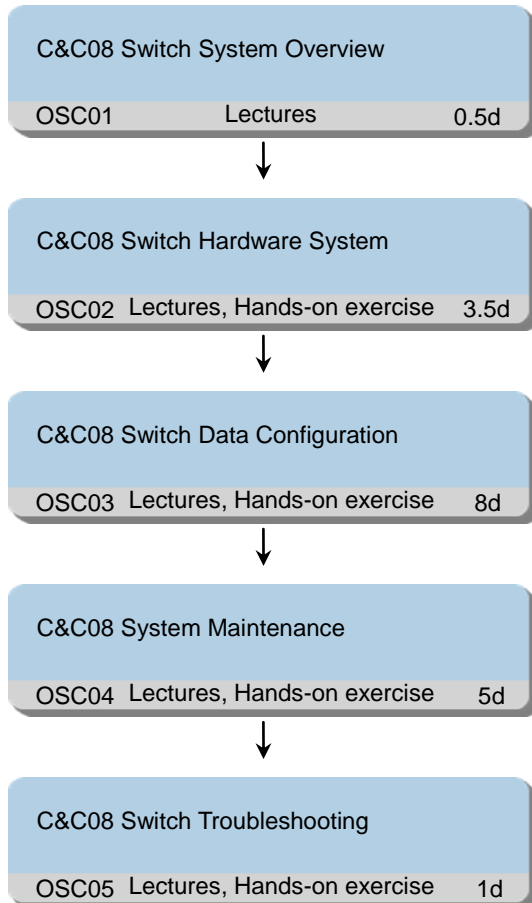
Class Type	Program Level	Duration (workdays)	Training Location	Class Size	Training Location
C&C08 Digital SPC Switching System Operation and Maintenance Training	II	18	N/A	6 ~ 12	
C&C08 Digital SPC Switching System Advanced Operation and Maintenance Training	III	15	N/A	6 ~ 12	
C&C08-SSP Operation and Maintenance Training	II	10	N/A	6 ~ 12	

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

1.4 Training Programs Description

1.4.1 C&C08 Digital SPC Switching System Operation and Maintenance Training

Training Path



Target Audience

NMS operator, Technical support engineer
Technical support engineer

Prerequisites

- Being familiar with Windows operating system
- Having the basic knowledge of telecommunication
- At least one year of experience in the operation or maintenance of SPC switch

Objectives

On completion of this program, 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.
- Perform the troubleshooting for minor faults.
- Explain the alarm subsystem and perform the routine operation.

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- Perform the various tests and analyze the test results.
 - 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.
 - Set and maintain the office data.
 - Set and maintain the user data.
 - Set and maintain the trunk data.
 - Set and maintain the charging data.
 - 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.

Training Content

OSC01 C&C08 Switch System Overview

- System Overview (C&C08)
 - The overall knowledge of system structure, service configuration and system performance.

OSC02 C&C08 Switch Hardware System

- SM (C&C08)
 - 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.
- Central Module (C&C08)
 - Various modules composing the Central Module.
 - Frame and board description of Central Module.
 - Hardware architecture and functions of each functional module.
- Terminal system (C&C08)
 - C&C08 terminal system architecture.
 - The hardware and software platform of BAM and WS.
- Alarm system (C&C08)
 - The hardware structure of alarm system.
- Wire Distribution (C&C08)
 - The general knowledge about internal cable/wire distribution of AMCM.
 - Introduction of internal fiber, HDLC and HW connection.

OSC03 C&C08 Switch Data Configuration

- Configuration data (C&C08)
 - Configure the hardware data of AM/CM and SM.

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- Primary User Data (C&C08)
 - Related concepts introduction of user data.
 - Configure the primary subscriber data.
 - PBX Line Hunting (C&C08)
 - PBX service introduction.
 - Configure the PBX data.
 - CENTREX (C&C08)
 - Centrex service introduction.
 - Configure the Centrex data.
 - Signaling System 7 (C&C08)
 - The concept, function and hierarchy introduction of CCS7.
 - MTP function detailed description.
 - Basic signaling procedure of CCS7.
 - SPM Data (C&C08)
 - SPM hardware and service introduction.
 - Configure SPM data.
 - Trunk Data (C&C08)
 - Configure CCS7 trunk data.
 - Configure CCS7 link data.
 - PRA Data (C&C08)
 - The concept and application of PRA.
 - Configure PRA data.
 - Charging Data (C&C08)
 - Charging system working principle.
 - Charging data setting.

OSC04 C&C08 System Maintenance

- Bill Management (C&C08)
 - Bill ticket management.
 - Browse the bill information in bill pool and BAM.
 - Fetch the bill ticket from host to BAM.
- Call Restriction Data (C&C08)
 - 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.
- Test Subsystem (C&C08)
 - Describe the concept, function and structure of test system.
 - Perform instant test and routine test.
 - Discuss the traffic statistics result and test result application.
- Traffic Statistics (C&C08)
 - Describe the concept, function and structure of traffic statistics.
 - Manage traffic statistics tasks.

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- Maintain Subsystem (C&C08)
 - The routine operation and maintenance.

OSC05 C&C08 Switch Troubleshooting

- C&C08 Switch Troubleshooting (C&C08)
 - The troubleshooting method for minor faults.
 - The alarm subsystem and the routine operation.
 - The various tests and analyze the test results.

Duration

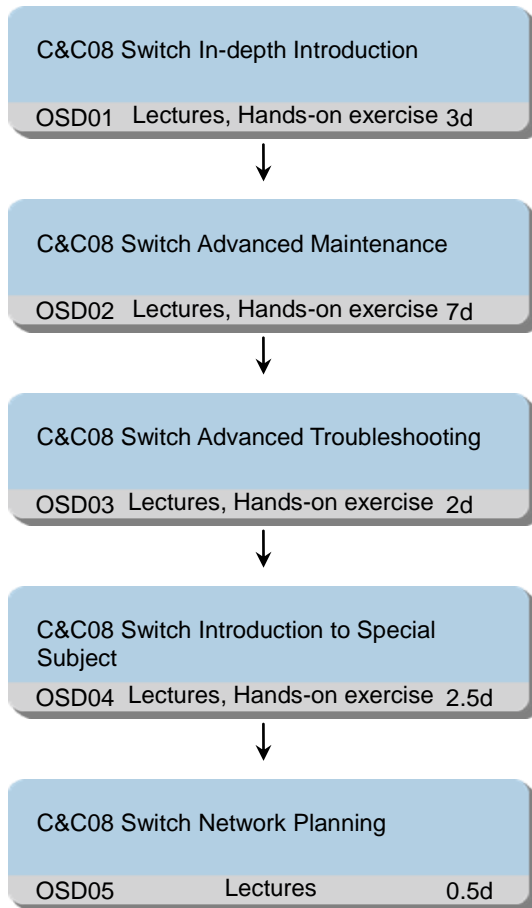
18 working days

Class Size

Min 6, Max 12

1.4.2 C&C08 Digital SPC Switching System Advanced Operation and Maintenance Training

Training Path



Target Audience

Specialist

Prerequisites

- Having completed the C&C08 Digital SPC Switching System Operation and Maintenance Training
- At least one year of experience in the operation or maintenance of SPC switch
- Being familiar with Windows operating system
- Being familiar with the basic knowledge of telecommunication

Objectives

On completion of this program, 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.
- Describe the detailed call process of C&C08 switch.

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- Describe the principle of trunk line hunting.
 - Describe the MTP and ISUP principle.
 - State the general procedures and methods of troubleshooting.
 - Describe the alarm information and use the maintenance tool for troubleshooting.
 - Perform troubleshooting for various faults.
 - 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.
 - 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.

Training Content

OSD01 C&C08 Switch In-depth Introduction

- System Introduction (C&C08)
 - 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.
- Hardware System Structure (C&C08)
 - 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.
- Terminal System Installation (C&C08)
 - In-depth introduction of terminal system platform including operation system and database.
 - BAM server and SQL server installation demonstration.

OSD02 C&C08 Switch Advanced Maintenance

- Advanced Data Setting (C&C08)
 - Introduce some advanced data setting such as number change, auxiliary signaling, trunk bearer, call failure process.
- Software Parameter (C&C08)
 - Introduce software parameter function and application.
- Charging Data Setting Improvement (C&C08)
 - Charging and billing system advanced maintenance.
 - Advanced charging data setting.
 - Charging security management.

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- CRG charging introduction.
 - C&C08 Data Setting Planning (C&C08)
 - The rules of C&C08 project data setting.
 - The general suggestions of C&C08 network structure and module configuration.

OSD03 C&C08 Switch Advanced Troubleshooting

- Trouble Shooting (C&C08)
 - The emergency recovery operation after making mistake of important operation.
- Important Operation Guide (C&C08)
 - The important operation and commands usually used in C&C08.

OSD04 C&C08 Switch Introduction to Special Subject

- MTP (C&C08)
 - MTP protocol principle and function detailed introduction.
 - SS7 signaling link management.
 - MTP message tracing and process instruction.
- ISUP (C&C08)
 - ISUP protocol, message and parameter introduction.
 - ISUP call setup process.
 - ISUP message tracing concept and process instruction.
- Network Management Overview (C&C08)
 - 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.

OSD05 C&C08 Switch Network Planning

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

Duration

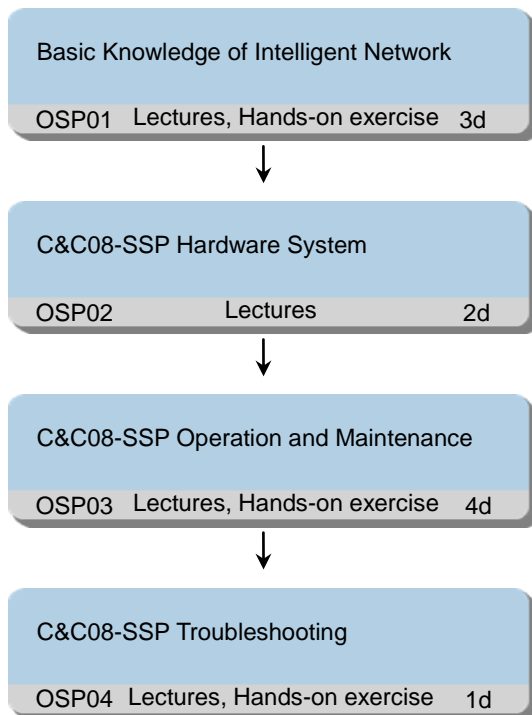
15 working days

Class Size

Min 6, Max 12

1.4.3 C&C08-SSP Operation and Maintenance Training

Training Path



Target Audience

C&C08 SSP technical support engineer

Prerequisites

- At least one year of experience in the operation or maintenance of SPC switch
- Being familiar with computer operation and Windows operating system
- Being familiar with the basic knowledge of telecommunication

Objectives

On completion of this program, 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.
- 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.
- 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.
- 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.

Training Content

OSP01 Basic Knowledge of Intelligent Network

- Intelligent Network Principle and System (C&C08)
 - The architecture, component and conceptual model of IN.
 - TELLIN system networking, charging and application.
- MTP (SSP)
 - The concept, function and hierarchy introduction of CCS7.
 - MTP function detailed description.
 - Signaling units explanation.
 - Basic signaling procedure of CCS7.
- SCCP (SSP)
 - Features and functions introduction of SCCP.
 - Description of addressing and routing functions of SCCP.
 - Introduction of SCCP message format.
- TCAP (SSP)
 - Features and functions introduction of TCAP.
 - Introduction of TCAP message format.
- INAP (SSP)
 - Introduction of INAP operations.
 - INAP information flow.

OSP02 C&C08-SSP Hardware System

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

OSP03 C&C08-SSP Operation and Maintenance

- Trunk Data (SSP)
 - Configure CCS7 trunk data.
 - Configure CCS7 link data.
- Intelligent Service Data (SSP)

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- Intelligent service data configuration method, procedure and maintenance.
 - PCS (SSP)
 - Description of PCS service feature, numbering format and call flow.

OSP04 C&C08-SSP Troubleshooting

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

Duration

10 working days

Class Size

Min 6, Max 12

