Hands-On

EWSD Nokia (Siemens) Virtual Switch Maintenance and Troubleshooting

On-Site or Virtual Live Instructor-led

Course Description

The Nokia (formerly Siemens) EWSD Switching Support Course was created to help telco personnel continue to support the EWSD switching system with less reliance on vendor support options.

Intended as a follow-up to the EWSD Maintenance and Operations course, the support course will move personnel with a good working knowledge of the EWSD to the next level, providing them with both the knowledge and confidence to work on important parts of the switch for which they are less familiar. The course begins with a review of the system topology, ensuring a consistent understanding of the different LTG and DLU types, and remotes. The discussion then turns to the front end, with detailed descriptions of the Coordination Processors IOP Groups, its various processors, Common and Local Memory, plus various interfaces including X.25, serial, SCSI, etc. Significant detail is placed on the different SN network types, including DE3/4/5, and their various Time/Space stage sub-configurations. An emphasis is placed upon the configuration for the local switch system that students work on.

DISP and SRCHALARM commands, plus MMN, FLM and Mask information within the system output messages, are all used to locate as much information about a fault as possible. A large number of past examples are used as practice, but any actual faults in the switch will also be analyzed carefully for the best course of troubleshooting. Predictions are made for the card modules that are most suspect. These results are then compared to the actual fixes performed from the past examples, and also to current maintenance-window diagnostic results, if applicable. Module replacement precautions and procedures are discussed in detail, including communication between COT personnel and the NOC/SCC or other Tier-3 support.

Books such as the Exchange Configuration Document (ECD) and Cable Laying List (CLL) will be consulted to see how to find suspect cables and their part numbers, including their exact location on the backplane.

Our non-intrusive exercises equip the student to apply troubleshooting techniques for challenging faults, and then determine suspect module lists, including cables. The course is flexible, allowing the most important content for a particular group of students to be emphasized.

Students Will Learn

- **Detailed System Overview of all primary modules and peripherals**
- **MML commands including both routine and specialized options**
- **How to debug the system with various output messages like MMN & FLN**
- **Understand troubleshooting docs like TAPs and TLMs**
- **Use Cable Laying List documents to understand module interconnections**
- **Review all alarm categories on the SYPD, and use SRCHALARM**
- **Understanding LTG & DLU troubleshooting and loading**
- **Locating modules on the front or backplanes**
- **Troubleshooting on central control equipment like the CP, SN, CCNC and CCG**
- **Understand Recovery levels and use of the EAI**
- **And much more...**

Target Audience

Technical staff such as NOC/SCC personnel, plus certain Central Office Technicians and management will find the course very useful in responding to multiple types of switch alarms. Those seeking cross- training or system interoperability can also benefit from the course.

Prerequisites

The course is an accelerated version of a traditional support course. Students are recommended to have previously taken the EWSD Maintenance & Troubleshooting course, or have a good working background of the EWSD switch and its MML commands.

Course Outline

Module 1 : EWSD System Overview
- System Hardware Components:
CP incl. various IOPs, MB, MDD/MOD, etc.
CCNC incl. SS7
SN incl. DE3/4/5 types
Time & Space Stages
LTG incl. LTGC, LTGK, LTGO
DIU Types
DLU incl. different DLU semi-shelf types
RCU, SmartRemote
DCO OneUp Option
SLC-96
GR-303 Interfaces
IPH & ISDN options
- TDM and PCM Review
- Functional Block Diagram (Tier 2)

- Call Processing Example

Module 2 : BMML & IO
- SmartCommander, OMT, EAI, SYPD
- Common MML Commands - CONF, DISP, STAT, LIST, etc.
- SRCHALARM, DISPINDIC
- DIAG vs. TEST
- System Output Messages:
MMN
FLN
Mask
Register Data
Module Listings
- CR & CANC Overview
- Review

Module 3 : System Message Analysis
- Electronic Document Delivery System (EDDS)
- MMN Decoding
- FLN Decoding
- MMN/FLN Examples
- Hexadecimal, Decimal, and Binary
- Register Decoding
- Register Examples
- Diagnostic Response Messages
- System Reports
- Exercises

Module 4 : General Hardware
- Documentation Types:
EDDS - .chm, Corrective Maintenance Practices: TLM, TAP, DLP
Book 0905 - Exchange Configuration Documents (ECD)
Cable Running/Laying List (CRL/CLL)
Book 1088 - Maintenance Summary Guide
Book 0825 - Installation and Acceptance
Job Engineering Docs
- Siemens Packaging - SIPAC, SIVAPAC incl. backplane pinouts
- Determining Suspect Modules
- Locating Modules - Bay, Frame, MUT, MOLOC
- Changing Modules:
NOC-CO Interaction
Verify the Fault
Precautions, ESD, VCC
OST States
Test & Contingency Plans
Module Extraction/Seating
Verify the Repair
Clearing Alarms
- Module Practice Exercises
- Examples
- Review

Module 5 : Line Trunk Group (LTG) & Digital Line Unit (DLU)
- LTG/DLU Types: Which Do You Have?
LTGC/LTGK/LTGO
DLUA/DLUB incl. Shelf Types - DLU(x)
Group Switch Versions
DIU vs. LDIE
Speech Highways & CAS
SDCK interfaces
- Procedures:

Delivery Method

LIVE Virtual Instructor-led with a flexible approach that adjusts content most relevant to students. Includes various non-intrusive labs, demonstrations, and exercises to help students focus on and retain the material presented.

Equipment Requirements

(This apply's to our hands-on courses only)

Students must have Virtual and or remote access to a EWSD Switch for this training.

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

Course Length

5 Days