Hands-On
5ESS Switch Recent Change/Translations/Routing

BTS
Real-World Experience

Course Description

This extensive Hands-On 5ESS Switch Recent Change, Translations and Routing course starts by presenting a brief overview of the 5ESS Switch structure and basic Recent Change navigation. This is followed with lessons on Intra-Office Call flow and Inter-Office Call Flow. These lessons include Call Processing Flow Charts based on the supporting Recent Change Views. Next, the course addresses Inter Exchange Carrier and Intra Exchange Carrier Call Flow. These lessons include 5ESS Forms and Recent Change Views supporting Feature Group B and D Equal Access translations. This is followed with a lesson addressing the translations for Direct Inward Dial trunking arrangements to Private Branch Exchanges (PBXs) and Internet Providers.

Included in this course is lesson material addressing Local Number Portability (LNP) and the Recent Change Views that support LNP. The last part of this course presents the Recent Change Views involved with the Charging and Billing of calls, including an AMA Trace example. All these lessons reference Alcatel-Lucents DynaText 5ESS Switch documentation.

The objective of this course, 5ESS Switch Recent Change, Translations and Routing, is to train provisioning and maintenance personnel to insert, update and verify Call Routing, Billing and Trunk Recent Change Views.

Students Will Learn

- **Identify Call Routing Recent Change Views**
- **State the Major Function of each Call Routing Recent Change View**
- **Identify Key, Required and Pertinent Fields on Call Routing and Trunk Recent Change Views**
- **Correctly Populate Call Routing and Trunk Recent Change Views**
- **Trace the Routing of a Call through Recent Change Views**
- **Perform and Interpret Verify Office (VFYOFC) Messages**
- **Perform Local Number Portability Queries and Interpret the Results**
- **Perform and Interpret AMA Trace Verifications**
- **And more...**

Prerequisites

This course builds on the knowledge gained from basic and introductory 5ESS Switch courses. The 5ESS Switch knowledge required as a prerequisite for this course consists of

-Basic knowledge of the 5ESS Switch Administrative Module, Communication Module and Switching Module

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-Basic Computer Navigational and/or 5ESS Switch Recent Change Navigational skills
-Basic 5ESS Display Terminal Navigational skills (Poke Commands and Input Messages)
-The ability to use 5ESS Switch DynaText documentation

Course Outline

Lesson 1 - Overview of the 5ESS Switch and Recent Change
This Overview of the 5ESS Switch and Recent Change presents a brief review of the physical and functional structure of the 5ESS Switch. This is followed with basic Recent Change access and Recent Change View navigation.

Lesson 2 Intra Office Call Flow and Recent Change Views
The Intra Office Call Flow and Recent Change Views lesson presents the 5ESS Switch Intra Office Call Processing functions and the Recent Change Views used to route the call. This lesson establishes the initial line side call origination flow along with the Recent Change Views and fields that support it. The lesson includes 7 digit versus 10 digit dialing scenarios, call routing for dialing errors, NPA / Office Code versus Route Index, Normalized Office Code and the function of Routing Switching Modules. Comprehensive Call Flowcharts presenting the Recent Change Views involved are included in this lesson. The lesson references Alcatel-Lucents 5ESS Dyna Text support documentation. The primary Recent Change Views presented in this lesson include:

RCV 1.6, **1.8**, **23.2** and **23.8** Analog Line and Digital Subscriber Line

RCV 4.1 Line Class Code

RCV 9.1 Digit Analysis Selector

RCV 9.4 Code Conversion

RCV 9.2 Prefix/Feature Digit

RCV 9.3 Local Digit

RCV 9.9 Remaining Digit

RCV 10.10 Screening

RCV 10.11 Charge Index Expansion

RCV 8.2 Normalized Office Codes

RCV 4.14 Hundreds Group Assignment

Lesson 3 Inter Office Call Flow and Recent Change Views

The Inter Office Call Flow and Recent Change Views lesson presents the 5ESS Switch Inter Office Call Processing functions and the Recent Change Views that route the call. This lesson introduces the Local Access and Transport Area (LATA) and the routing of calls over Trunk Groups. The lesson also presents trunk side originations (Incoming Calls) along with the Recent Change Views and fields that are used to process the call. The lesson presents NPA/NXX code interpretation, Code Conflict resolution, the deletion and prefixing of digits, data routes and route advancing. This lesson also presents the Office Dialing Plan Best Fit Search and Alternate Route Index Recent Change Verify views. Comprehensive Call Flowcharts presenting the Recent Change Views involved are included in this lesson. The lesson includes references to Alcatel-Lucents 5ESS Dyna Text support documentation. Additional Recent Change Views presented in this lesson include:

RCV 9.24 Office Dialing Plan Best Fit Search

RCV 10.2 Route Index

RCV 10.25 Alternate Route Indexes

RCV 5.1 Trunk Group

RCV 5.5 Trunk Member

RCV 9.5 Incoming Trunk Digits

RCV 5.3 Transmission Class

RCV 14.1 Automatic Trunk Test Table

Lesson 4 Inter Exchange Carrier Call Flow and Recent Change Views

This Inter Exchange Carrier Call Flow and Recent Change Views lesson presents the 5ESS Switch Inter LATA Carrier, Equal Access, Feature Group D and B carrier selection process. This presentation includes the Recent Change Views that perform the carrier selection and the Recent Change Views that route the call. Carrier Access Codes (CAC) and Carrier Identification Codes (CIC) are defined along with the Presubscribed Inter-LATA Carrier (PIC) assignments. The lesson presents the different carrier services available on the Carrier Administration (ICF) Recent Change View. It also presents the Carrier Destination Mapping (CDIM) Recent Change View which is used in situations where the Carrier Administration Recent Change View is not explicit enough to correctly route calls to the carrier. Comprehensive Call Flowcharts presenting the Recent Change Views involved are included in this lesson. The lesson contains references to Alcatel-Lucents 5ESS Dyna Text support documentation. Additional Recent Change Views presented in this lesson consist of:

RCV 10.3 Carrier Administration (Interconnect Carrier Form ICF)

RCV 9.7 Carrier Destination Mapping

Lesson 5 Intra Exchange Carrier Call Flow and Recent Change Views

The Intra Exchange Carrier Call Flow and Recent Change Views lesson presents the 5ESS Switch Intra LATA Toll Carrier, Equal Access, Feature Group D carrier selection process. This presentation includes the Recent Change Views that perform the Intra LATA Toll carrier selection and the Recent Change Views that route the call. The Intra LATA Carrier Access Codes (CAC) and Carrier Identification Codes (CIC) are defined along with the Presubscribed Intra-LATA Carrier (PTC) assignments. The lesson addresses the Intra LATA carrier selection and services available on the Carrier Administration (ICF) Recent Change View along with the carrier selection on the Carrier Destination Mapping (CDIM) Recent Change View. The lesson includes references to Alcatel-Lucents 5ESS Dyna Text support documentation. This lesson presents the call routing Recent Change Views and the following Intra LATA selection Recent Change Views:

RCV 10.3 Carrier Administration (Interconnect Carrier Form ICF)

RCV 9.7 Carrier Destination Mapping

Lesson 6 Direct Inward Dial / Direct Outward Dial Call Flow and Recent Change Views

This lesson presents Direct Inward Dial (DID) and Direct Outward Dial (DOD) call flow as controlled through 5ESS Switch translations. The lesson initially describes the Recent Change flow of Direct Inward Dial calls. These are calls routed to customer locations such as Private Branch Exchanges (PBXs) and Routers at Internet Providers. The calls are routed over DID trunks to the customer location. The next topic is a description and flow of Direct Outward Dial calls. These are calls from PBXs. The calls arrive at the 5ESS Switch over DOD trunks (many times these trunks are also referred to, generically, as DID trunks). The 5ESS Switch can be provisioned to accept the call as either a line side origination off of a trunk or a trunk side origination, depending on the customers circuit design and local tariffs. This lesson presents these DID and DOD call flows based on Recent Change Views and fields. The lesson describes the fields in the Recent Change Views that significantly affect the type of calls being processed. The lesson also provides a comprehensive DID/DOD call processing and routing Flowchart. The lesson includes references to Alcatel-Lucents 5ESS Dyna Text documentation. This lesson presents call routing Recent Change Views and the following Trunk Recent Change Views:

RCV 5.1 Trunk Group

RCV 5.5 Trunk Member

RCV 5.3 Transmission Class

RCV 14.1 Automatic Trunk Test Table

Lesson 7 Local Number Portability

This Local Number Portability (LNP) lesson describes how this feature operates in the telecommunication network and in a 5ESS Switch. It presents the 5ESS Switch Recent Change Views and Fields required for the feature to operate. The lesson includes several Local Number Portability scenarios along with external database query procedures. It also presents the individual Local Number Portability 5ESS line translations. The function of Location Routing Numbers (LRNs) are defined and the 5ESS Switch VFY:OFC and TST:ASPTQ input messages are presented as the method to identify Ported Telephone Numbers, Location Routing Numbers and identify the hosting switch of a ported telephone number. This lesson references Alcatel-Lucents 5ESS Dyna Text support documentation. The lesson presents call routing and the following Local Number Portability related Recent Change Views:

RCV 1.6, **1.8**, **23.2** and **23.8** Analog Line and Digital Subscriber Line

RCV 9.3 Local Digit

RCV 9.7 Remaining Digit

RCV 9.35 Network Services Trigger Definition

RCV 8.2 Normalized Office Codes

RCV 8.17 Direct Signaling Application

RCV 4.14 Hundreds Group Assignment

RCV 15.11 Global Title Translation

Lesson 8 Billing and Charging

This Billing and Charging lesson presents the Recent Change Views and Fields that identify the charge for a call and perform the billing of a call. In the 5ESS Switch, billing is controlled and processed via the Automatic Message Accounting (AMA) feature. This lesson presents the call processing functions that include the billing and the different Recent Change Views involved. The lesson also presents the AMA Trace as a method to verify the accuracy of existing charging Recent Change Views and Fields. A billing record obtained via an AMA Trace is analyzed in class. This lesson includes references to Alcatel-Lucents Dyna Text 5ESS Switch documentation. The lesson presents the call routing Recent Change Views and the following Billing and Charging Recent Change Views:

RCV 10.10 Screening (Rate and Route - RAR)

RCV 10.11 Charge Index Expansion

RCV 10.12 AMA Call Type

RCV 10.13 Coin Charging

RCV 10.14 Message Register

RCV 10.15 Rate Day and Time

Delivery Method

Instructor-Led with numerous Hands-On labs and exercises.

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

Access to a 5ESS switch is required 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