NDC Concepts Training
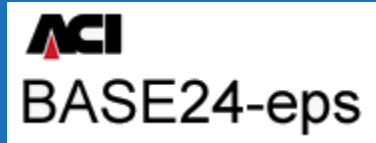
Course Outline

DURATION : 5 DAYS

A basic knowledge of ATMs is assumed as a prerequisite for this workshop. The workshops, which can be tailored to individual needs, will cover the following general areas:

- Definition, Features, Functions, Network Environments, Software Components and Modes of Operation
- Screens: User defined, graphics and logos, screen control characters and screen download messages
- States: definition, description, use, creation, transaction flow
- Printing: devices, control characters, simulated pre-print, security trace and fixed device status messages
- Communications: format, terminal to host, host to terminal, data command and terminal command messages, status and power up messages
- Security: encryption, financial institution tables, pin verification and message authentication
- Supervisor: select, replenish, configure and access functions, supervisor transactions

The workshops, while 'stand up and teach', consists of theory and practical elements. The breakdown by lesson is as shown in the following slides

The course covers the concepts of NDC which are equally applicable to implementations by NCR / Diebold Wincor / GRG or, any other implementation of NDC

This course makes use of NCR ATM's and uses the NCR implementation of NDC

LESSON 1: INTRODUCTORY OVERVIEW
Purpose :- This lesson provides an overview of 'Direct Connect' products
Objectives:- Upon successful completion of this lesson you will be able to:

Define what an NDC / 'Direct Connect' terminal is
List the characteristics of an NDC terminal
Describe the major differences between Diebold mode and NCR Native mode
Describe where customization of an NDC terminal occurs
List the 4 major configuration files for an NDC terminal
List the different operational modes for an NDC terminal
List the Publications for the various Vendors

LESSON 2: SCREENS AND KEYBOARDS
Purpose:- This lesson discusses the screen definition capabilities for NDC ATMs
Objectives:- Upon successful completion of this lesson you will be able to:

Describe how user-defined screens are used
List the different type of CRT Reserved screens and tell how and when they are used
Describe the functionality of the CRT control characters and <ESC> sequences
Describe how graphics screens and logos are accessed
Describe how to create cyclic idle screens
Identify and interpret a Screen Download Message

LESSON 3: STATES
Purpose:- This lesson describes the NDC States that can be used to control the flow of cardholder transactions
Objectives:- Upon successful completion of this lesson you will be able to:

Define what an NDC State is
Describe how NDC States are used
List the NDC States
Flowchart a transaction flow from a provided NDC State Table
Create and describe a typical NDC transaction flow
Describe the differences between the handling of Smart and Magnetic Stripe Cards

LESSON 4: PRINTING
Purpose:- This lesson discusses the printing capabilities for the NDC ATMs
Objectives:- Upon successful completion of this lesson you will be able to:

List the printers that an NDC terminal can use
List and explain the functionality of the control characters and Escape sequences for each of the printers
Describe how R00 and R01 are used to simulate Pre-Printed receipts
Describe how K01 thru K06 are used to control printer settings.
Show the format of the default Programmable Printing Depository print message and tell when it is used
Show the journal message printed when a deposit occurs on an NDC terminal with a Serial Number Depository
Show the format of the Deposit Envelope Length Error message printed on the local journal
Show the format of the Presenter Error message printed on the local journal
List several examples of Security Trace Messages and describe how to modify their text
Describe the format of the Fixed Device Status Messages printed on the local journal

LESSON 5: COMMUNICATIONS
Purpose:- Discuss the messages that are exchanged between an NDC terminal and its host application
Objectives:- Upon successful completion of this lesson you will be able to:

Describe the messages that are exchanged when an NDC ATM is powered up and communicates with the host for the first time
Describe the messages that are exchanged when an NDC ATM is powered up or reset (after having previously received and saved a configuration download)
Describe a typical transaction flow and the messages that are exchanged between the NDC ATM and the host in support of this transaction
Describe the conditions under which an NDC ATM sends Unsolicited Status messages to the host
Decode and interpret various status messages sent from an NDC ATM to the host.

LESSON 6: SECURITY
Purpose:- This lesson discusses various security aspects of the NDC software
Objectives:- Upon successful completion of this lesson you will be able to:

List the encryption keys supported by NDC and when they are used
Describe how DES Encryption works in an NDC Environment
Describe how RSA Encryption works in an NDC Environment
Describe the general purpose and functionality of Financial Institution Tables (FITs)
List the PIN verification methods supported by NDC
Describe how the FIT fields are used for DES PIN Verification
Explain the Door Access feature and how it works
Explain the purpose of Message Authentication and how it works
List the messages that can be Authenticated

LESSON 7:   SUPERVISOR MODE – NCR / WINCOR / GRG
Purpose:- This lesson describes the Supervisor functions for 'Direct Connect' ATMs
Objectives:- Upon successful completion of this lesson you will be able to:

Define the supervisor functions
Locally configure the terminal and, configure an option
Describe the replenishment options and, set operator access
Carry out diagnostic testing

WORKSHOPS
Purpose:-The purpose of the exercises is to reinforce theoretical learning through the completion of practical tasks
Objectives:- Upon successful completion of the workshops you will be able to:

Design, Create and Download Customer Screens
Add and Display Graphic Pictures
Modify a State Table flow to Pre Set the OP Code Buffer
Modify a State Table flow to define a Transaction Request message
Print on Receipt and Statement Printers
Use and understand the various fixed Message Formats used by NDC
Build a Download and test a FIT Table
Display a LOGO from a FIT Table
Perform Supervisor Functions
Inspect the Electronic Journal log
Create a Rear Settlement Transaction