297-0301-300

DMS-100 Family

Cutover Conversion Services

Customer Method of Procedure

BCS32 and up Standard 03.02 October 1991

northern telecom

DMS-100 Family

Cutover Conversion Services

Customer Method of Procedure

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About this document

Cutover conversion services are for conversion applications where an AT&T Electronic Switching System (ESS) type 1, 1A, 2, 2B, or 3 is being replaced by DMS-100 central office switching equipment. This document contains procedures, requirements, guidelines and specifications associated with the proper implementation of each CCS activity, with the exception of switch grooming analysis and half-tap installation activities which are discussed in *CCS Customer Grooming Method of Procedure*, 297-0301-301.

When to use this document

This document is written for all DMS-100 Family offices. More than one version of this document may exist. To determine whether you have the latest version of this document, check the release information in *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.

How Cutover Conversion Services documentation is organized

This document is part of Cutover Conversion Services documentation that supports the Northern Telecom Cutover Conversion Services. Cutover Conversion Services documentation is a subset of the DMS-100 Family library.

Cutover Conversion Services documentation consists of the following documents.

Number	Title
297-0301-100	*Cutover Conversion Services General Description* Provides a description of NTI cutover services and functions.
297-0301-300	*Cutover Conversion Services Customer Method of Procedures* Describes procedures for CCS customer activities
297-0301-301	*Cutover Conversion Services Grooming Method of Procedures* Describes the grooming analysis associated with central office half tapping applications.

The DMS-100 Family library is structured in numbered layers, and each layer is associated with an NT product. To understand Cutover Conversion Services, you need documents from the following layers:

- DMS-100 Family basic documents in the 297-1001 layer
- Cutover Conversion Services documents in the 297-0301 layer

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows it is a command:

>BSY

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP are shown in uppercase letters:

>BSY LINK

Variables

Variables are shown in lowercase letters:

>BSY LINK ps_link

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
Any active calls may be lost
Please confirm (“YES” or “NO”):
```

The following example illustrates the command syntax used in this document.

Step	Action

1	Busy the P-side link of the SMU by typing
	>BSY LINK ps_link
	and pressing the Enter key.
	where
	ps_link is the number of the P-side link (0 through 19)
	Example input:
	>BSY LINK 7
	Example of a MAP response:
	`Any active calls may be lost`
	`Please confirm (“YES” or “NO”):`

Step number → 1
Instruction → Busy the P-side link of the SMU by typing
Command input → **>BSY LINK ps_link**
Parameters list → ps_link is the number of the P-side link (0 through 19)
Example input → **>BSY LINK 7**
Example output → `Any active calls may be lost` `Please confirm (“YES” or “NO”):`

Introduction

CCS activities

The Northern Telecom Cutover Conversion Services (CCS) includes a variety of capabilities for making a smooth transition from an on-line ESS stored program controlled (SPC) switch or from a non-SPC switch, such as a crossbar or step-by-step type switch, to the replacement DMS-100 family switch. The line assignment and line feature data processing capabilities provided by CCS allow telephone operating companies and central offices to transport existing line service to the DMS-100 switch with greater ease and reliability than previously possible or available from a single vendor. CCS maintains line data until one week before the in-service date.

CCS capabilities can also be exploited in non-conversion applications where an operating company may simply want to compare the contents of databases associated with the central office switch.

The primary objective of CCS processing is to load and maintain line data in the DMS-100 so that the DMS-100 provides the same subscriber service as the switch it is replacing. CCS offers a total range of services to accomplish this goal, from pre-conversion data analysis to loading subscriber lines and providing technical support on the in-service date.

The Northern Telecom CCS department performs the following activities during conversion of the central office:

- compares central office switch and switch database data prior to conversion
- identifies ESS-to-DMS and COSMOS-to-DMS data relationships
- converts line assignment and line feature data using ESS and COSMOS data
- installs converted data into the DMS-100 switch
- processes recent changes to ESS line assignments and line feature data occurring after the initial load of DMS-100 at regular intervals during the recent changes period
- compares (bashes) DMS, ESS, and COSMOS data at scheduled intervals during the cutover period and uses these bash results to update DMS line and feature assignments

- produces trouble tickets after each board-to-board test cycle
- processes subscribers' speed calling lists and loads lists to the DMS-100
- processes call forwarding numbers and loads numbers to the DMS-100
- provides technical support at in-service time.

Each of the above services can also be performed on an individual basis, depending on the cutover processing requirements for your office.

Sequence of activities

Figure 1-1 shows a typical time line for an office cutover using CCS processing. The diagram indicates the timing of each CCS activity with respect to other activities and to such critical dates as the customer information date (CI), installation completion date (K-date) and the in-service (IS) date for the new DMS-100 office.

The following sections (Description and Method of Procedure) provide descriptions of and procedures for performing each CCS activity associated with the central office conversion. Depending on the level of CCS activity required or contracted for by the operating company, some procedures, specifications, guidelines, and requirements may not apply. Refer to the CCS Schedule of Services for your office to determine which of the CCS activities apply. (Appendix A shows a sample CCS Schedule of Services.)

Figure 1-1xxx
Typical sequence of CCS activities

CI-3 wks	Grooming analysis for half-tap
CI	Customer Information/engineering
K-14	First data comparison(deadline for special feature requests to the CCS department)
K-10	Deadline for signoff of feature Mapping Rules
K-8	Half-tap and cross-connects
K-6	Pre-conversion data analysis
K-2	Conversion*
K-1	Load final lines into DMS-100
K-date	Post-conversion bash #1 Board-to-board test cycle #1
K+3	Board-to-board test cycle #2
K+4	Post-conversion bash #2
K+5	Board-to-board test cycle #3
K+6	Board-to-board test cycle #4
K+7	Post-conversion bash #3 Board-to-board test cycle #5
IS-1 wk	Load speed calling list data
IS-(2-4) hrs	Load call forwarding numbers
IS	In-service date for DMS-100

CI = Customer Information meeting
K-date = Installation activities complete
IS = In-Service date

* Note: At conversion the following should be complete:
1) Translations (e.g. Centrex Common Block) built and loaded into DMS-100.
2) COSMOS completely through Dial Transfer
3) Recent changes being stored in COSMOS.

Description

Cutover activities and responsibilities

The Northern Telecom CCS department provides cutover conversion services to support the three distinct phases of a central office switch cutover:

- pre-conversion
- conversion
- post-conversion.

Table 2-1 lists the activities associated with each of these cutover phases; the following subsections provide detailed descriptions of each activity in addition to explaining the primary responsibilities associated with each activity.

Table 2-1xxx
Activities for each cutover phase

Cutover Phase	Activities	Primary Responsibility
Pre-conversion	Provide database tapes to CCS	Operating company
	Compare database contents	CCS
	Signoff of CCS Feature Mapping Rules	Operating company
	Provide/obtain bash results	CCS/operating company
	Correct database errors	Operating company
	Generate conversion data forms	CCS
	Provide conversion data	Operating company

- continued -

Table 2-1xxx
Activities for each cutover phase (continued)

Cutover Phase	Activities	Primary Responsibility
Conversion	Provide conversion tapes to CCS	Operating company
	Begin storing recent changes activity as RCR and TRC transaction records in COSMOS database for working switch	Operating company
	Process conversion data supplied by operating company during pre-conversion phase	CCS
	Convert lines from working switch into DMS format using data from conversion tapes and conversion data supplied by operating company	CCS
	Produce a load tape containing the servords for loading lines into the DMS	CCS
	Send load tape to DMS switch site	CCS
	Load tape contents into DMS switch	Northern Telecom installation/operating company personnel
Post-Conversion	Create new set of database tapes, including a DUMPTAB tape from the newly-loaded DMS switch	Operating company
	Begin processing COSMOS RCR and TRC transaction records and update lines as required	CCS
	Generate trouble tickets from board-to-board testing	CCS
	Compare contents of post-conversion database tapes and update DMS as required	CCS
	Extract, process, and load customer speed calling lists	CCS
	Extract, process, and load customer call forwarding numbers	CCS
	Provide support to operating company on DMS switch in-service date	CCS
	End	

Note: The following sections in this chapter provide detailed descriptions of each activity for each phase of the cutover process, as implemented by Northern Telecom CCS. In addition, these sections note the respective operating company and CCS department responsibilities associated with each cutover phase. Specific procedures to be followed by the operating company in the performance of activities that are the responsibility of the operating company, such as creating database tapes, furnishing needed data, building recent changes records in COSMOS, etc., are provided in the Method of Procedure chapter of this document.

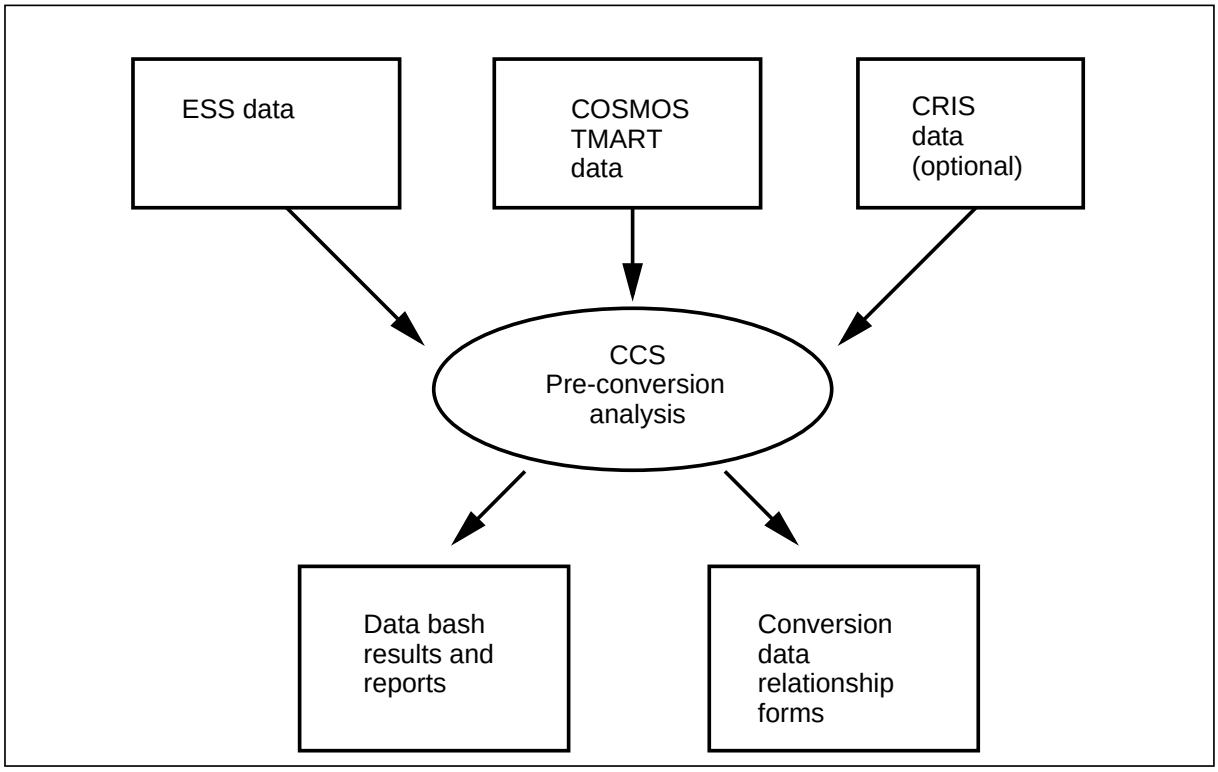
Pre-conversion cutover phase activities

Pre-conversion is the first phase of the cutover process and typically involves the following activities:

- feature mapping rules review and signoff
- 2-way data bash
- identification of COSMOS-to-DMS and ESS-to-DMS conversion data relationships.

Figure 2-1 shows a high level diagram of the pre-conversion phase of cutover.

Figure 2-1xxx
Pre-conversion analysis process



CCS feature mapping rules

The feature mapping document which is available from your regional NTI CCS project manager or coordinator or the CCS department lists the specific rules used for line and feature data conversion during the cutover conversion process. Feature mapping refers to the processing and converting of line and feature data from an in-sevice AT&T 1, 1A, 2, 2B, or 3 ESS switch and corresponding COSMOS data into line and feature data for a replacement Northern Telecom Digital Multiplexing System (DMS). The objective of the CCS feature mapping process is to install line and feature data in the DMS-100 switch so that its line service functionality is identical to that of the ESS-type switch that is replaced. This document axplains the specific mapping rules for an ESS-to-DMS conversion and the rationale behind the mapping of features and line data.

Because of differences involving line translations and feature operation, classes of service, and special requirements between telephone companies and offices, the CCS feature mapping rules must be thoroughly reviewed and understood before the conversion phase of the CCS process. To ensure that DMS line translations and features meet your requirements for service, formal signoff of the feature mapping rules is required before the conversion phase.

Signoff for the feature mapping rules indicates that representatives of the telephone company have thoroughly reviewed and approved the ESS-to-DMS processing and conversion relationships that are to be used during the conversion phase at K-2 (that is, two weeks before the K-date, the date at which installation is complete). Signoff of the feature mapping rules and the CCS group's responses to any special requests for feature mapping should occur *at least two months before the conversion date.*

2-way data bash

The 2-way data bash compares the COSMOS TMART data for the office with the line assignment and line feature data from the ESS switch. More specifically, this bash compares the DNs, OEs, and limited features (described later) between the two databases. The purpose of this data bash is to provide reports that detail the differences between these two databases. The operating company can use these data bash results to correct or reconcile the content of each database before conversion.

Data bash capabilities and reports

Depending on the database types involved in the data bashing process, CCS can compare the following line characteristics and line features among DMS-100, ESS, COSMOS, and CRIS data.

> ***Note:*** For the pre-conversion phase of the office cutover process, the data bash will typically involve only the COSMOS and ESS databases; at this stage, DMS data is unavailable (has not been converted and loaded).

- Directory numbers (DNs)
- DNs and their corresponding Office Equipment (OE) numbers
- DNs and their associated line features
- DNs and their associated limited features
- DNs and their associated DMS-100 line index numbers (post-conversion bashes only)
- DNs and their associated series completion or hunting numbers
- DNs and their associated special billing numbers
- DNs and their associated Primary InterLATA Codes (PICs)
- DNs and the feature attributes associated with the DNs
- Multi-Line Hunt groups and their associated line features
- Centrex group attribute data and IBN/MDC group attribute data (post-conversion bashes only)
- DNs and the associated predicted LEN (as determined by CCS grooming algorithms).

Directory numbers bash

CCS compares the DNs contained in each database involved in the data bash for a given office. CCS produces a report that lists directory numbers that are not contained in all databases. The report lists database discrepancies; DNs contained in all databases are not listed.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

DNs and OE/LENs bash

CCS compares the OE associated with each DN that is contained in all the databases involved in the data bash. When the DMS database is involved in this bash CCS produces two reports in one for this bash. One Section lists the DNs that had a different OE in each database; the other Section lists the DNs that had a different LEN in each database.

The OE bash Section compares the COSMOS OE for the DN to the ESS OE for the same DN; the LEN bash Section compares the COSMOS-assigned LEN for the DN to the DMS LEN for that same DN.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Features bash

CCS compares the line features associated with each DN that is contained in all the databases involved in the bash. The most meaningful bash involving

features, however, is between the ESS and the DMS-100 databases (post-conversion bash); typically, the COSMOS and CRIS databases contain very little feature information on lines other than whether the line is TouchTone/Digitone, Ground Start, or Essential. These three features comprise the Limited Features bash.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Limited features bash

CCS compares the TouchTone/Digitone Ground Start, and Essential line features associated with each DN that is contained in all the databases involved in the bash. These features are bashed separately from the other features since COSMOS and CRIS typically contain only this information.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Line index bash

Note: This bash is generally performed only after the DMS has been loaded during the conversion phase.

CCS compares the class of service associated with lines in all databases by comparing the DMS-100 line attribute index number associated with the line. In the case of lines in the ESS and COSMOS databases, CCS asks the operating company to assign a DMS-100 line index to each unique Line Class Code and/or USOC associated with the line. These line index numbers reference records in the DMS-100 line attribute index table to specify the class of service for the line in the DMS-100. This is how CCS relates class of service in the ESS and COSMOS to class of service in the DMS-100.

The line index data bash reports on discrepancies between the class of service for lines in the ESS and COSMOS for the same lines in the DMS-100. CCS uses the DMS-100 line index number for a line as the common denominator for identifying and comparing a given line’s class of service among the databases involved in the bash; CCS does not compare LCCs/USOCs on a literal basis.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Hunting bash

CCS compares the series completion, or ‘hunt-to’ number associated with each hunting DN that appears in all databases involved in the bash. This

bash reports on any DNs that have different or non-existent hunting numbers in the databases involved in the bash.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Special billing bash

CCS compares the special billing DN associated with a DN found in each of the databases involved in the bash. The bash reports on those DNs that have different or non-existent special billing numbers in each of the databases.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

PIC code and PIC choice bash

CCS compares the Primary InterLATA Carrier (PIC) code assigned to DNs that are found in all databases involved in the bash. The bash reports on those DNs for which **both** the PIC code **and** PIC choice assignments do not match in all databases. The operating company can request that only the PIC codes be bashed.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Feature attributes bash

Certain features are defined by more than one parameter. Call Forwarding Don’t Answer, for example is defined in terms of both the feature (CFDA) and the number that the line forwards to in a don’t answer situation. The forwarding number in this case is the feature attribute.

CCS compares feature attributes associated with DNs contained in all databases involved in the bash. The bash report lists the DNs for which the feature attribute data IS NOT the same in all databases.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Multi-Line hunt group bash

Multi-Line hunt group terminals are identified by an OE or LEN since they share a pilot DN. So all multi-line hunt groups, and all features that are associated with those lines, are bashed separately from all other types of lines.

The bash report is actually composed of several reports. The first report is the Multi-Line Hunt bash which matches the terminals of all multi-line hunt groups between the databases being bashed. If any mismatches are found then the entire multi-line hunt group for those databases are listed in the report. When a mismatch is found with a multi-line hunt group the features on those terminals are not bashed.

If all terminals of a particular multi-line hunt group do match, then the features on those terminals are bashed. Any discrepancies here are provided in bash reports similar to the reports generated for other types of lines (Features bash, Limited Features bash, etc.). The only difference is that these Feature discrepancies for multi-line hunt terminals include the OE or LEN in the report.

Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for sample bash report and instructions on processing the bash results.

Data bash summary reports

CCS provides the following summary data for the pre-conversion data bashes:

- ESS LCC count - the number of ESS lines associated with each unique set of LCC expansion data (Chart Column, Originating Major, Terminating Major)
- ESS MLH Groups - lists all multi-line Hunt groups in tahe ESS by hunt group number
- ESS Speed Call Groups - lists all two-digit Speed Calling groups for Centrex lines in the ESS
- ESS Call Pickup groups - lists all Call Pickup groups in the ESS by CPU group number
- ESS Centrex Lines - lists all Centrex lines in the ESS by Centrex group number
- ESS Series Completion - lists all Series Completion DNs in the ESS
- COSMOS USOC count - the number of lines associated with each unique COSMOS USOC

For post-conversion data bashes, CCS provides all of the above in addition to the following:

- DMS Line Index count - the number of DMS lines associated with each DMS line attribute index number.

Conversion data relationships

Also during the pre-conversion phase, CCS extracts the unique Line Class Codes (LCCs) and USOCs from the ESS and COSMOS data for both POTS and Centrex-type lines. CCS lists these data on several forms, provides the

forms to the operating company, and requests that operating company cutover personnel supply the corresponding or equivalent DMS-100 line attribute index numbers for each identified ESS or COSMOS data element.

These data relationships tell CCS which DMS-100 class of service to assign to a given ESS or COSMOS line. In addition to DMS-100 line index numbers, CCS also asks for any global options that need to be explicitly assigned to the line beyond those provided by the DMS-100 LCC for the line. For example, in the ESS machine, Denied Termination (DTM) is implicitly specified by the ESS LCC for the line. In the DMS-100, however, DTM must be added to the line as an option; the DMS-100 LCC does not automatically provide the DTM option.

CCS solicits the data relationships from the operating company prior to the scheduled conversion date for the office. The operating company, in turn, must supply the requested information to the CCS department together with the tapes used in the conversion process.

Figure 2-2, Figure 2-3, Figure 2-4, and Figure 2-5 show examples of the types of forms CCS uses to identify these COSMOS-to-DMS and ESS-to-DMS class of service relationships.

Figure 2-2xxx
COSMOS-to-DMS-100 POTS data relationship form

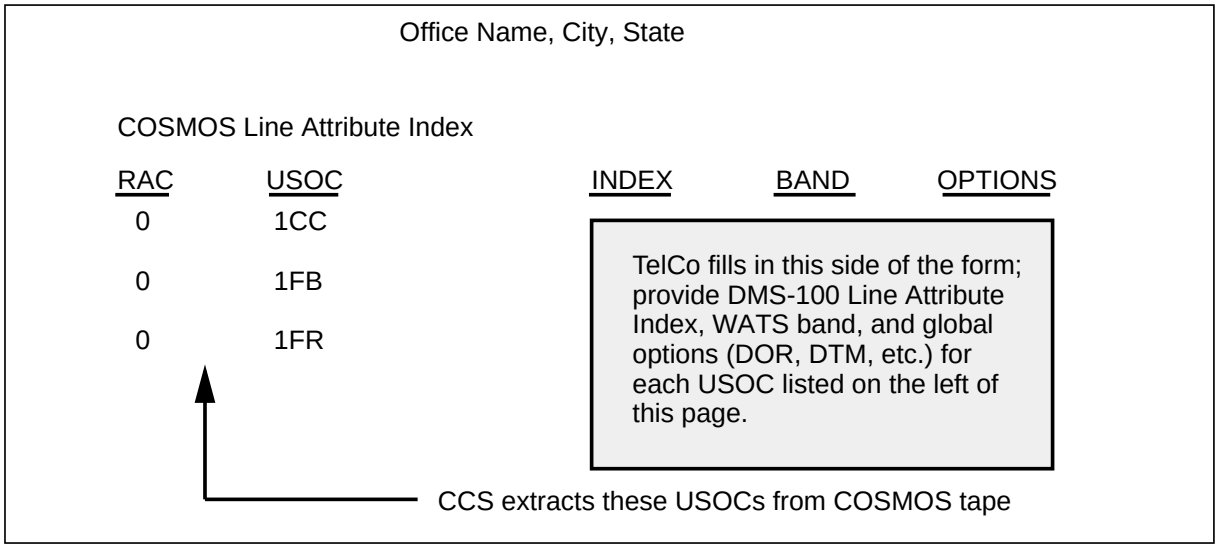


Figure 2-3xxx
COSMOS-to-DMS-100 IBN/MDC relationship form

Office Name, City, State

COSMOS Centrex Attributes

RAC	USOC	CTX	CAT	PIC	INDEX	DIGITS	NCOS	IBNNAME	SUBGROUP	OPTIONS
0	RMA	J007	0	222						
0	RMA	U006	0	NIL						
0	RWR	G010	0	288						
0	RWR	G010	0	NIL						

TelCo fills in this side of the form; provide DMS-100 Line Attribute Index, Number of Dialing Digits, NCOS, IBN Customer Group Name, Subgroup Number, and Global Options (DOR, DTM, INW, etc.) for each Class of Service on the left side of this page.

CCS extracts these data from COSMOS tape

Figure 2-4xxx
ESS-to-DMS-100 POTS data relationship form

Office Name, City, State

ESS Line Attribute Index

RAC	LCC	CCOL	OMAJ	TMAJ	INDEX	BAND	OPTIONS
0	7FB	001	03	04			
0	DNY	001	03	22			
0	1FB	001	04	04			
0	1FB	001	04	28			

TelCo fills in this side of the form; provide DMS Line index, WATS band, and global options for each LCC listed on the left of the form.

CCS extracts these data from ESS tape (LCC and associated expansion data)

LCC Line Class Code
CCOL Chart Column
OMAJ Originating Major
TMAJ Terminating Major

Figure 2-5xxx
ESS-to-DMS-100 IBN/MDC data relationship form

Office Name, City, State

ESS Centrex Attributes

RAC	LCC	CTX	CAT	PIC	INDEX	DIGITS	NCOS	IBNNAME	SUBGROUP	OPTIONS
0	ORG	001	0	852						
0	PDY	006	1	288						
0	RXR	001	0	222						
0	RXR	002	1	288						

TelCo fills in this part of the form; provide DMS-100 Line Attribute index, dialing digits, NCOS, IBN name, Sub-group, and any global options for each line of ESS Centrex group data listed on the left side of this form.

CCS extracts these data from the ESS tape

The pre-conversion data analysis activity occurs several weeks prior to the K-date for the office. Refer to the CCS Schedule of Services for your office to determine the date for this activity. (Appendix A shows a sample CCS Schedule of Services.)

The following subsections summarize the responsibilities of the operating company and the Northern Telecom CCS department during the pre-conversion analysis phase of a central office cutover.

Operating company responsibilities during pre-conversion analysis

- provide COSMOS TMART and ESS pre-conversion database tapes to CCS department
- using forms provided by the CCS department, provide the DMS line attribute index information for each of the COSMOS USOCs and ESS LCCs identified by CCS from the database tapes
- obtain database discrepancy reports from CCS after CCS completes the pre-conversion data bash
- use the CCS database discrepancy reports to correct the database errors. (Refer to the section “How to process the pre-conversion data bash discrepancy reports” in the Method of Procedure chapter for instructions.)
- Translations (e.g., Centrex, MLH Common Block information) should be completed as normal. CCS does not convert this information.

Note: The specific procedures and requirements associated with handling each of the above operating company responsibilities are noted in the Method of Procedure chapter of this document.

CCS department responsibilities during pre-conversion analysis

- compare contents of pre-conversion database tapes furnished by operating company
- generate database discrepancy reports for use by operating company in correcting database errors
- provide forms for use by operating company to specify the DMS line attribute index number appropriate for each of the COSMOS USOCs and ESS LCCs identified by the CCS department.

Conversion cutover phase activities

The conversion phase of the central office switch cutover involves the following activities:

- conversion of COSMOS and ESS line assignment and line feature data into DMS format
- beginning of the recent changes recording process in the COSMOS database to document changes to the line data in the working switch that occur **after** the conversion database tapes are created
- loading the converted data from the working switch into the replacement DMS switch.

Conversion of COSMOS and ESS data into DMS format

After the operating company has used the results of the pre-conversion data bash to correct the database contents as required, and after supplying the CCS department with the DMS class of service information associated with each of identified COSMOS USOCs and ESS LCCs, the CCS department can convert the COSMOS and ESS line assignment and line feature information into a format suitable for loading into the replacement DMS office switch.

The conversion phase of the cutover process requires that the operating company furnish the CCS department with a new set of ESS and COSMOS TMART database tapes. The CCS conversion process builds DMS-100 service orders using data from the ESS switch, data from the COSMOS database (COSMOS TMART OP-DT tape) for the switch, and information supplied by the operating company concerning ESS-to-DMS and COSMOS-to-DMS data relationships.

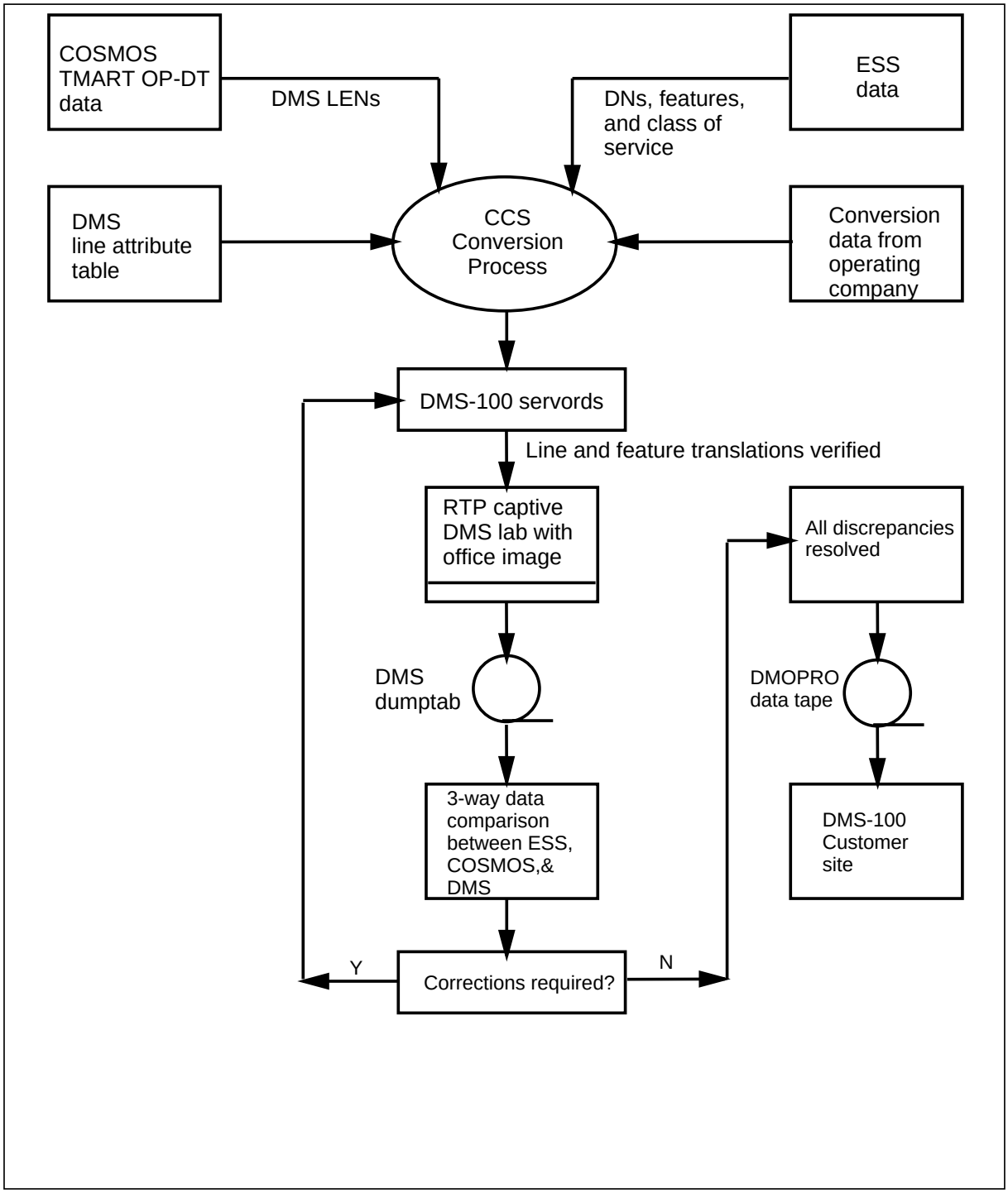
> ***Note:*** In cases where the conversion is from a non-SPC switch, such as a crossbar, or step switch, CCS can build DMS-100 lines using only the COSMOS data and operating company-furnished COSMOS-to-DMS relationship data.

Generally, the conversion process gets the Directory Numbers (DNs), Line Class Codes (LCCs), and the line features from the ESS switch database. The DMS-100 Line Equipment Numbers (LENs) for each line come from the COSMOS TMART OP-DT tape. The conversion process references the DMS-100 line attribute table, using the line index numbers provided by the operating company for each unique ESS LCC, to derive the DMS class of service for each line.

The conversion process usually occurs about two weeks prior to the K-date for the new DMS-100 office.

Figure 2-6 shows a high level diagram of the conversion process.

Figure 2-6xxx
CCS conversion process



During the CCS conversion process, information representing ESS features per DN is converted to information representing DMS features per DN.

Start of recent changes recording cycle

In addition to building the lines for loading into the replacement DMS switch, the conversion phase also marks the beginning of the recent changes recording and processing cycle for the office in conversion. The recent changes process typically starts when the operating company creates the COSMOS TMART OP-DT conversion tapes and terminates when the office recent change activity is frozen usually not later than one week prior to the in-service date.

The operating company documents service changes to lines in the working switch by building RCR and TRC transaction records in the COSMOS database for the office in conversion. At regular intervals during the recent changes period, the CCS department processes these recent changes records and updates the lines in the DMS to reflect the changes to the lines in the working switch.

Refer to the Method of Procedure chapter in this document for the procedures to be followed when building RCR and TRC transaction records in COSMOS; refer to the CCS Schedule of Services for your office to determine the dates for the recent changes activity. (Appendix A shows a sample Schedule of Services.)

Loading lines into the DMS

The next step involves loading of the final line and feature information into the DMS-100. This information comes to the site in the form of a DMOPRO data tape. The DMOPRO tape has files on it which are used to load the line and feature data into the DMS. This process is much faster than the individual loading of service orders. Before the DMOPRO data tape is made by CCS, the line and feature data is loaded into an NT DMS captive lab switch and tested to verify the correctness of the data.

The new DMS-100 lines are loaded into the switch during the week following the conversion. Refer to the CCS Schedule of Services for your office to determine the dates for the conversion and recent changes activities. (Appendix A provides a sample Schedule of Services.)

The following subsections summarize the responsibilities of the operating company and the Northern Telecom CCS department during the conversion analysis phase of a central office cutover.

Operating company responsibilities during conversion phase

- the lines being converted must be through dial transfer before the conversion tapes are generated. If not, there will be a delay loading the DMS-100 until they are through dial transfer.
- return signed feature mapping approval form
- provide conversion database tapes to CCS department (ESS and COSMOS)
- when conversion tapes are generated, begin storing RCR and TRC transaction records into the COSMOS database for the switch to document changes to the line assignment and line features in the working ESS switch.
- when the CCS department sends the load tape containing the DMS line assignment and line feature data to the switch site, assist in loading tape contents to the switch.

Note: The specific procedures and requirements associated with handling each of the above operating company responsibilities are noted in the Method of Procedure chapter of this document.

CCS department responsibilities during conversion phase

- process conversion data supplied by operating company during pre-conversion phase (class of service relationships between COSMOS and DMS and between ESS and DMS)
- convert lines from working switch into DMS format using ESS and COSMOS conversion tapes and conversion data relationships provided by operating company
- create load tape containing the service orders for the new DMS switch
- send load tape to DMS switch site
- assist operating company in loading tape contents to the DMS.

Post-conversion cutover phase activities

The following activities occur **after** the conversion phase of the office cutover completes:

- post-conversion data bashes
- updates to the DMS line assignments and line features using the results of post-conversion data bashes and the recent changes records from COSMOS
- updates and corrections to the COSMOS and ESS databases as required using the bash discrepancy reports produced by the CCS department
- board-to-board testing cycles and trouble ticket generation

- customer speed calling list processing
- customer call forwarding numbers processing

Post-conversion data bashes and DMS line updates

After the new DMS-100 is loaded with servords created during the conversion process, a series of data bashes verifies that the line assignments (and line features) in the DMS match the contents of the on-line ESS switch. CCS uses these post-conversion bashes, together with the recent changes process (ongoing since the conversion tapes were created by the operating company) to keep the DMS up to date with changes to the on-line ESS switch. Figure 2-7 shows a general diagram for the CCS data bashing activity.

This activity requires that the operating company furnish CCS with a new set of COSMOS TMART (OP-DT), ESS, and DMS-100 tapes. CCS examines the contents of each database, identifies discrepancies, and takes the appropriate measures to update the lines in the DMS-100 switch.

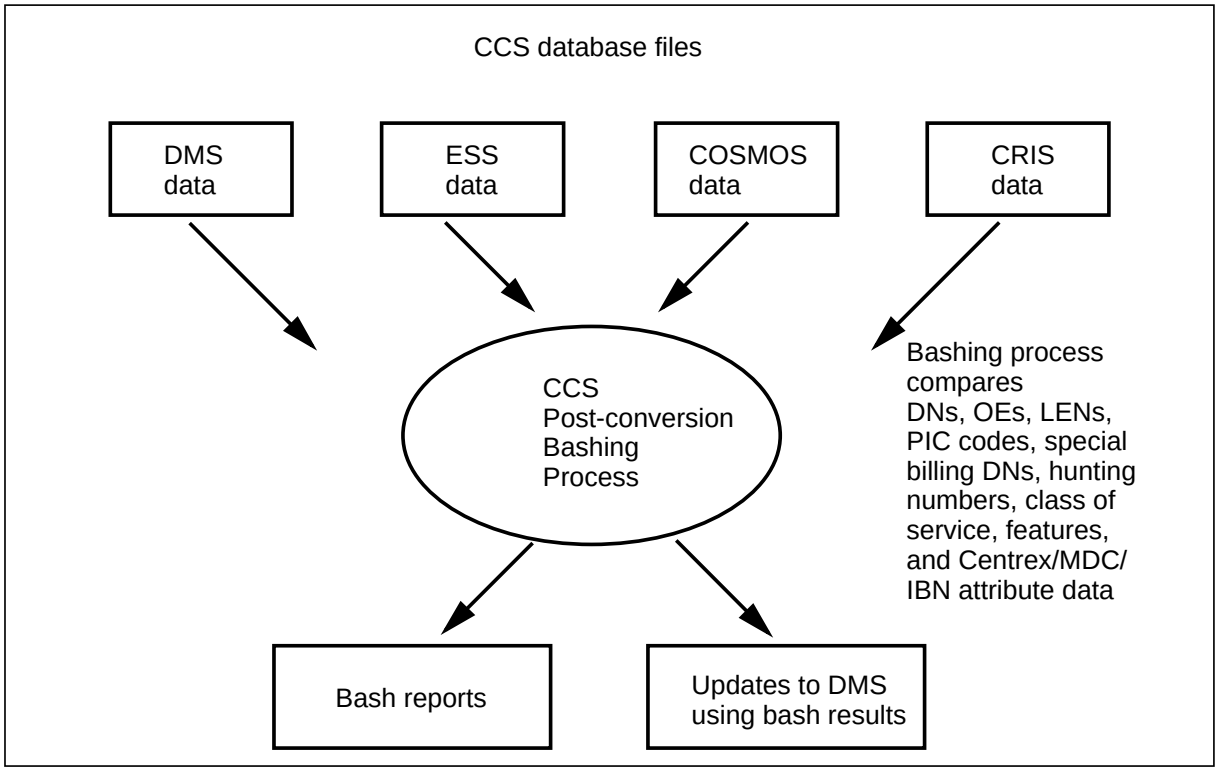
In general, the CCS department assumes primary responsibility for handling database discrepancies between the ESS and the DMS; the operating company is responsible for correcting database errors between the ESS and COSMOS and any other non-DMS database.

For example, if the bash report indicates that a particular feature is present on a line in the ESS, but missing from the line in the DMS, the CCS department will take the appropriate measures to add the missing feature to the line in the DMS. Also, if the bash shows that a line in the ESS is missing from the DMS, the CCS department will add the line to the DMS if the line is also contained in the COSMOS database. Again, lines can be added to the DMS only if the line is also in the COSMOS database since COSMOS provides the LEN assignment for the line.

Refer to the Method of Procedure chapter of this document for detailed information on how to interpret and process the post-conversion data bash reports.

The first data bash after the DMS-100 is loaded usually occurs the week after loading. Refer to the CCS Schedule of Services for your office to determine the date for this activity and for subsequent post-conversion data bashes. (Appendix A shows a sample Schedule of Services.)

Figure 2-7xxx
CCS data bashing process

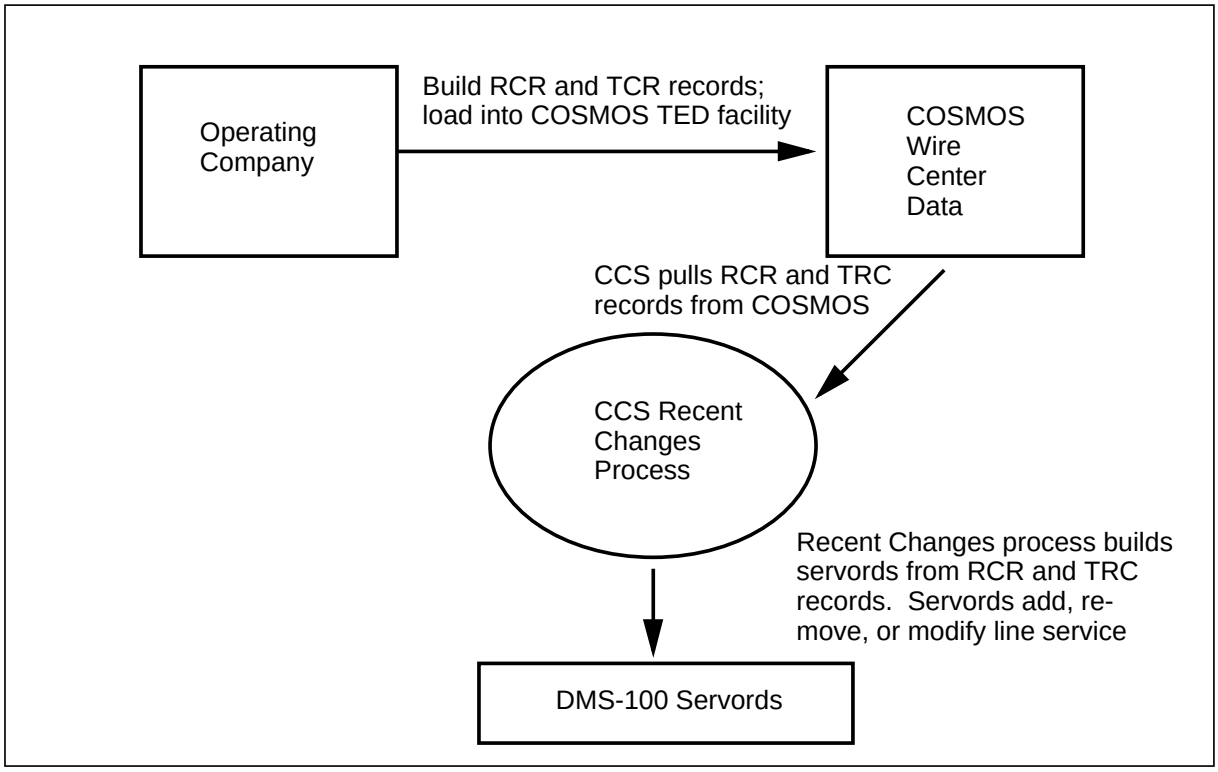


Recent changes processing

Using the recent changes process, CCS extracts RCR and TRC transaction records (created by the operating company) from COSMOS TED files in the COSMOS Wire Center for the office under conversion and converts this information to DMS-100 servord messages. (Line feature changes not stored in COSMOS will be extracted from the stored program control switch during a post-conversion data bash and applied at the completion of the data bash.) Figure 2-8 shows a general diagram of the CCS recent changes processing activity.

The RCR transaction records contain the servord command elements for removing lines and adding options to existing lines; the TRC transaction records contain the servord command elements for creating new lines, establishing DN and Multi-Line Hunt (MLH) groups, and adding lines to existing hunt groups.

Figure 2-8xxx
CCS recent changes processing



Board-to-board testing

Board-to-board testing is performed over a period of several weeks prior to cutover from the on-line switching system to the new DMS-100 system. At this stage, customer lines appear on both systems, however, service is still provided by the switch to be replaced.

Board-to-board testing verifies that the software data tables and physical cross-connections match prevailing conditions in the on-line switch. The board-to-board testing arrangement checks the following:

- proper assignment of new line equipment
- continuity of new lines
- absence of jumper reversals at the Distribution Frame (DF)
- tip and ring affiliations of party lines
- loop-start and ground-start assignments in the line data tables.

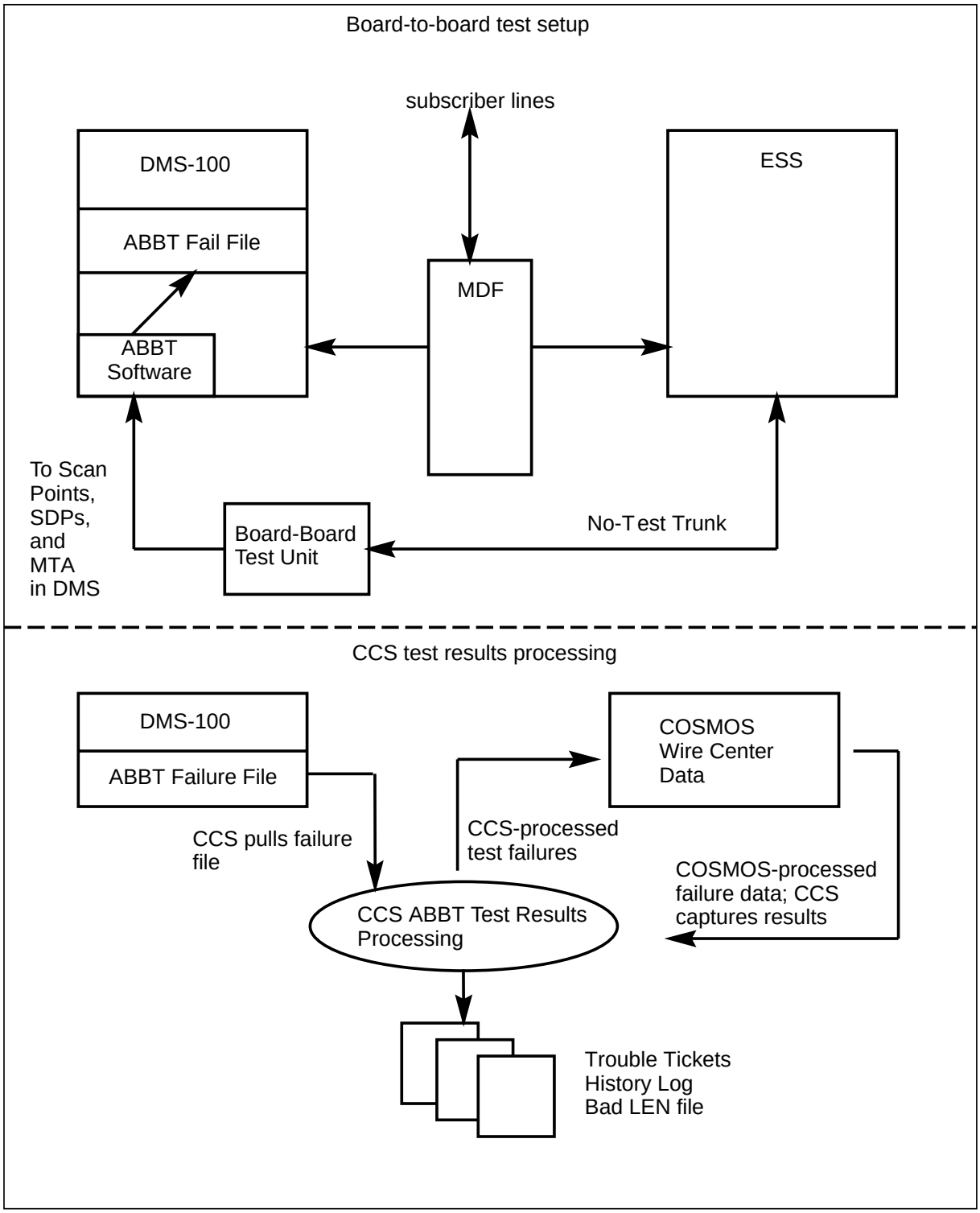
The testing compares the original subscribers' numbers with the physical locations of the corresponding line equipment assigned to those subscribers in the new system. The testing ensures that the connections of transferred lines to the replacement switch are correct with respect to the existing connections of these lines to the working switch.

The Northern Telecom installation department will install, and test the required number of board-to-board test units such that the board-to-board test equipment is ready three days before the test begins. In addition, Northern Telecom will, at customer request and for a predetermined price, maintain the board-to-board test units during the board-to-board testing period. Refer to the CCS Schedule of Services for your office to determine the dates for board-to-board test cycles. (Appendix A shows a sample Schedule of Services.)

The board-to-board testing program stores equipment failures in a file in the DMS-100. This file identifies the lines that failed testing and also notes the reason for the failure. CCS analyzes this board-to-board test failure file, retrieves associated line data from the COSMOS Wire Center for the office, and uses these data to produce trouble tickets. These tickets can then be used to investigate and correct board-to-board test failures at the switch. Figure 2-9 shows a general diagram of board-to-board testing and tests results processing.

When the operating company contracts for board-to-board CCS processing, CCS processes up to five board-to-board testing cycle trouble ticket generations for the office.

Figure 2-9xxx
Board-to-board test cycle results processing/trouble ticket generation



Speed calling lists processing

This CCS activity extracts subscribers' speed calling lists from the ESS tape data and loads these lists into the DMS-100 switch .

Since speed calling lists can be user-programmed, they are subject to frequent change. Consequently, the activity that installs these numbers in the new DMS-100 switch is deferred until as close to the in-service time as possible.

For #1AESS and # 1ESS switches, CCS gets the speed calling lists from the last ESS tape generated prior to in-service (the same tape used in the last post-conversion data bash); for #2ESS, #2BESS, and #3ESS switches, CCS arranges with the operating company and the local Switching Control Center (SCC) to obtain the speed calling lists and place these lists in an SCC computer file.

According to prior arrangement with the operating company and SCC, CCS extracts the files from the SCC, processes the data as required, and loads the data to the appropriate tables in the DMS-100 switch. Refer to the CCS Schedule of Services for your office to determine the dates for processing and loading speed calling lists. (Appendix A shows a sample Schedule of Services.)

> ***Note:*** Since CCS uses the last ESS tape produced before the in-service date to obtain the speed calling list data for the office, the operating company is responsible for handling any speed calling list changes that occur after this tape is generated.

Call forwarding numbers processing

This activity involves the operating company extracting the subscribers' user-defined call forwarding numbers from the on-line ESS switch and placing them in a file in the local SCC computer. On the day of the cutover, CCS personnel pull these numbers from the SCC and enter the numbers in the appropriate DMS-100 data table.

Like the speed calling lists, this activity is scheduled as close to the in-service time as possible so the most current call forwarding numbers are installed.

CCS arranges to conduct a trial run several weeks prior to the actual performance of the activity. This gives the operating company an estimate of how long it takes to extract the call forwarding data and place it into an SCC file. CCS, for its part, will get a more accurate estimate of how long it takes to retrieve, process, and load the call forwarding data.

Refer to the CCS Schedule of Services for your office to determine the date and time for performing this activity. (Appendix A shows a sample Schedule of Services.)

Operating company responsibilities during post-conversion phase

- provide post-conversion database tapes to CCS department
- continue creating RCR and TRC transaction records in the COSMOS database for the office in conversion to document change activity to the working switch
- update the COSMOS and ESS databases as required using the results of the post-conversion data bashes (Refer to the section “Processing the post-conversion data bash discrepancy reports” in the Method of Procedure chapter of this document.)
- coordinate and support board-to-board testing cycles with CCS personnel.

Note: The specific procedures and requirements associated with handling each of the above operating company responsibilities are noted in the Method of Procedure chapter of this document.

CCS department responsibilities during post-conversion phase

- compare contents of post-conversion database tapes and provide error reports to operating company
- update the lines in the DMS using the results of the post-conversion data bashes as well as the COSMOS RCR and TRC transaction records
- extract, process, and load customer speed calling lists
- extract, process, and load customer call forwarding numbers
- provide technical support during the office in-service data.

Method of procedure

Pre-conversion procedures

This section provides procedures to be followed by the operating company when performing the pre-conversion phase of the office switch cutover. The procedures relate to the following operating company responsibilities:

- creating and providing ESS and COSMOS pre-conversion database tapes to CCS department for analysis
- accessing the CCS system to retrieve data bash discrepancy reports
- using the pre-conversion bash results from the CCS department to update the COSMOS and ESS databases as required
- supplying COSMOS-to-DMS and ESS-to-DMS class of service relationship data on forms provided by the CCS department.

Procedures for creating #1AESS/#1ESS, #2, #2BESS, #3ESS, and COSMOS data tapes

This section contains the following procedures:

- Creating data tapes for #1AESS and #1ESS switches
- Creating data tapes for #2, #2BESS switches
- Creating data tapes for #3ESS switches
- Creating COSMOS TMART data tapes

Procedure 3-1xxx
Transfering #1AESS and #1ESS data to tape

Step	Action
1	Use Translation Data Assembler (TDA) format to dump line data to tape at tape density of 800 or 1600 bpi.
2	For #1ESS switches: a. update the switch before creating TDA tape (i.e., execute a card write) b. convert the tape from 200 BPI to 800, 1600, 3200, or 6520 BPI. For an extra charge the CCS department can send the TDA tape to a company who can convert it. c. note the head table address on the tape reel.
	Notes: **1** Data tapes for this activity should be created between the close of service order activities on Friday and the start of activities on Monday. Tapes should be shipped via overnight mail on Monday for arrival at Northern Telecom on Tuesday.
	End

Procedure 3-2xxx
Transfering #2, #2BESS data to tape

Step	Action
1	Use tahe ODA format to dump the data to tape.
2	Take this ODA tape and execute a TOORG run on it.
3	The TOORG tape should be converted to 800, 1600. 3200, or 6250 BPI.
	- continued -

Procedure 3-3xxx
Transferring #3ESS data to tape

Step	Action
1	Enter the following to dump the 3100, 3105, and 3107 forms: (SCC personnel enter the appropriate input command to initiate the form dumping process.) OP:OFR/ (wait for newline) FILE NAME:_____ FORM 3100/ (wait for newline) TN _____ _____/ (wait for newline) NUM _____! (wait for end of printout before next input)
2	Repeat the above sequence as required: OP:OFR/ FORM 3105! (wait for newline) FILE NAME:_____ (wait for end of printout before next input) OP:OFR/ FORM 3107-1! (wait for newline) FILE NAME:_____ (wait for end of printout before next input) OP:OFR/ FORM 3107-2! wait for (newline) FILE NAME:_____
	End

Procedure 3-3xxx
Transferring #3ESS data to tape (continued)

Step	Action
3	After each printout finishes, enter the following command to save the data: **>f:aaa:pat all, from bbccdd00;RDT xxx!** where: aaa logging channel on which forms were output bb month cc day dd hour previous to start of dump xxx the same file name in the same directory from this form for each input.
4	After all information is saved, have the SCC personnel perform the following steps: a. Mount a blank magnetic tape with write ring installed onto the SCC tape drive. b. Enter the following UNIX shell command: **>dd_if=XXX_of=/dev/rmt8 <return>** where: _ space character XXX full path name of file created from filter messages <return> carriage return key. c. After the tape rewinds, demount the tape, label tape with the office name, and the number of records in and out from the 'dd' command. d. Send the tape to the Northern Telecom location performing the CCS service.
	Notes: **1** Data tapes for this activity should be created between the close of service order activities on Friday and the start of activities on Monday. Tapes should be shipped via overnight mail on Monday for arrival at Northern Telecom on Tuesday.
	End

Procedure 3-4xxx
Transferring COSMOS data to tape

Step	Action
1	Arrange with COSMOS personnel to generate a COSMOS **TMART** format tape for the office in conversion.[2] Tapes should be created at 1600 bpi density with a single tape containing information for only one exchange, or NNX.
	Notes: **1** Data tapes for this activity should be created between the close of service order activities on Friday and the start of activities on Monday. Tapes should be shipped via overnight mail on Monday for arrival at Northern Telecom on Tuesday. **2** For COSMOS data to be used in the pre-conversion data analysis activity, any TMART option (MART, NEW, ALL, DT, etc.) is acceptable; however, for COSMOS data that will be used in the conversion phase, only the OP-DT option is suitable, since OP-DT contains the DMS-100 LEN assignment data.
	End

Providing pre-conversion database tapes to CCS department

Procedure 3-5xxx
Providing pre-conversion database tapes to CCS department

Step	Action
1	Send the ESS and COSMOS data tapes created in the previous procedures via overnight mail service to the Northern Telecom location performing the cutover services. Contact your Northern Telecom customer service representative for the address.
2	When CCS completes the data analysis activity and notifies the operating company that bash results are ready, the operating company can either use a dialup facility to retrieve the bash results from the CCS computer, or CCS can mail the bash results to the operating company. Procedure 3-6 provides instructions for using a dialup facility to retrieve bash results from the CCS system.
	End

Using a dialup facility to access the CCS system

This following procedure provides instructions for dialing into the CCS computer and retrieving data bash results and board-to-board trouble tickets.

The operating company should contact the CCS department at the location performing the CCS services to get the dialup facility number, user name and password needed to access the results for their office.

Also, the operating company data terminal should be configured as follows to enable successful communication between the two systems:

Baud Rate: 1200

Data Word: 8 bits

Parity: None

Stop Bits: 1

Duplex: Full

Once the operating company knows the user name and password and their terminal is properly configured, the Procedure 3-6 can be used to extract bash results and trouble tickets.

Procedure 3-6xxx
Accessing the CCS system via dialup facility

Step	Action
1	Use the operating company-resident dialup facility to call the CCS system.

2	After establishing contact with the CCS center, press ENTER as required to display the following CCS Center login prompt::
	
	`CCS!login:`
	
	Provide the requested login (User ID) name. The password prompt will appear as follows:
	
	`Password:`
	
	Enter the password.
	
	After a successful login, the following banner message will appear:
	
	`WELCOME TO THE CCS SYSTEM`
	
	`BROUGHT TO YOU BY`
	
	`NORTHERN TELECOM`
	
	`?`

Procedure 3-6xxx
Accessing the CCS system via dialup facility (continued)

Step	Action
3	Type **dumb** and press ENTER to specify the terminal type to the CCS system. The CCS system will display the following prompt: `Please enter your name:`

4	Enter your name. The following menu will be displayed:
	
	`PRINT REPORTS`
	
	`1) PRINT BASH RESULTS`
	
	`2) PRINT BASH TOTALS`
	
	`3) PRINT BOARD-TO-BOARD HISTLOG`
	
	`4) PRINT BOARD-TO-BOARD TICKETS`
	
	`5) RESTART BOARD-TO-BOARD TICKETS`
	
	`6) PRINT INDEX FORMS`
	
	`7) PRINT DATA BASE TOTALS`
	
	`X) EXIT SYSTEM`
	
	`Enter Selection =>`

- continued -

Procedure 3-6xxx
Accessing the CCS system via dialup facility (continued)

Step	Action
5	Enter the number for the desired operation. When 1 is entered to print bash results, the CCS system will print the bash discrepancy reports to your system console/printer. When 2 is entered to print bash totals, the CCS system will send the bash error totals to your console/printer. Selections 3 through 5 apply to printing board-to-board testing results. When 6 is entered, the system prints the forms that the operating company should use to identify the DMS classes of service most appropriate for the identified ESS and COSMOS LCCs and USOCs. (See Procedure 3-X for instructions on completing these forms.) When 7 is entered, the CCS system prints a summary report that shows the database totals for a number of data elements such as the number of lines with a given feature, number of lines associated with each class of service, etc.)
6	Select X to exit the CCS system after obtaining all desired reports and forms.
	End

How to process the pre-conversion data bash discrepancy reports

The pre-conversion data bash shows the differences between the COSMOS database for a given switch and the actual contents of the switch itself. Since the subsequent conversion process will make use of both the COSMOS data for the switch and the data from the switch itself, it is important that these two databases (COSMOS and the ESS data) be as close to complete agreement as possible. In other words, for any given DN, COSMOS should report the same OE as the ESS, COSMOS should note the same start type for the line (loop or ground) as the ESS, COSMOS should have a class of service attached to the line that is comparable to the class of service assigned to the line in the ESS, etc.

The operating company can use the results of this pre-conversion data bash to purify and reconcile each of these databases as required. Depending on particular requirements, which may vary among operating companies, some discrepancies may or may not need to be acted upon. For example, in many cases, the COSMOS database does not keep track of all of the features that may be on a given subscriber line. The ESS, of course, maintains feature information for all of its lines. Depending on the particular requirements, the

discrepancy report that shows the feature errors between COSMOS and ESS records for the same line may be of little interest or value.

On the other hand, the bash report that shows the DNs that are present in one of the databases but missing from the other should be of extreme importance, especially in cases where a DN in the ESS is missing from the COSMOS database. In these cases, the operating company needs to check the DN and, if required, add the information for the DN into COSMOS to ensure that the DN is ultimately converted for loading into the DMS. ESS lines that are missing from COSMOS cannot be converted by the CCS department; the COSMOS record for the line is the source for the DMS Line Equipment Number (LEN) for the line.

The responsibility for correcting the database discrepancies noted in the pre-conversion data bash reports lies solely with the operating company. The data bash results need to be carefully reviewed and the appropriate measures taken to update either the COSMOS or ESS or both databases as required or indicated.

The following instructions show how to use the results of the pre-conversion data bash reports produced by the CCS department.

Processing results from the Directory Numbers bash

CCS compares the DNs contained in each database involved in the data bash for a given office. The report lists directory numbers that are **not contained in all databases**.

For example, in a data bash involving ESS and COSMOS associated with the office, a segment from the DN bash report looks like this:

Numbers not in all Data Bases

DN	in COSMOS	in ESS
3820310	Y	-
3850014	-	Y
3850021	Y	-
3850047	Y	-

For numbers that are IN the COSMOS database, but NOT IN the ESS database, check to see if number should be removed from COSMOS or added to the ESS.

For numbers that are IN the ESS database, but NOT IN the COSMOS database, check to see if the number should be put into dial transfer and added to the COSMOS database (with its DMS LEN).

Processing results from the OE/LENs bash

CCS compares the OE associated with each DN that is contained in all the databases involved in the data bash. When the DMS database is involved in this bash CCS produces two reports in one for this bash. One section lists the DNs that had a different OE in each database; the other section lists the DNs that had a different LEN in each database.

The OE bash section compares the COSMOS OE for the DN to the ESS OE for the same DN; the LEN bash section compares the COSMOS-assigned LEN for the DN to the DMS LEN for that same DN.

Here's a segment from the OE/LEN Bash report:

Numbers with Differing Control Groups/OEs/LENs

DN	ESS OE	COSMOS OE	COSMOS LEN	DMS LEN
474-7868	000206114	003122009	no discrepancy	
474-7884	000306010	003323305	no discrepancy	
474-7956	003203006	003323215	no discrepancy	
862-0937	no discrepancy		10410921	10200922
862-1094	no discrepancy		11001308	10300822
862-1495	no discrepancy		11001111	10300922

The message 'No discrepancy' indicates that the OE or LEN match is correct. Examine these DNs, determine the correct OE/LEN number for the DN and update the appropriate databases as required.

Processing the results from the features bash

This bash compares all line features associated with each DN that is contained in all databases involved in the bash.

Here's a segment of the Features Bash report:

Numbers with Differing Features

DATADN	BASE	FEATURES				
746-2325	DMS	-	3WC	CHD	CPU	CFU
	COSMOS	-	-	-	-	-
	ESS	ELN	TWC	CHD	CPU2	CFU
746-2326	DMS	3WC	CHD	CPU	CFU	
	COSMOS	-	-	-	-	
	ESS	TWC	CHD	CPU2	CFU	

In the above segment, the three-way data bash involves the DMS, COSMOS, and ESS. For the DN 764-2325 the DMS database indicates the

presence of the features three-way calling, call hold, call pickup, and call forward universal. In the COSMOS database none of these features are present. In the ESS data base the features essential line, three-way calling, call hold, call pickup, and call forward universal are present. The dash indicates that feature in that column is not present in that database. For example, again with the DN 764-2325, the DMS is missing the ELN feature, and COSMOS is missing all the features noted for that DN.

Check the features that should be assigned to the lines.

Processing the results from the limited features bash

CCS compares the limited features (TouchTone, Essential Line and Ground Start) associated with each DN that is contained in all the databases involved in the bash.

Here's a segment from a Limited Features Bash report:

Numbers with Differing Features

DN	DATABASE	FEATURES	
3850000	COSMOS	-	-
	ESS	GRD	ELN
3850007	COSMOS	-	-
	ESS	TTC	ELN

The dash mark (-) indicates that the feature is not present in the named database. In the above segment, the DN 385-0000 has GRD and ELN features in the ESS database; these features are absent from the COSMOS records for the same DN.

Check the features that should be assigned to the line and update the databases (add or remove features) as required.

Processing the results for the line index bash

CCS compares the class of service associated with lines in all databases by comparing the DMS-100 line attribute index number associated with the line. In the case of lines in the ESS and COSMOS databases, CCS asks the operating company to assign a DMS-100 line index to each unique Line Class Code and/or USOC associated with the line. Those line index numbers reference records in the DMS-100 line attribute index table to specify the class of service for the line in the DMS-100. This is how CCS relates class of service in the ESS and COSMOS to class of service in the DMS-100.

Here's a segment of the Line Index Bash report

Numbers with Differing Line Attribute Index

	DMS			COSMOS		ESS	
DN	Index	LCC	LTG	Index	USOC	Index	LCC
744-0001	100	1FR	10	103	RUQ	100	AFH
744-0002	130	1FR	11	103	RUQ	100	AFH
744-0004	100	1FR	10	103	RUQ	100	AFH
744-0005	100	1FR	10	103	RUQ	100	AFH

In the above segment, the DN 744-0001 has a different class of service indicated by the the different line attribute indexes under each database. The line attribute index is determined by the LCC in the ESS and by the USOC in COSMOS. The translation to a line attribute index is provided by the translation forms provided by the operating company. The DMS indicates a line attribute index of 100, as does ESS, but COSMOS indicates an index of 103. The additional information (LCC, LTG, USOC) is provided to aid in the resolution of the discrepancy.

Check the class of service that should be assigned to this line and update the databases as required.

Processing the results for the hunting bash

CCS compares the series completion, or ‘hunt-to’ number associated with each hunting DN that appears in all databases involved in the bash. This bash reports on any DNs that have different or non-existent hunting numbers in the databases involved in the bash.

Here’s a segment from the Hunting Bash report:

Numbers with Differing Hunting Sequence

DN	in COSMOS	in ESS
3850005	3854562	-
3850181	3850189	3850189
3850192	3850357	3850357
3850198	3862407	3862407

In the above report segment, DN 385-0005 series completes to DN 385-4562 in the COSMOS database, while the same DN in the ESS database has no hunt-to number.

Check the series completion data for these lines and update the appropriate databases as required.

Processing the results of the special billing bash

CCS compares the special billing DN associated with a DN found in each of the databases involved in the bash. The bash reports on those DNs that have different or non-existent special billing numbers in each of the databases.

Here's a segment from the special billing bash report:

Numbers with Differing Special Billing Number

DN	in COSMOS	in ESS
3850003	3850001	-
3854390	3863345	-
3855623	3862213	-

In the above bash report segment, service for DN 385-0003 is billed to DN 385-0001 according to the COSMOS database where the ESS database shows no special billing number for the DN.

Check the special billing information for the line and update the appropriate database as required.

Processing the results for the PIC code and PIC choice bash

CCS compares the Primary InterLATA Carrier (PIC) code assigned to DNs that are found in all databases involved in the bash. The bash reports on those DNs for which **both** the PIC code **and** PIC choice assignments do not match in all databases.

Here's a segment from the PIC code and PIC choice bash report:

Numbers with Differing PIC Codes and/or Choice

DN	in COSMOS		in ESS	
3850000	031	N	031	Y
3850034	-	-	288	Y
3850047	-	-	288	Y
3850055	222	Y	222	N
3850057	-	-	333	Y

In the above bash report segment, the PIC code assigned to DN 385-0000 (031) matches in both the COSMOS and the ESS databases, however, the Equal Access choice for that DN differs.

Check the PIC code information for these lines and update the appropriate databases as required.

Processing the results for the feature attributes bash

Certain features are defined by more than one parameter. Call Forwarding Don't Answer, for example is defined in terms of both the feature (CFDA) and the number that the line forwards to in a don't answer situation. The forwarding number in this case is the feature attribute.

CCS compares feature attributes associated with DNs contained in all databases involved in the bash. The bash report lists the DNs for which the feature attribute data IS NOT the same in all databases.

Here's a segment from the feature attribute bash report:

Numbers with differing feature attributes

DN	FEATURE	in COSMOS	in ESS
3855156	CFB	-	3856391
3856353	CFD	7641265	-
3857685	CFB	-	3859612

In the above segment, the DN 385-5156 call forward busys to 385-6391, according to the ESS data, while the COSMOS database (contains no feature attribute data for the same line. The DN 385-6353 call forward don't answers to 764-1265 in the COSMOS database, while ESS database contains no call forward don't answer line for the same DN.

Check the Call Forwarding Busy and Call Forwarding Don't Answer information for these lines and update the appropriate databases as required.

Processing the results for the multi-line hunt bash

Multi-Line hunt group terminals are identified by a OE or LEN since they share a pilot DN. So all multi-line hunt group lines, and all features that are associated with those lines, are bashed separately from all other types of lines.

Here's a segment from the multi-line hunt bash report:

MLH Groups with Differing Numbers of Members

		DMS			ESS	
Pilot DN	LEN	Group	Term	OE	Group	Term
550-5900	0510224	2148	0000	02116600	0097	0001
550-5900	0510324	2148	0001	02117600	0097	0002
550-5900	0510724	2148	0002	02203600	0097	0003
550-5900	0510924	2148	0003	02205600	0097	0004

550-5900	02206600 0097	0005
550-5900	02213600 0097	0006

In the above segment, MLH group #2148 in the DMS does not have the same number of members as the associated MLH group #0097 in the ESS. The DMS MLH group has 4 terminals while the ESS MLH group has six terminals. Two terminals need to be added to the DMS-100.

For those MLH groups where all of the terminals matched (including hunting sequence) the report continues comparing the features associated with those terminals. The format of reports are similar to the other bash reports described earlier except that the OE or LEN is included on those reports for these multi-line hunt terminals.

Providing conversion data and class of service relationships

After comparing the contents of the database tapes, the CCS department extracts from each tape several data elements that define class of service for the lines in each database. Forms produced by the CCS department show these data, such as Line Class Code, Chart Column, Terminating Major, and Originating Major on the left side of a form; the operating company needs to provide the DMS line attribute index numbers that correspond to each of the identified classes of service. Figure 2-2 and Figure 2-3 show samples of the forms used by CCS to obtain the conversion relationship data for POTS lines; Figure 2-4 shows a sample of the form used to obtain the conversion data for Centrex-type lines; Procedure 3-7 provides instructions for completing the class of service relationship forms.

Procedure 3-7xxx
Providing conversion data to CCS

Step	Action
1	For POTS lines, enter the DMS-100 line attribute index number, global options, and WATS band, if needed, for each of the ESS LCCs and COSMOS USOCs identified on the form. The ESS LCCs will be identified on a separate form from the COSMOS USOCs. The form shows the ESS LCC together with the chart column, originating major and terminating major data associated with the LCC. (See Figure 2-2 and Figure 2-3.)
2	For Centrex type lines, enter the DMS-100 Line Attribute index number, number of dialing digits, Network Class of Service (NCOS), Integrated Business Network (IBN) number, Subgroup number, and global options for each unique set of ESS Centrex data. Centrex data includes LCC, Centrex number (CTX), Central Access Treatment (CAT) code, and Primary InterLATA Carrier (PIC). (See Figure 2-4.)
3	Return the completed forms to the Northern Telecom location performing the CCS activity.
	End

Conversion procedures

This section provides procedures to be followed by the operating company when performing the conversion phase of the office switch cutover. The procedures relate to the following activities:

- providing conversion database tapes to CCS department (Procedure 3-7)
- loading line assignment and line feature data (converted by CCS department) from tape into the DMS switch (Procedure 3-8)
- building RCR and TRC transaction records in the COSMOS database for the office to document changes to the line assignments and line features in the working switch that occur after the conversion tapes are generated (Procedure 3-9).

Providing conversion tapes to CCS department

Procedure 3-8xxx
Creating ESS and COSMOS TMART OP-DT data for conversion

Step	Action
1	Create ESS and COSMOS TMART (OP-DT) data tapes for the office. Procedure 3-1 through Procedure 3-4 provide details on creating the ESS and COSMOS conversion data tapes.[1 2]
2	Set a flag in the COSMOS database for the office to indicate the beginning of the recent changes processing period. Use RCR and TRC transaction records (stored in a COSMOS TED file) to record changes to the ESS occurring after the COSMOS tape is created (see Procedure 3-11).
3	Send the ESS and COSMOS TMART conversion tapes via overnight mail service to the Northern Telecom location performing the CCS activity.
	Notes: **1** The COSMOS TMART tapes used in the conversion process must be generated with the DT (Dial Transfer) option. The DT tape contains both the ESS Office Equipment (OE) numbers and the new DMS-100 Line Equipment Numbers (LENs) for each ESS line. **2** Data tapes for this activity should be created between the close of service order activities on Friday and the start of activities on Monday. Tapes should be shipped via overnight mail on Monday for arrival at Northern Telecom on Tuesday.
	End

Loading lines into the DMS

The next step of the conversion phase involves installing or loading the DMS-100 service orders (servords) created by CCS during the conversion process. The lines can be loaded in either of two ways:

1 For offices with fewer than 5,000 lines, CCS can load the lines over a dialup facility to the switch.

2 For offices with more than 5,000 lines, it is probably more efficient to store the DMS-100 lines onto tape, send the tape to the office, and load the DMO files directly at the switch site.

The following procedures provide instructions on loading the DMS-100 from a tape created by CCS. When the operating company receives the tape from CCS, on-site operating company and/or Northern Telecom installation personnel load the tape contents to the switch via the DMS-resident servord facility.

The contains several files each of which contain servords for establishing DMS-100 line service. Tape contents can be loaded either of two ways (see Figure 2-6):

- Load files directly from tape (Procedure 3-9), or
- Load files from tape to disk volume and use the disconnected users capability to read multiple files at the same time (see Procedure 3-10).

The second method, using disconnected users, is the fastest way to load the servords into the DMS-100.

Loading the DMS-100 lines usually occurs during the week before the K-date for the office. Refer to the CCS Schedule of Services for your office to determine the dates for the line loading activity. (Appendix A shows a sample Schedule of Services.)

Procedure 3-9xxx
Loading individual files from tape

Step	Action
1	Mount and list the tape: **>MOUNT <tape drive number>** **>LIST T <tape drive number>**
2	Activate the servord facility: **>SERVORD**
3	Read files from tape to DMS-100: [1] **>READ <filename 1>** **>READ <filename 2>** **>READ <filename n>**
4	Demount tape after reading all files: **>DEMOUNT T <tape drive number>**
	Notes: **1** For best results, read the Multi-Line Hunt (MLH) files first, followed by the InWATS (INW) files, followed by the remaining IBN, POTS, and line features files.
	End

Procedure 3-10xxx
Loading several files using disconnected users

Step	Action
1	Mount and list the tape: **>MOUNT <tape drive number>** **>LIST T <tape drive number>**
2	Copy tape files to disk volumes: **>COPY <filename> <disk volume A>** **>COPY <filename> <disk volume B>** **>COPY <filename> < disk volume A>** **>COPY <filename> <disk volume B>**
3	Create command files for each disconnected user: a. Enter the EDIT/INPUT mode: **>EDIT <command file name>** EDIT: INPUT b. Enter the following commands into the command file:[1] **>DSKUT** **>LISTVOL <disk volume A> all** **>LISTVOL <disk volume B> all** **>QUIT** **>SERVORD** **>READ <filename 1>** **>READ <filename 2>** **>READ <filename n>** c. After entering the last filename to read from the particular disk volume, hit <RETURN> to exit the INPUT mode. d. Exit the EDIT mode and store the file: **>FILE SFDEV**
4	Repeat step 3 as required to create command files for each disconnected use you intend to use.
	End

Procedure 3-10xxx
Loading several files using disconnected users (continued)

Step	Action
5	Login as disconnected user and give command file name to execute the command file: **>LOGIN <username> <password> <command file name> <SINK>** This will begin loading the servords from each file listed in the command file.[2]
6	Repeat step 5 for each disconnected user you intend to login.
	Notes: **1** For best results, read the MLH (Multi-Line Hunt) files first, followed by the INW (InWATS) files, followed by the remaining IBN, POTS, and features files. **2** To view the servord loading messages, specify an output device other than SINK, such as PRT0, to send results to the printer.
	End

Recording recent change activity in COSMOS database

After the replacement DMS-100 switch is loaded and prior to its in-service date, changes are likely to occur to the line assignments and line features in the on-line switch. Operating company COSMOS personnel record changes to the ESS line assignment and line features by building RCR and TRC transaction records in the COSMOS database for the ESS switch according to the steps noted in Procedure 3-11.

Procedure 3-11xxx
Supplying recent changes data and COSMOS access requirements

Step	Action
1	Enter COSMOS RCR and TRC transaction records into the COSMOS Wire Center for the office under conversion to keep the newly loaded DMS-100 up-to-date with changes to the line assignments in the on-line ESS switch. RCR and TRC transaction records should be kept in separate files. Since there may be more than one RCR or TRC file created on a particular day, depending on the level of change activity, the following file naming protocol should be observed: **Naming RCR files**: RCR<date><letter> where: date = month#, day# letter = a,b,c,... depending on whether file is first, second, etc., created on that day. **Example**: RCR1210A and RCR1210B identify two RCR files created on December 10. **Naming TRC files**: TRC<date><letter> where: date = month#, day# letter = a,b,c,... depending on whether file is first, second, etc., created on that day. **Example**: TRC1210A and TRC1210B identify two TRC files created on December 10.
	End

Procedure 3-11xxx
Supplying recent changes data and COSMOS access requirements
(continued)

Step	Action
2	Provide CCS personnel with access information to the TED files in the appropriate COSMOS Wire Center for the office under conversion. COSMOS access requirements:[1] ▪ Dialup number and sequence information as required. ▪ Logon password. ▪ Two character wire center number. ▪ Permission to perform TED editor commands.
3	Arrange with CCS personnel to process RCR and TRC records on a regular basis throughout the recent changes interval for the office.[2]
	Notes: **1** The access codes and command execution permissions granted by the COSMOS database administrator to CCS personnel should allow CCS personnel to extract (copy) only the specified TRC and RCR records needed for recent changes processing; no additional access or permissions are required. **2** The recent changes processing period for CCS usually terminates when the final ESS tape is created prior to the in-service date. Therefore, the operating company shall be responsible for processing any changes to the working switch that occur after this tape is created.
	End

Post-conversion procedures

This section provides procedures to be followed by the operating company when performing the post-conversion phase of the office switch cutover. The procedures relate to the following operating company responsibilities:

- providing post-conversion database tapes to CCS department (Procedure 3-12)
- providing support for board-to-board testing cycles (Procedure 3-13)
- continuing to build RCR and TRC transaction records in the COSMOS database for the office to document changes to the line assignments and line features in the working switch that occur after the conversion tapes are generated
- providing support to CCS department, if necessary, for processing customer speed calling lists
- providing support to CCS department for processing customer -programmed call forwarding numbers.

Providing post-conversion database tapes to CCS department

After correcting the ESS and COSMOS databases, the operating company needs to create the ESS and COSMOS database tapes that will be used by the CCS department to perform post-conversion data bashes.
Procedure 3-12 provides the instructions for creating and providing the conversion tapes.

Procedure 3-12xxx
Creating and providing post-conversion database tapes

Step	Action
1	Create ESS and COSMOS TMART (OP-DT) data tapes for the office; use the DMS-100 utility DUMPTAB to create a DMS-100 data tape. [1] Procedure 3-1, Procedure 3-3, Procedure 3-4, and Procedure 3-13 provide instructions for creating data tapes for #1AESS/#1ESS, #3ESS, COSMOS, and DMS-100 databases, respectively.
2	If necessary, compile a list of any telephone numbers to be protected from removal by CCS personnel during data bash results processing by CCS. (When CCS analyzes bash results, any number not contained in **both** COSMOS and the working ESS switch will be removed from the DMS unless the number appears on this list of protected numbers.)
3	Send the data tapes and the protected numbers list via overnight mail service to the Northern Telecom location performing the CCS activity. Contact your customer service representative for the address.[2]
4	When CCS completes the data analysis activity and notifies the operating company that bash results are ready, the operating company can either use a dialup facility to retrieve the bash results from the CCS computer, or CCS can mail the bash results to the operating company. Procedure 3-6 provides instructions for using a dialup facility to retrieve bash results from the CCS system.
	Notes: **1** Data tapes for this activity should be created between the close of service order activities on Friday and the start of activities on Monday. Tapes should be shipped via overnight mail on Monday for arrival at Northern Telecom on Tuesday. **2** When providing tapes to be used in the last data bash prior to the in-service date, send tapes via counter-to-counter air express service on Monday morning such that tapes will arrive at CCS by noon of the same day. See the CCS Cutover Schedule for your office to determine the date of the last data bash prior to in-service.
	End

Procedures for creating DMS-100 data tapes

Line assignment and line feature data contained in DMS-100 data tables (DN, LNINV, LENLINES, LENFEAT, IBNLINES, IBNFEAT, HUNTMEM, etc.) can be extracted using the DUMPTAB DMS-100 table dumping utility.

Pulling table data from the DMS-100 involves the following activities:

1 Verifying or loading the DUMPTAB software into the DMS (see Procedure 3-13).

2 Creating and loading the TABDUMP command file into the DMS (see Procedure 3-14).

3 Preparing the tape to store the DUMPTAB program output (see Procedure 3-15).

4 Executing the TABDUMP command file to build DUMPTAB tape (see Procedure 3-16).

CCS processing personnel should coordinate DMS-100 table dumping activity with on-site operating company/Northern Telecom installation and cutover support personnel.

Procedure 3-13xxx
Verifying and loading DUMPTAB software in DMS-100

Step	Action
The DUMPTAB program writes data contained in DMS-100 tables to magnetic tape in the DUMPTAB format required for CCS processing. CCS should verify that the DUMPTAB software exists in the switch. If DUMPTAB is not in the switch, Northern Telecom must arrange to load it.	

1	Verify DUMPTAB program resides in DMS-100:
	
	>DUMPTAB
	
	If the DUMPTAB utility is present, the following message will be displayed:
	
	`Enter: <HEAD TABLE NAME> [<SUBTABLE>] [<SPECIFIC SUBT-ABLE>]`
	
	If this message appears, quit the DUMPTAB program and proceed to Creating and Loading TABDUMP Command File (Procedure 3-14):
	
	>ABORT
	
	If the DUMPTAB utility is NOT resident in switch memory, the following message will be displayed:
	
	`Undefined command 'DUMPTAB'.`
	
	In this event, you need to load the DUMPTAB software according to Step 2 of this procedure.

	End

Procedure 3-13xxx
Verifying and loading DUMPTAB software in DMS-100 (continued)

Step	Action
2	Load the DUMPTAB software: a. Mount and list the commissioning tape that accompanied the initial load from Northern Telecom: **>MOUNT Tx** where x = tape drive number **>LIST Tx** where x = tape drive number Among other files, this tape should contain a control file called DBDRSUB$FC and approximately 13 other associated files with names ending in $LD. b. Copy this control file to SFDEV and then read it: **>COPY DBDRSUB$FC SFDEV** **>READ DBDRSUB$FC** The READ command loads the DUMPTAB software.[1] c. Verify that DUMPTAB program is responding properly: **>DUMPTAB** If the software was loaded successfully, the following message will be displayed: `Enter: <HEAD TABLE NAME> [<SUBTABLE>] [<SPECIFIC SUBTABLE>] . . .` Quit the DUMPTAB program and proceed to Creating and Loading TABDUMP Command File (Procedure 3-14): **>ABORT** If this message does not appear, call the CCS contact person at Northern Telecom.

Notes:
1 The DMS-100 may contain some modules from a previous DUMPTAB load. In this case, the resulting LOADER ERROR messages should be ignored.

End

Procedure 3-14xxx
Creating and loading TABDUMP command file

Step	Action
Extracting each of the individual DMS tables needed by CCS requires a separate DUMPTAB command for each table. The TABDUMP command file provides a way to execute each of the individual DUMPTAB commands by issuing a single command. The TABDUMP command file consists of individual DUMPTAB commands linked together to automate the table dumping process. The TABDUMP command file can be created by CCS personnel on the CCS system, using the resident XENIX vi editor, or the file can be created in the DMS-100 itself, using the resident EDIT and INPUT facilities. In either case, the contents of the file will be identical.	
1	a. Enter the EDIT/INPUT mode: **>EDIT TABDUMP** EDIT: INPUT
2	Create the TABDUMP Command File : DUMPTAB LINEATTR EXTERNAL Tx TOTAL INP DUMPTAB DN EXTERNAL Tx TOTAL INP DUMPTAB LENLINES EXTERNAL Tx TOTAL INP DUMPTAB LENFEAT EXTERNAL Tx TOTAL INP DUMPTAB CFW EXTERNAL Tx TOTAL INP DUMPTAB IBNLINES EXTERNAL Tx TOTAL INP DUMPTAB IBNFEAT EXTERNAL Tx TOTAL INP DUMPTAB HUNTGRP EXTERNAL Tx TOTAL INP DUMPTAB HUNTMEM EXTERNAL Tx TOTAL INP DUMPTAB LNINV EXTERNAL Tx TOTAL INP DUMPTAB SCUFEAT EXTERNAL Tx TOTAL INP DUMPTAB WRDN EXTERNAL Tx TOTAL INP where x = tape drive number (0, 1, 2, ...)
3	Quit the editor and save the file on SFDEV: **>FILE SFDEV**
	End

Procedure 3-15xxx
Preparing the tape to store the DUMPTAB program output

Step	Action
1	**>MOUNT x FORMAT <tapename>** where: x= tape drive number <tapename> = 6-character office name
	End

Procedure 3-16xxx
Executing the TABDUMP command file

Step	Action
After creating the TABDUMP command file and preparing the tape, execute the TABDUMP command file to write the DMS tables to tape.	
1	Initiate the dump procedure: **>READ TABDUMP**[1]
2	When the dump is complete, demount the tape: **>DEMOUNT Tx** <where x = tape drive number>
3	Send this tape to the Northern Telecom location performing the CCS service.
	Notes: **1** The tape should start moving, indicating the table dump is in progress.
	End

Processing the post-conversion data bash discrepancy reports

This section provides guidelines to the operating company on using the post-conversion data bash reports produced by the CCS department.

Operating company responsibilities for handling bash errors

The operating company is responsible for investigating and correcting as required the following types of database discrepancies:

- DNs that are NOT contained in the ESS but are contained in COSMOS
- DNs that are NOT contained in COSMOS but are contained in the ESS
- lines with ground start in the ESS but loop start in the DMS
- lines with loop start in the ESS but ground start in the DMS

- line feature discrepancies for lines that are contained in both the ESS and COSMOS.

If a DN is IN the ESS database, but not in the COSMOS database, the operating company needs to determine whether this DN should be added to COSMOS (in dial transfer) and assigned a LEN so that CCS can load the line into the DMS.

If a DN is IN COSMOS, but NOT IN the ESS, the operating company should determine whether the DN needs to be removed from COSMOS.

For lines that are ground start lines in the ESS but are loaded in the DMS as loop start lines, the operating company needs to update the DMS Line Inventory table (LNINV) to show the ground start characteristic, and, if necessary, change the circuit pack type and/or circuit pack switch settings to support the ground start characteristic.

For lines that are loop start lines in the ESS but are loaded in the DMS as ground start lines, the operating company needs to update the DMS Line Inventory table (LNINV) to show the loop start characteristic, and, if necessary, change the circuit pack type and/or circuit pack switch settings to support the loop start characteristic.

For lines that are in both ESS and COSMOS databases but with differing feature information, series completion numbers, special billing numbers, PIC codes and equal access choice, etc., the operating company needs to check the data for the lines and update the appropriate database as necessary.

For post-conversion bash results and like the pre-conversion bash handling, the operating company need only be concerned with addressing discrepancies between the ESS and COSMOS databases. The bash reports should serve as a guide for updating either of these databases as required. With the exception of the ground start/loop start discrepancies (which cannot be resolved via service order commands), t**he CCS department will handle all the identified discrepancies between the ESS and the DMS or between COSMOS and the DMS.**

CCS department responsibilities for handling bash errors

The CCS department is responsible for investigating and correcting as required the following types of database discrepancies:

- lines in the ESS that have different or missing features in the DMS
- lines in the DMS that have different or missing features in the ESS
- numbers in the DMS with missing PIC codes
- numbers in the DMS that have a different LEN than in the COSMOS database
- numbers in the ESS that are missing from the DMS

- numbers in COSMOS that are missing from the DMS
- numbers in the DMS that are missing from the ESS
- numbers in the DMS that are missing from COSMOS
- lines that have a different class of service in the DMS than in the ESS (as indicated by a different DMS line index numbers)

For lines in the ESS that have different or missing features in the DMS, the CCS department takes the appropriate measures to update the line features (change or add) in the DMS to match the feature set for the line in the ESS.

For lines in the DMS that have different or missing features in the ESS, the CCS department takes the appropriate measures to update the line features (change or remove) in the DMS to match the feature set in the ESS.

For numbers in the DMS that have no PIC codes, the CCS department first checks the line in the ESS for a PIC code and applies it to the line in the DMS. If the ESS has no PIC information for the line, CCS checks the COSMOS record for the line and applies the PIC code if found. If neither the ESS nor COSMOS has definitive PIC code information for the line, the CCS department assigns the NILC PIC code to the line in the DMS. This implies that the subscriber can freely choose any long distance carrier.

For lines in the DMS that have a different LEN than the LEN contained in the COSMOS database for the line, the CCS department will change the LEN to match the LEN in the latest COSMOS database for the line.

For lines in the ESS that are missing from the DMS, the CCS department attempts to find the LEN for the line in the COSMOS database; if no LEN can be found, CCS will advise the operating company; otherwise, if COSMOS contains the dial transfer information for the line, CCS will load the line into the DMS using the COSMOS LEN and the ESS features for the line.

For numbers in COSMOS that are missing from the DMS, the CCS department checks the ESS database for the line. If the line is IN the ESS, CCS will add the line to the DMS.

For numbers in the DMS that are missing from the ESS, CCS will remove the line from the DMS unless the number appears in either COSMOS or on a list of ‘protected’ numbers provided by the operating company.

For numbers in the DMS that are missing from COSMOS, CCS checks to see if the line is IN the ESS; if not in the ESS, CCS removes the line from the DMS.

For lines that have a different class of service in the DMS than in the ESS, the CCS department takes the appropriate measures to update the class of

service information in the DMS to match the class of service data for the line in the ESS. (For POTS lines, class of service is defined by the LCC and Line Treatment Group in the DMS; for Centrex-type lines, class of service is defined by the IBN group, NCOS, and subgroup number.)

In general, CCS endeavors to load the lines in the DMS such that they match the lines in the ESS with respect to features, line characteristics, and class of service.

Providing support for board-to-board testing cycles

For board-to-board testing, Northern Telecom Installation runs the tests, while CCS processes the results, and generates the trouble tickets that describe the test failures. Since the board-to-board test failures invariably involve hardware problems, the operating company or Northern Telecom Installation is responsible for resolving the problems. The operating company uses the trouble tickets to correct and document the trouble at the switch site.

Procedure 3-17 provides the guidelines to be followed by the operating company in support of the CCS department test cycle efforts.

Procedure 3-17xxx
Providing support for board-to-board testing

Step	Action
1	Provide one ESS no-test trunk and one 2X83 board-to-board trunk in the DMS for each board-to-board unit.
2	Provide CCS personnel with access to COSMOS and to the DMS-100 to process test results (COSMOS). **COSMOS access requirements**: ▪ Dialup number and sequence information as required. ▪ Logon password. ▪ Two character wire center number. ▪ Permission to perform TED editor commands. **DMS-100 Access Requirements**: ▪ Dialup number ▪ Logon password for DMS switch. ▪ Dedicated disk with ample space allocated.
3	When CCS completes the trouble ticket generation and notifies the operating company that trouble tickets are ready, the operating company can either use a dialup facility to retrieve the tickets from the CCS computer, or CCS can mail the tickets to the operating company. Procedure 3-6 provides instructions on retrieving trouble tickets from a dialup facility.
	End

Providing support for speed calling list processing

The CCS department gets the speed calling list data form the last ESS tape generated prior to the cutover. CCS processes these data and loads the list data to the appropriate tables in the DMS.

Procedure 3-18 provides the instructions for supporting the CCS department during the speed calling list processing and loading efforts.

Procedure 3-18xxx
Supporting speed calling list processing

Step	Action
1	Provide to CCS personnel SCC access information for the purpose of retrieving the call forwarding numbers file on the day of the cutover. **SCC Access Requirements for SC Lists and CFW Numbers**:[1] ▪ Dial-up number. ▪ Logon password and logon procedure as permitted.
	Notes: **1** If no SCC access is allowed, CCS will contact the operating company to establish an alternate method for obtaining SC lists and CFW numbers.
	End

Providing support for call forwarding numbers processing

The CCS department gets the latest, user-programmed call forwarding numbers from the local Switching Control Center (SCC) a few hours before the actual cutover. CCS processes the numbers and loads the call forwarding information to the appropriate tables in the DMS approximately 1-2 hours prior to cutover.

Procedure 3-19 provides the instructions for supporting the CCS department during the call forwarding numbers processing and loading efforts.

Procedure 3-19xxx
Supporting call forwarding numbers processing

Step	Action
1	Provide to CCS personnel SCC access information for the purpose of retrieving the call forwarding numbers file on the day of the cutover. **SCC Access Requirements for SC Lists and CFW Numbers**:[1] ▪ Dial-up number. ▪ Logon password and logon procedure as permitted.
	Notes: **1** If no SCC access is allowed, CCS will contact the operating company to establish an alternate method for obtaining SC lists and CFW numbers.
	End

Appendix A: **Schedule of services**

This appendix shows an example CCS Schedule of Services for CCS processing. The schedule indicates the activities to be performed for the office, the dates for performing the activities (expressed in terms of K-date and office in-service (IS) date), and where appropriate, a reference to this Customer Method of Procedure, where further details on the activity can be found.

CCS SCHEDULE OF SERVICES for CCS Processing

Office Name: SAMPLE Date: 9-25-89

CCS Cutover Activity	Date	Customer MOP Ref.
☐ Pre-Conversion Analysis		
☐ Provide database tapes to CCS department	K-date - 6 wks	Procedure 3-1 through Procedure 3-5
☐ 1AESS		
☐ 1ESS		
☐ 2ESS		
☐ 3ESS		
☐ COSMOS TMART		
☐ CRIS		
☐ Other (specify)		
☐ Obtain CCS pre-conversion analysis results (3-4 days after CCS receives tapes)	K-date - 5 wks	Procedure 3-6
☐ Conversion Data Relationships		
☐ Use forms provided by CCS and provide the following data relationships:	K-date - 5 wks	Procedure 3-7
☐ COSMOS USOC-to-DMS relationships (POTS)		
☐ ESS LCC-to-DMS relationships (POTS)		
☐ ESS CTX-to-DMS IBN relationships		
☐ Send completed forms to CCS	K-date - 3 wks	
☐ Conversion		
☐ Provide conversion tapes to CCS department	K-date - 2 wks	Procedure 3-8
☐ 1AESS		
☐ 1ESS		
☐ 2ESS		
☐ 3ESS		
☐ COSMOS TMART OP-DT		
☐ CRIS		
☐ Other (specify)		
☐ Begin building RCR and TRC files in COSMOS TED facility	K-date - 2 wks	Procedure 3-11

CCS SCHEDULE OF SERVICES for CCS Processing

Office Name: SAMPLE Date: 9-25-89

CCS Cutover Activity	Date	Customer MOP Ref.
☐ Load DMS-100 Lines		
☐ Receive DMS-100 load tape from CCS	K-date - 1wk	Procedure 3-9/ Procedure 3-10 Procedure 3-13
☐ Dump servord from load tape to DMS	K-date - 1wk	
☐ Create DMS-100 DUMPTAB tape after load and send to NTI via overnight mail	K-date - 1wk	
☐ Recent Changes		
☐ Continue storing RCR and TRC change records to COSMOS TED facility	K-date - 2 wks through IS-1 wk	Procedure 3-11
☐ 1st Post-Conversion Data Bash		
☐ Provide database tapes to CCS department	K-date +1wk	Procedure 3-12
☐ DMS-100 DUMPTAB		
☐ 1AESS		
☐ 1ESS		
☐ 2ESS		
☐ 3ESS		
☐ COSMOS TMART OP-DT		
☐ CRIS		
☐ Other (specify)		
☐ Obtain bash results	K-date + 2 wks	Procedure 3-6
☐ 2nd Post-Conversion Data Bash		
☐ Provide database tapes to CCS department	K-date + 4 wks	Procedure 3-12
☐ DMS-100 DUMPTAB		
☐ 1AESS		
☐ 1ESS		
☐ 2ESS		
☐ 3ESS		
☐ COSMOS TMART OP-DT		
☐ CRIS		
☐ Other (specify)		
☐ Obtain bash results	K-date + 5 wks	Procedure 3-6

CCS SCHEDULE OF SERVICES for CCS Processing

Office Name: SAMPLE Date: 9-25-89

CCS Cutover Activity	Date	Customer MOP Ref.
☐ 3rd Post-Conversion Data Bash ☐ Provide database tapes to CCS department (use counter-to-counter air express ☐ DMS-100 DUMPTAB ☐ 1AESS ☐ 1ESS ☐ 2ESS ☐ 3ESS ☐ COSMOS TMART OP-DT ☐ CRIS ☐ Other (specify) ☐ Obtain bash results	K-date + 7 wks	Procedure 3-12 Procedure 3-6
☐ 1st Board-to-Board T est Cycle ☐ Run ABBT; store failure file in DMS ☐ Obtain test results and trouble tickets from CCS department	K-date +1wk	Procedure 3-17
☐ 2nd Board-to-Board T est Cycle ☐ Run ABBT; store failure file in DMS ☐ Obtain test results and trouble tickets from CCS department	K-date +3 wks	Procedure 3-17
☐ 3rd Board-to-Board T est Cycle ☐ Run ABBT; store failure file in DMS ☐ Obtain test results and trouble tickets from CCS department	K-date + 5 wks	Procedure 3-17
☐ 4th Board-to-Board T est Cycle ☐ Run ABBT; store failure file in DMS ☐ Obtain test results and trouble tickets from CCS department	K-date + 6 wks	Procedure 3-17
☐ 5th Board-to-Board T est Cycle ☐ Run ABBT; store failure file in DMS ☐ Obtain test results and trouble tickets from CCS department	K-date + 7 wks	Procedure 3-17

CCS SCHEDULE OF SERVICES for CCS Processing

Office Name: SAMPLE Date: 9-25-89

CCS Cutover Activity	Date	Customer MOP Ref.
☐ Speed Calling List		
☐ Extract speed calling list data from the last ESS tape (#1ESS, #1AESS, and #2AESS	K-date + 7 wks	Procedure 3-18
☐ Extract speed calling list data from switch via SCC and place data in file (#2ESS and #3ESS)		
☐ CCS loads speed calling list data to switch	IS - 1 wk	
☐ Call Forwarding Numbers		Procedure 3-19
☐ Pull call forwarding numbers from switch and place in SCC file for trial run	IS - 2 wks	
☐ Put call forwarding numbers from switch and place in SCC file for actual loading in DMS-100	IS - 3/4 hours	
☐ CCS loads call forwarding data into DMS-100	IS - 2 hours	
☐ In-Service		

List of terms

ABBT

Automatic Board-to-Board Testing; DMS-100 software package used to check the wiring between each line card in the new DMS-100 and its cross-connections to the existing switch at the main distributing frame (MDF); also called board-to-board testing.

BOC

Bell Operating Company.

BPI

Bits per inch; a measurement that indicates the density of data on magnetic tape.

CCS

Cutover Conversion Services; Northern Telecom department that provides complete data analysis and data processing services associated with central office switching system conversions.

Central office

A switching office arranged for terminating subscriber lines and provided with switching equipment and trunks for establishing connections to and from other switching offices.

Centrex

Centralized PBX; a service that provides a business telephone subscriber with Direct Inward Dialing to extensions on the same system and Direct Outward Dialing from all extensions. Centrex switching equipment is normally located at the central office, but may be located on the operating company client's premises.

Chart class column

ESS data element used for screening calls with respect to class of service.

Chart column expansion data

The Line Class Code (LCC), originating major, and terminating major values associated with a given chart class column number; defines the class of service for a subscriber line.

Control group

An alphanumeric value, usually the first character of the ESS Operating Equipment (OE) number; indicates whether the line is from a remote switch, or RSC, or from the host (central) office.

Conversion

The translating of line assignments and line feature data from an existing on-line, central office switch for loading into a replacement central office switch (e.g., ESS-to-DMS-100 conversion).

COSMIC

A modular distributing frame that uses software programs and the short jumper concept to cross-connect the line equipment to the subscriber cable pair.

COSMOS

Computer System for Main Frame Operations; database used for storing central office switch subscriber line assignment, line feature, and office equipment (hardware) data.

COT

Central Office Terminal.

CRIS

Customer Records Information System; central office switch database used primarily for maintaining subscriber billing information.

Crossbar

An electromechanical switching machine utilizing a relay mechanism with horizontal and vertical input lines (usually 10 by 20), using a contact matrix to connect any vertical to any horizontal.

Cutover

Process by which telephone switching service is removed from one switching system and transferred to another; occurs shortly after the conversion process is successfully completed.

Dial transfer

Process by which line assignment and line feature database information from one switch is updated to reflect its reassignment in another central office switch.

Dialup

Device consisting of telecommunications hardware and software that enables data to be sent and received over telephone lines between two or more computer systems.

Distributing frame

A structure with terminations for connecting permanent wiring in such a manner that interconnections may be readily achieved by means of cross-connecting wires.

DMS

Digital Multiplexing System; a Northern Telecom family of digital public switching equipment.

DN

Directory Number.

DS1

The 8-bit, 24-channel, 1.544 Mb/s digital signalling format as used in the DMS-100 family.

DSX

Digital Span Cross-connect

Dumptab

DMS-100 software utility used for dumping, or writing, DMS-100 line assignment and line feature data to 9-track magnetic tape.

ESS

Electronic Switching System; an AT&T family of digital public switching equipment.

Global option

A characteristic of subscriber line service that is implicitly assigned through the class of service associated with the line.

Grooming

The process by which either the existing, on-line central office switch, or the replacement switch (or both) is prepared for a cutover in a half-tapping application; grooming helps assure that the transfer of line service from one switch to another is performed according to particular engineering and provisioning rules related to line service spread, traffic, and realtime issues.

Ground start

A method of signalling between two machines where one machine grounds one side of the line and the other machine detects the presence of the ground.

Half-tap

A switch installation configuration by which customer lines appear on both the existing and the replacement central office switching systems; at cutover, the lines to the old switch are disconnected and the replacement switch then assumes the central office switching duties.

IBN

Integrated Business Network; a special DMS-business services package that uses the data handling capabilities of a DMS-100 family office to provide a centralized telephone exchange service; many optional features are available.

In-service date

The date when the replacement central office switch assumes the switching functions for the office.

K-date

The date on which Northern Telecom completes all installation-related activities and turns the DMS switch over to the operating company.

LATA

Local Area Transport Area; indicates the region served by a central office switching facility.

LCC

Line Class Code; code used to specify the class of service associated with a given subscriber line.

LCE

Line Concentrating Equipment

LCM

Line Concentrator Module

LEN

Line Equipment Number; a seven-digit function reference used to identify line circuits in the DMS-100.

Line attribute index

Index number to the line attribute (LINEATTR) index table in the DMS-100; points to a collection of data elements which define a particular class of service for a subscriber line.

Line feature

A characteristic, or capability that can be assigned either in hardware or through software data tables to a subscriber's telephone line to provide any of the available telephone switching services (e.g., conference calling, call waiting, call forwarding, etc.).

Loop start

The usual method of signalling an off-hook or line seizure, where one end closes the loop and the resulting current flow is detected by the switch at the other end.

LSG

Line SubGroup; also called a drawer; contains line cards.

LTG

Line Treatment Group.

MADN

Multiple Appearance Directory Number.

MDC

Meridian Digital Centrex; DMS-100 central office switch-based PBX services.

MDF

Main Distributing Frame; a frame containing terminal blocks where cables from outside plant and office equipment are terminated. Outside plant equipment is terminated on vertical rows of blocks and office equipment on horizontal rows. Cross-connection flexibility and organization is provided by jumper pairs between horizontal and vertical terminal blocks.

NNX

The telephone switching exchange designation; the three digits of the telephone number following the area code and preceding the last four digits of the DN.

No-test trunk

ESS resident metallic test access used during board-to-board testing between the new DMS-100 switch and the existing, on-line ESS switch.

ODA

Office Data Assembler; data format used to extract line assignment and line feature data from #2ESS and #3ESS switches.

OE

Operating Equipment; identifies the subscriber line termination at the ESS central office switch.

Operating company

The owner/operator of central office switching equipment.

Originating major class

ESS data element (part of the chart class column expansion data) that specifies the call processing treatment for originating calls.

PABX or PBX

Private (automatic) branch telephone exchange system (either stand-alone or central office-based) providing telephone switching in an office or building.

PIC

Primary InterLATA Carrier.

POTS

Plain Old Telephone Service.

RCR

Recent Change Report; a type of record created in the COSMOS database to remove service for a subscriber line.

Recent change

A record that specifies a change of service (addition, deletion, modification, etc.) for a given subscriber line.

RSC

Remote Switching Center; provides facilities for interfacing with a large number of analog lines and/or digital trunking at a remote location.

SCC

Switching Control Center.

Servord

Service Order (DMS-100).

Sitename

The designation for the location of the switching equipment.

SLC96

Subscriber Line Concentrator-96.

Step switch

An electromechanical telephone switching system in which the switches are controlled directly by digits dialed by the calling party.

Stored program controlled switch (SPC)

A telephone switching system in which switching and call processing functions are implemented through software contained (stored) in switch memory.

Tabdump

Command file that contains a series of DMS-100 DUMPTAB table dumping commands.

TDA

Translation Data Assembler; data format used in the extraction of line assignment and line feature data from #1AESS and #1ESS AT&T switches.

Terminating major

ESS data element (part of the chart class column expansion data) that specifies the call processing treatment for terminating calls.

TMART

Transfer Master Record Tape.

TN

Telephone Number.

TRC

Transfer Recent Change; a type of record created in the COSMOS database to modify service for a subscriber line.

Trouble ticket

A document that details the board-to-board test failure record for a given line.

USOC

Universal Service Order Code.

DMS-100 Family

Cutover Conversion Services

Customer Method of Procedure

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