

## 1. INTRODUCTION

### 1.1 PURPOSE

The 5ESS<sup>®</sup> Switch Input Messages document describes the input messages (IMs) available for use on the 5ESS<sup>®</sup> switch input channels. This document is a reference guide for 5ESS<sup>®</sup> switch support personnel. This document is available in electronic media only.

The messages in this document and its updates represent complete documentation for the 5E14 and later software releases.

The 5ESS<sup>®</sup> switch IMs are used to control, maintain, and monitor the switching system, including the processors, peripherals, and other software. For example, the messages can direct the system to:

- Execute diagnostic and exercise programs and report the results.
- Perform tests and report the results.
- Report the status of various subsystems.
- Report traffic information.
- Enter translation information into memory.
- Restore units to service or remove units from service.

Because of the many available options, some IMs are complex. Before using these particular messages, become familiar with conventions used in this document to describe them (refer to the User Guidelines section).

Some messages may adversely affect service. These messages show a **WARNING** appearing opposite the key block. Use these messages only during periods of light traffic. Before using one of these messages, read thoroughly the manual page containing the message description.

#### 1.1.1 UPDATE INFORMATION

This document is being updated to include documentation for the 5E17(1) software release of the 5ESS<sup>®</sup> switch. It also includes numerous enhancements AND responses to customer requests for more information.

The following messages/appendixes have been updated:

```
ALW:FAC-C
CFR:SPRMEM-E
EXC:PM-D
INH:FAC-C
INIT:FAC-C
OP:FAC-C
OP:ST-GQPHLNK
OP:ST-GQPHPIPE
OP:ST-SERV
RMV:GQPHPIPE
RST:GQPHPIPE
ST:NIPMP-E
SW:SERV
TRC:UTIL-C
TRC:UTIL-D
TRC:UTIL-E
TST:PATH-C
```

#### 1.1.1.1 SUPPORTED SOFTWARE RELEASES

In accordance with the 5ESS<sup>®</sup> Switch Software Support Plan, the 5E13 software release is rated Discontinued Availability (DA) as of August 30, 2002. The information supporting 5E13 and earlier is being removed over time, instead of concurrently, from all documentation.

If you are supporting offices that use a software release prior to 5E14 and you have a need for the information that is being removed, retain the associated pages as they are removed from the paper documents, or retain the earlier copy of the CD-ROM.

The purpose of this documentation is to facilitate early dissemination of information. Its contents are subject to change pursuant to the general non-disclosure agreements between Lucent Technologies and 5ESS<sup>®</sup> switch owners for the purpose of planning. To the best of Lucent Technologies's knowledge, the information contained in this document is accurate and complete as of the date of publication. HOWEVER, LUCENT TECHNOLOGIES EXPRESSLY DISCLAIMS ANY WARRANTY AS TO ACCURACY OR COMPLETENESS NOR DOES LUCENT TECHNOLOGIES ASSUME ANY RESPONSIBILITY FOR THE USE OF THE INFORMATION BY OTHERS. Lucent Technologies reserves the right to change or delete any portions of the document or to add information in the future.

### 1.1.1.2 TERMINOLOGY

#### 1.1.1.2.1 Communication Module Name Change

Global Messaging Server (GMS) is the official name of the communication module, model 3 (CM3) hardware. Where the term GMS may be expected in software-influenced items such as input and output messages, master control center screens, and recent change/verify screens, the term CM3 may be found until such time as the term is changed in the software code.

#### 1.1.1.2.2 Bellcore/Telcordia Name Change

As of March 18, 1999, Bellcore officially changed its name to Telcordia Technologies. Not all pages of this document are being reissued to reflect this change; instead, the pages will be reissued over time, as technical and other changes are required. Customers on standing order for this document may see that, on previous-issue pages, the Bellcore name is still exclusively used.

Customers receiving new orders for this document will see the Telcordia Technologies name used as appropriate throughout the document, and the Bellcore name used only to identify items that were produced under the Bellcore name. Exceptions may exist in software-influenced elements such as input/output messages, master control center screens, and recent change/verify screens. These elements will not be changed in this document until such time as they are changed in the software code. Document updates will not be made specifically to remove historical references to Bellcore.

#### 1.1.1.2.3 5ESS<sup>®</sup>-2000 Switch Name Change

This 5ESS<sup>®</sup> switch document may contain references to the 5ESS<sup>®</sup> switch, the 5ESS-2000 switch, and the 5ESS<sup>®</sup> AnyMedia<sup>®</sup> Switch. The official name of the product has been changed back to the 5ESS<sup>®</sup> switch. The documentation will not be totally reissued to change these references. Instead, the changes will be made over time, as technical changes to the document are required. In the interim, assume that any reference to the 5ESS-2000 switch or the 5ESS<sup>®</sup> AnyMedia<sup>®</sup> Switch is also applicable to the 5ESS<sup>®</sup> switch. It should be noted that this name change may not have been carried forward into software-influenced items such as input and output messages, master control center screens, and recent change/verify screens.

#### 1.1.1.2.4 Document Specific Terminology

National ISDN is an evolving platform in which new features will continue to be introduced for new revenue opportunities, improved operational efficiencies, and for support of specific applications. NI 1, NI 2, and NI 3

represent specific features as documented in Bellcore SRs 1937, 2120, and 2457. The industry is migrating to an additional terminology to more specifically denote the availability of National ISDN features: NI 95, NI 96, etc. A feature is included in a specific version (such as, NI 96) if it is available by the switch vendors by the first quarter of the year.

As a result of the World Telecommunications Standardization Conference held March 1-12, 1993, the International Telegraph and Telephone Consultative Committee (CCITT), no longer exists as an organization under the International Telecommunication Union (ITU). According to the ITU, the CCITT is now referred to as the International Telecommunication Union - Telecommunication Standardization Sector (ITU-TS).

For new and revised Recommendations issued by the ITU-TS, the term "CCITT Recommendation X.xxx" will be replaced by the "ITU-T Recommendation X.xxx" designation. For a transition period from 1993 to 1997, if the Recommendation had a previous CCITT designation, the new name will include "(formerly CCITT Recommendation X.xxx)". Names of existing CCITT Recommendations will not change unless revised.

### 1.1.1.3 HANDLE DATE AND TIME TRANSITION TO YEAR 2000

For any time-stamp data that occurs in 5ESS<sup>®</sup> switch operations after the time is transitioned to the year 2000 and beyond, the year 00 shall be interpreted as 2000 after 12/31/1999. The data (billing, log files, and so forth) shall continue to work even right after transition to the year 2000 from midnight 12/31 1999.

### 1.1.2 ORGANIZATION

The IM manual includes the:

Introduction - explains the purpose of the document and the organization of the material presented.

User Guidelines - contains information about the conventions used in documenting IMs. The structure and layout of IMs, as well as their naming and usage conventions, are discussed. This section also explains the on-line help feature, the input message edit and history function, the format notation used in this document, and the organization and content of the message descriptions contained in this document.

Acronym List - defines acronyms and abbreviations used in the IM manual.

Indexes - contains helpful indexes. These indexes may be used as guides for locating and selecting specific message descriptions in the IM manual.

- The Functional Index summarizes the purpose of each IM, categorizing the IM according to unit or function.
- The Topical Index shows the relation of IMs divided into topics (categories).

Appendixes - contains information that is referred to by two or more IM descriptions, such as listings of audits and traffic (TRFC) sections.

The rest of the IM manual contains message descriptions presented in alphabetical order by message ID.

### 1.2 USER COMMENTS

We are constantly striving to improve the quality and usability of this information product. Please use one of the following options to provide us with your comments:

- You may use the on-line comment form at <http://www.lucent-info.com/comments>

- You may email your comments to [comments@lucent.com](mailto:comments@lucent.com)

Please include with your comments the title, ordering number, issue number, and issue date of the information product, your complete mailing address, and your telephone number.

If you have questions or comments about the distribution of our information products, see Section 1.3, Distribution.

### 1.3 DISTRIBUTION

For distribution comments or questions, contact your local Lucent Technologies Account Representative.

A documentation coordinator has authorization from Lucent Technologies to purchase our information products at discounted prices. To find out whether your company has this authorization through a documentation coordinator, call **1-888-LUCENT8 (1-888-582-3688)**.

Customers who are not represented by a documentation coordinator and employees of Lucent Technologies should order 5ESS<sup>®</sup> switch information products directly from Lucent Technologies.

To order, call the following telephone number:

- **1-888-LUCENT8 (1-888-582-3688)** or fax to **1-800-566-9568**, from inside the continental United States
- **1-317-322-6416** or fax to **1-317-322-6699**, from outside the continental United States.

### 1.4 TECHNICAL ASSISTANCE

For technical assistance, call Technical Support Services (TSS) at:

- **1-866-LUCENT8 (1-866-582-3688)**; from inside the continental United States
- **1-630-224-4672**; from outside the continental United States.

Technical Support Services is staffed 24 hours a day, 7 days a week.

### 1.5 SECURED/PROPRIETARY FEATURES

For all secured features, a right to use (RTU) fee must be paid before enabling information is provided. There may be additional proprietary documentation needed to interpret information regarding these features. Contact your Account Team Representative for additional information.

For a complete list of secured feature identifiers (SFID), refer to the *Translation Guide (TG-5)* manual, 235-080-100.

### 1.6 REFERENCES

This is a standard 5ESS<sup>®</sup> switch document that is also applicable to the Compact Digital Exchange (CDX) and Very Compact Digital Exchange (VCDX) switching systems. Information applicable to only CDX or VCDX may be found in the following documents:

- 235-120-010 Compact Digital Exchange (CDX) Reference Guide
- 235-120-020 Compact Digital Exchange (CDX) User's Guide
- 235-120-120 Very Compact Digital Exchange (VCDX) User's Guide

Additional references are given as needed, within individual message descriptions. An "x" or "x"s in the last three positions of a release specific document number indicate the digits that change from release to release. Refer to 235-001-001, Documentation Description and Ordering Guide for the document number associated with each software release.

## 2. USER GUIDELINES

### 2.1 INTRODUCTION

This section explains the rules to which 5ESS<sup>®</sup> switch input messages (IMs) must conform, and the conventions that are used in this manual to show how messages are constructed.

The term messages refers to the commands that are used to control and monitor the 5ESS<sup>®</sup> switch system (IMs).

Each 5ESS<sup>®</sup> switch system is set to accept only one message language, human-machine language (MML). MML is the human interface language developed by the International Telecommunication Union - Telecommunication Standardization Sector (ITU-TS) (formerly CCITT).

### 2.2 MESSAGE DESCRIPTIONS

The message descriptions form the bulk of the IM manual. Message descriptions are documented on manual pages.

The term "manual page" refers to the description of an IM without regard to how many physical sheets of paper or screens are used to complete the description.

Each IM manual page consists of several elements that form the message description.

### 2.3 MANUAL PAGE - GENERAL PARTS

This section gives a general description of each part of a manual page.

#### 2.3.1 Page Headers (Paper Only)

The header consists of two lines across the top of each manual page. The header on the inside of the manual page identifies the document number and the issue date. The header on the outside of the manual page shows the name of the document (for example, 5ESS<sup>®</sup> Switch Input Messages), and the message name.

#### 2.3.2 Message Name

The message name is made up of the command code and parameter names from the message format omitting any variables and optional values and has a maximum length of 20 characters. This is used like a dictionary heading to give a general idea of placement in the manual.

#### 2.3.3 Page Footers (Paper Only)

The footer on the inside of the page contains the issue number. The outside footer shows the message ID and page number. The message ID is explained with the key block items.

#### 2.3.4 The Key Block

The key block is the block of text in the upper right corner of the manual page. The key block includes:

- ID
- RELEASE
- COMMAND GROUP
- APPLICATION

##### 2.3.4.1 ID

The ID is the unique identifier of the IM. Every message ID is composed of two parts separated by a colon. The part to the left of the colon is the command code of the message. One or more parameter names from the format usually make up the remaining portion of the ID. If there is more than one parameter name to the right of the colon, these parameter names are separated by a hyphen. For example: EXC:SODD-RED-OP.

### 2.3.4.2 RELEASE

This was formerly labeled GENERIC. The 5ESS<sup>®</sup> switch software release or range of releases to which the message description applies. Here are some examples of possible software release entries:

5E14 only	The message description applies only to release 14.
5E14 and later	The message description applies to release 14 and to all later releases.
5E14 - 5E15	The message description applies to release 14 through release 15.

If changes from one release to another have affected a format, two or more separate manual pages are provided. Such a split is indicated by the last character of the message ID. If separate manual pages exist for the same message, the ID for the first manual page is followed by "-A", the second by "-B", and so forth.

Please note that this "dash-letter" suffix is dynamic depending on the number of software releases being supported and the number of versions of a message.

### 2.3.4.3 COMMAND GROUP

The command group identifies the message as a member of a group of input messages having a certain authority/priority level on the switch. This code can sometimes be changed by the service provider. What is documented on the manual page is the command group originally assigned by AT&T in the initial software release.

### 2.3.4.4 APPLICATION

This specifies the application to which the message pertains.

Application Code	Explanation
5	USA 5ESS <sup>®</sup> switch.  May also apply to CDX, VCDX, or WNC. Refer to the help facility to verify applicability for these systems.
3B	administrative module (AM) software.
CNI	Common Network Interface.
CDX	Compact Digital Exchange only.
VCDX	Very Compact Digital Exchange.  May also apply to the AEWNC. Refer to the help facility to verify applicability for this system.
AEWNC	<i>Air Extension</i> <sup>SM</sup> Wireless Network Controller only.

This implies that a listing such as "5,3B" means that this message applies to both USA 5ESS<sup>®</sup> switch and the administrative module software.

### 2.3.5 WARNING

Input messages that may adversely affect service are flagged with a warning message at the left side of the key block. An explanation of the warning is given in the PURPOSE section.

### 2.3.6 PURPOSE

This section of the manual page contains a brief explanation of the purpose of the message and includes the explanation of any associated warnings.

### 2.3.7 FORMAT

Message formats are a kind of notation that is used in this document to show the possible ways in which IMs can be constructed. Formats are described in greater detail in the **MANUAL PAGE-SECTION DETAILS** section of the User Guidelines.

### 2.3.8 EXPLANATION OF MESSAGE

This section of the manual page explains the meaning of the various parameter names, parameter values, and variables in the format.

### 2.3.9 SYSTEM RESPONSE

The system responds to IMs with an acknowledgment that appears one space after the terminating character of the IM on the TTY device. This will normally happen about five seconds after the message is entered.

These acknowledgments give information about the status of the message (for example, accepted, rejected, in progress, and so forth). Standard system responses are listed in the APP:RESPONSES appendix in the Appendixes section of the Input Messages manual. Standard craftshell responses are listed in Table 2-1 at the end of the User Guidelines. If a message has a response that is not standard, the response is explained in this section of the manual page.

### 2.3.10 REFERENCES

This section lists all related input and output messages, documentation references, Master Control Center (MCC) display pages and recent change views.

## 2.4 MANUAL PAGE - SECTION DETAILS

### 2.4.1 FORMAT Section

The format is the most important part of every manual page. The FORMAT shows the syntax of the message (that is, the way the message must be constructed so that the system will understand it correctly).

#### 2.4.1.1 Example

Here is an example of how the FORMAT section of a typical manual page might look:

- ```
[1]   OP:PMCR,TYPE=STAT [,HOURLY|,DAILY=a|,NOHOURLY|,NODAILY];
[2]   OP:PMCR,TYPE=RET,INTVL=b,FORM=c;
[3]   OP:PMCR,TYPE=DEM,FORM=c;
```

Many IMs can be input in more than one format. When appropriate, distinct formats are shown separately and given a number (in square brackets). In the example, there are three formats. (The OP:PMCR message requests various plant measurements detailing system performance statistics.)

Format 1 is a status report request. It reports hourly and/or daily data.

Format 2 is a retained report request. It reports hourly and/or daily data that was retained from a previous status report.

Format 3 is a demand report request. It reports up-to-the-hour data collected for the next daily report.

### 2.4.1.2 Format Notation

The message formats shown in this document may include one or more types of format notation that are not part of the message itself. The purpose of this notation is to show the choices the user has in entering the message.

|             |                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| { }         | Brackets enclose optional entries. Optional entries may be included in the message or may be omitted.                                                                                                                           |
| { }         | Braces enclose two or more entries where one entry, but only one, must be included in the message.                                                                                                                              |
|             | OR bars separate a selection of entries enclosed by braces or brackets. One of the entries separated by OR bars, but only one, may be selected.                                                                                 |
| .<br>.<br>. | Vertical ellipsis marks (three vertical dots) following a format means that there may be more than one line when an OM is printed. These additional lines will conform to the same format, but may contain different data.      |
| ...         | Horizontal ellipsis marks used within a format depict variable repetition.                                                                                                                                                      |
| ...         | Three ellipsis marks with embedded spaces, either at the beginning of a line or at the end of a line, indicate that a format string is divided into multiple lines in the manual page. This is for documentation purposes only. |

Remember that brackets, braces, OR bars, and ellipsis marks are never used when you are actually entering a message. They are only used in message formats to show you how a message must be constructed.

### 2.4.1.3 Notation Examples

The following examples illustrate the use of brackets, braces, OR bars, and ellipsis.

|                                                              |                                                                                                                                                                                            |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ENTRY1 ENTRY2                                                | Both ENTRY1 and ENTRY2 must be used.                                                                                                                                                       |
| {ENTRY1} {ENTRY2}                                            | Both entries are optional. Both, either, or neither may be used.                                                                                                                           |
| {ENTRY1   ENTRY2}                                            | Either ENTRY1 or ENTRY2 must be used. Using both is not permitted.                                                                                                                         |
| {ENTRY1   ENTRY2}                                            | Either ENTRY1 or ENTRY2, but not both, may be used. Both entries may be omitted.                                                                                                           |
| {ENTRY1 {ENTRY2   ENTRY3}}                                   | All three entries may be omitted; however, if any of these entries is used, your options are: ENTRY1 and ENTRY2 or ENTRY1 and ENTRY3. It is not permissible to use both ENTRY2 and ENTRY3. |
| {ENTRY1   ENTRY2   ENTRY3}                                   | One of these three entries must be used, but it is not permissible to use more than one.                                                                                                   |
| {ENTRY1} ... {ENTRY1}                                        | Signifies repetition of ENTRY1.                                                                                                                                                            |
| a b c<br>.<br>.<br>.<br>.<br>.<br>.<br>.<br>.<br>.<br>.<br>. | Signifies that there may be more than one line when an OM is printed.                                                                                                                      |

### 2.4.1.4 Special Conventions

A special format convention governs cases where a colon is followed by a series of consecutive optional entries separated by commas. In these cases, the colon replaces the comma for the first optional entry that is actually used. For example, DGN:MTC is documented with the following format:

```
DGN:MTC=a[: [RPT=b] [, RAW] [, UCL] [, REX [, DEX]] [, [PH=c [&&d]] [, TLP]
[, CONT] [, MT=e] ] ;
```

The following examples show the punctuation of this message when some (but not all) of the optional entries are chosen.

```
DGN:MTC=a:RPT=b,RAW,UCL,REX,PH=c,TLP;
DGN:MTC=a:RAW,UCL,REX,PH=c,TLP;
```

```
DGN:MTC=a:UCL,REX, TLP;
DGN:MTC=a;
```

## 2.4.2 Message Syntax

The structure of messages consists of a series of fields that must be entered in a prescribed order. Fields and the entries that can be made in them are summarized in Table 2-2 of the User Guidelines.

This is the general syntax of a message:

```
command code:parameter block(s):...:[data parameters block(s)];
```

IMs consist of two or more fields. The first field of an IM always contains a command code that identifies the action that the message is being used to accomplish. This command code is always followed by a colon.

The colon is followed by one or more parameter blocks. A parameter block consists of parameter names with associated parameter values. Parameter blocks are separated by colons. Parameter blocks identify units, functions, or data that the command code is acting upon.

A parameter name may appear by itself, or it may be followed by a single parameter value, a list of values, or a range of values. Parameter names are alphanumeric and must begin with a letter.

A parameter value is separated from a parameter name by an equal sign (=). Parameter values may be numeric or alphanumeric. When parameter values are shown in the FORMAT section of the manual page as lowercase letters, they represent variables that are replaced by specific data when the message is entered. If the value of the variable contains lowercase letters, the value must be enclosed in double quotes to retain the integrity of the lowercase letters.

Values in a list are separated by hyphens. Any two values that indicate the limits of a range are separated by two ampersands (&&), instead of a hyphen.

### 2.4.2.1 Syntax Examples

The following examples illustrate command codes and parameter blocks in various IMs.

|                        |                                                                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CLR:UMEM;              | Two fields: the command code (CLR), and one parameter block (UMEM).                                                                                                              |
| ABT:TASK:TLWS=a;       | Three fields: the command code (ABT), and two parameter blocks (TASK and TLWS=a)                                                                                                 |
| UPD:GEN:BACKOUT:UCL;   | Four fields: the command code (UPD), and three parameter blocks (GEN, BACKOUT, and UCL).                                                                                         |
| OP:STATUS,PROCESS,ALL; | Three fields: the command code (OP) and two parameter blocks (STATUS and PROCESS,ALL).<br><br>NOTE: A comma is used here instead of the colon separating STATUS and PROCESS,ALL. |

### 2.4.2.2 Parameter Name and Parameter Value Examples

The following examples show instances of parameter names and parameter values. OP:STATUS, DN=a;

The purpose of this message is to output the current status history for a specified line. The IM has the command code of OP (for "output"), and the parameter names STATUS and DN in the next field. The parameter name DN has the parameter value 'a'. This value stands for the directory number of the line for which the status history is to be printed. If you were to type in this message, you would substitute an actual directory number for the value 'a'.  
SET:CLK,DATE=a-b-c,TIME=d-e-f;

This message sets the system clock to the date and time that you specify. There are three names in the second field

(CLK, DATE, and TIME). If you were to type in the command, you would enter the month for 'a', the day of the month for 'b', and the year for 'c'. Similarly, you would enter the hour, minute, and second for values 'd', 'e', and 'f'.  
 CLR: ISOL, SM=a[&&b];

This message takes one or more switching modules (SMs) out of isolation. The parameter name SM has one or two values ('a' and 'b'). You must enter at least one. If you choose to enter only 'a', then you will enter only one SM number. If you choose the option, then you will enter a range of SM numbers. In this case, 'a' will stand for the lower limit of the range, and 'b' stands for the upper limit of the range. (Note the two ampersands that precede the 'b'. These ampersands indicate that a range is being specified.)

### 2.4.2.3 Comparison of Format Syntax and Actual Input Messages

The following examples show message format syntax as they might appear in manual pages and some examples of actual IMs that correspond to these formats. The FORMAT section of a manual page uses uppercase to indicate command codes and parameter names. Lowercase letters are used to indicate variables. In actual use at the user input terminal, all command codes and parameter names may be typed in lowercase.

|                                              |                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Syntax:<br>Example:<br>or                    | OP:STATUS, DN=a;<br>OP:STATUS, DN=19;<br>op:status, dn=19                                                                                                                                                                                                                                                                                    |
| Syntax:<br>Example:<br>or                    | SET:CLK, DATE=a-b-c, TIME=d-e-f;<br>SET:CLK, DATE=12-22-94, TIME=2-30-15;<br>set:clk, date=12-22-94, time=2-30-15;                                                                                                                                                                                                                           |
| Syntax:<br>Examples:<br>or<br>or             | CLR:ISOL, SM=a[&&b];<br>CLR:ISOL, SM=5&&12;<br>clr:isol, sm=5&&12;<br>CLR:ISOL, SM=9;<br>clr:isol, SM=9;                                                                                                                                                                                                                                     |
| Syntax:<br>Examples:<br>or<br>or<br>or       | OP:STATUS, PROCESS, {ALLTERMS ALLKERNS ALL} [, OPL=a];<br>OP:STATUS, PROCESS, ALLTERMS, OPL=10;<br>op:status, process, allterms, opl=10;<br>OP:STATUS, PROCESS, ALL, OPL=10;<br>op:status, process, all, opl=10;<br>OP:STATUS, PROCESS, ALL;<br>op:status, process, all;                                                                     |
| Syntax:<br>Examples:<br>or<br>or<br>or<br>or | IN:REMOTE, START [, BSDIR="a"] [, BLOCKS=b];<br>IN:REMOTE, START, BSDIR="/etc/bwm", BLOCKS=100;<br>in:remote, start, bsdir="/etc/bwm", blocks=100;<br>IN:REMOTE, START, BSDIR="/etc/bwm";<br>in:remote, start, bsdir="/etc/bwm";<br>IN:REMOTE, START, BLOCKS=100;<br>in:remote, start, blocks=100;<br>IN:REMOTE, START;<br>in:remote, start; |

### 2.4.2.4 Entering an IM

The craftshell accepts simplified IM syntax. Commas rather than colons may be used to separate the parameter blocks after the command code and first colon. All options may be specified as a single, comma-separated parameter block.

Parameter names may be typed in any order within a parameter block, but the parameter blocks must appear in the order specified in the manual page.

### 2.4.2.5 Syntax Combination Example

This example may be entered in a variety of format syntax combinations:

```
DGN: IOP=1: RPT=1, RAW, UCL: DATA, CONT, TLP;
```

Valid examples:

|                                               |                                                                         |
|-----------------------------------------------|-------------------------------------------------------------------------|
| DGN: IOP=1, RPT=1, RAW, UCL: DATA, CONT, TLP; | (Colon between IOP and RPT has been changed to a comma.)                |
| DGN: IOP=1, RAW, UCL, RPT=1: DATA, CONT, TLP; | (Order of keywords in the third block is rearranged.)                   |
| DGN: IOP=1, RAW, UCL, RPT=1: DATA, TLP, CONT; | (Order of keywords in the fourth block is rearranged.)                  |
| DGN: IOP=1, RAW, UCL, RPT=1, TLP, CONT;       | (The ":" has been changed to a comma and the "DATA," has been deleted.) |

Invalid examples:

|                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| DGN, IOP=1, RAW, UCL, RPT=1, CONT, TLP; | (First colon has been changed to a comma.)     |
| DGN: IOP=1, CONT, TLP, RAW, UCL, RPT=1; | (Order of blocks 3 and 4 reversed.)            |
| DGN: IOP=1, RAW, UCL, CONT, TLP, RPT=1; | (Parameters of blocks 3 and 4 are intermixed.) |

Because of the way that IMs are translated internally by the system, the message that is echoed to an output device may look different from the message originally entered at the console.

For example, the actual message: DGN: IOP=1: RPT=1, RAW, UCL: DATA, CONT, TLP; may be echoed to an output device from any of the following IM formats:

DGN: IOP=1, RPT=1, RAW, UCL, CONT, TLP;

DGN: IOP=1, RPT=1, UCL, RAW, CONT, TLP;

DGN: IOP=1, UCL, RAW, RPT=1, CONT, TLP;

DGN: IOP=1, UCL, RAW, RPT=1, TLP, CONT;

#### 2.4.2.6 A Summary of Syntax Rules

A summary of rules for constructing IMs follows:

- (1) Block separators (:) may be typed as commas (,) except for the colon immediately following the command code.
- (2) Parameter names may be unordered within a parameter block, but the blocks themselves must remain ordered.
- (3) All numbers in IMs are assumed to be decimal unless you indicate otherwise by entering the appropriate code before the number. Valid codes are:
  - B' (binary)
  - O' (octal)
  - H' or X' (hexadecimal)
  - D' (decimal)
- (4) An entered message may consist of up to 255 spaces and characters that may extend over several lines of input.
- (5) The last character in a format line must be either an exclamation point, a semicolon, or a question mark.

- The semicolon (provided automatically by the return key) causes the message to be executed immediately as entered.
  - The exclamation point is a continuation character.
  - The question mark requests craftshell help.
- (6) Within a message, the equal sign (=) is used as a separator between the parameter name and the parameter value. Spaces are not allowed between parameters.
- (7) Double quotation marks (" ") around a parameter value are required when specifying a pathname to a file or file name or to maintain the integrity of lowercase letters.
- (8) Typing a non-printable character in a string results in ?(BEL) (a question mark and a bell sound). The non-printable character remains in the string.

## 2.5 ROUTING INPUT MESSAGE RESPONSES TO THE RECEIVE-ONLY PRINTER (ROP)

An output message response to an IM request is always printed on the originating TTY. The output message may also print on the receive-only printer (ROP) and/or other I/O devices, depending on the message class associated with the output message. There may be message classes that have an "RSP" or "\_RSP" suffix (shown in the key block section of an output message description). These types of messages print at the originating TTY terminal only, in "response" to the input request.

Output messages with an "RSP" or "\_RSP" message class can be forced to print at the ROP by appending ",PRTROP" to the end of the IM request. The ",PRTROP" option is valid on any IM and does not adversely affect the routing of the output message, except to route it to the ROP.

## 2.6 HELP FEATURE

The 5ESS<sup>®</sup> switch has an IM HELP feature. This feature:

- Improves the understanding of error messages in cases where syntax or semantic errors are found in entered messages.
- Helps with IM syntax, including parameter value type and range.
- Prompts for entering IMs.

**NOTE:** Do not use HELP while the emergency action interface (EAI) page is displayed. Instead, press the NORM/DISP key to display a non-EAI page, then use HELP. If HELP is used while the EAI page is displayed, only the bottom few lines of the HELP message are displayed. The EAI page may also be left partially blank, but can be restored manually by pressing the EA/DISP key.

### 2.6.1 The Different Kinds of Help

There are two different ways to get help. One way is to type a portion of an IM, followed by a question mark. Another way is to type a question mark after an error message. Either of these will get you help.

There are two different types of help. The first type of help provides information about the syntax of IMs. The second type of help assists you in composing IMs by prompting choices between the possible entries.

### 2.6.2 Getting Help If You Know One or More Parameter Name

If you know one or more of the parameter names in a message, you can find out how many messages share that parameter, and what the syntax of these messages is.

To get information about the parameter names in an IM, enter part of the message (one or more parameter names). Type a question mark after the last parameter name.

**EXAMPLE 1**

```

If you enter:      op:pmcr?
The system responds:  The input matches 3 messages.
                    Further errors may be revealed after a single
                    message has been selected.

                    1) OP:PMCR:TYPE=a,FORM=b;

                    2) OP:PMCR:TYPE=a,INTVL=b,FORM=c;

                    3) OP:PMCR:TYPE=a[,b][,FORM=c];
                       b is HOURLY, DAILY[=d], NOHOURLY or NODAILY;
                       choose one or omit

                    append text, hit ? for more info.,
                    hit <CR> to execute, or hit <DEL> to reject

                    op:pmcr
  
```

These are the only messages that begin with "OP:PMCR". Up to 128 messages can be displayed. The underline character in the last line of the example represents the position of your cursor after the system has displayed its response on your terminal. The system will wait about forty seconds for your response. If you do not respond within that time, then you are exited from the help facility, and you get the system prompt.

You may do one of the following:

- Enter a carriage return to execute, "OP:PMCR" which results in a missing parameter name errors message.
- Type the rest of a message [for example, ":type=dem,form=1" (for format 1)] and a carriage return to execute the message.
- Type a question mark to go to the second help level. You are then taken through the message a step at a time, and you are prompted for each entry.
- Press the "Delete" key. You leave the help facility and the message is not sent.

**NOTE:** If you type a question mark immediately after a parameter name (as in the example), you get information only about the parameter names in the message. You do not get information about parameter values.

You may also get help for parameter values in a message. To get help for parameter values in a message, type an equal sign (=) followed by a question mark after the parameter name.

**EXAMPLE 2**

```

If you enter:      op:conv,len=?
The system responds:  LEN=a-b-c-d-e-f
                    a is an SM number between 1 and 192
                    b is a number between 0 and 7
                    c is a number between 0 and 9
                    d is 0 or 1
  
```

```

      e is a number between 0 and 7
      f is a number between 0 and 3

      append text, hit ? for more info.,
      hit (CR) to execute, or hit (DEL) to reject
      OP:CONV,LEN=

```

The system lists the possible entries for the values ('a' through 'f') of parameter LEN of this message. The underline character represents the position of the cursor on the screen.

### 2.6.3 Getting Help for an Error Message

If you make a mistake when you enter an IM, the system responds with an error message. You can invoke the help facility after receiving such a message and get more information about how the message should be composed.

Here is an example of getting help after the system sends an error message:

#### EXAMPLE 3

If you enter:

The system responds:

```

op:hdwchk,clink;
?D - unexpected keyword CLINK
enter a new command OR ? for more information

```

If you now type a question mark, you will obtain the following system response:

```

unexpected keyword CLINK
The input matches 3 messages.

```

(Further errors maybe revealed after a single message has been selected.)

- 1) OP:HDWCHK,a;
  - a is MMF=b-c, CMP=b-d, FPC=b, PPC=b,
  - ONTC=b, MSCU=b, or CLNK=e-f-g-h;
  - must choose one
- 2) OP:HDWCHK,CM;
- 3) OP:HDWCHK,NCREF,a;
  - a is PRIM=b, SEC=b, XC=b; REF1=b, REF2=b,
  - REF3=b, REF4=b, REF5=b, REF6=b, REF7=b,
  - REF8=b; must choose one

```

enter a new command OR ? for more information

```

Typing the question mark after an error message has the same effect as typing a message fragment followed by a question mark. The same kind of help is provided. In this case, three messages begin with OP:HDWCHK. The unexpected keyword error is ignored.

### 2.6.4 The Second Level of Help: Prompting

Once you have gotten help as described in the previous section, you can get an additional kind of help: prompting. If you type a question mark again after receiving the help described in Examples 1, 2, and 3, you are prompted for each entry in the message until it is complete.

If you type a question mark in response to Example 2, you are prompted for each parameter value (a through f) for parameter LEN. In Examples 1 and 3, you are asked to choose one message from the list that is displayed. Then

you are prompted to complete the chosen message.

## 2.6.5 Ending the Help Session

You may exit the help facility at any time by pressing the "Delete" key. If you are being prompted, then you must press the "Delete" key once to end the prompting, and press it a second time to end the help session.

## 2.7 INPUT MESSAGE EDIT AND HISTORY

The input message edit and history function is designed to assist the user in retrieving and editing input messages already entered on a given terminal. It provides the following capabilities to the user:

- A record of input messages entered during a session.
- Retrieval by history buffer line number, by string, or by last input message entered.
- Edit of retrieved input messages.

### 2.7.1 Availability

The input message edit and history function is provided on the following terminal types:

- Maintenance Control Center (MCC)
- Supplementary Trunk and Line Workstation (STLWS)
- Switching Control Center (SCC)
- Recent Change and Verify (RCV)

### 2.7.2 Related Input/Output Messages

The input message edit and history function includes four input messages and an output message. The input messages apply only to the terminal upon which they are entered. See the appropriate manual pages for more information.

| IM Message ID | Purpose                                  |
|---------------|------------------------------------------|
| ALW:HIST      | allow history recording                  |
| INH:HIST      | inhibit history recording                |
| CLR:HIST      | clear history buffer                     |
| OP:HIST       | displays entries from the history buffer |

| OM Message ID | Purpose                               |
|---------------|---------------------------------------|
| OP:HIST       | response to the OP:HIST input message |

### 2.7.3 History

Each terminal keeps a separate history buffer containing only the input messages entered at that terminal. Input messages are saved only when history recording is allowed. By default, history recording is allowed when a terminal comes into service.

If history recording is allowed and the input message is not a help input message, then the submitted input message is saved in the history buffer.

Function associated input messages that access help information and retrieve or edit input messages are not stored, regardless of the status of history recording.

### 2.7.3.1 Service Affecting or Sensitive Input Messages

It is recommended that the user inhibit history recording before entering any input messages that are sensitive or may cause interruptions or degradations of service. This prevents the service affecting input message from being accidentally retrieved and re-executed. After the sensitive or service affecting input message is executed, history recording can be allowed.

### 2.7.3.2 History Buffer Line Numbers

The history buffer can have a maximum of 200 entries at any given time. The buffer line numbers, however, begin at 1 and have a maximum range of 999.

Numbering of the buffer lines continues to 1000 even though only the last 200 input messages are in the buffer at any given time. The input message assigned to buffer line number 1000 triggers the following sequence:

- It is reassigned to line number 200.
- The last 199 entries already in the buffer are renumbered 1 through 199.
- The incrementation of buffer line numbers resumes with 201.

### 2.7.3.3 Clearing the History Buffer

It is recommended that the user clear out the history buffer at the end of each terminal session. This helps keep users from accessing input messages and corrupting the switch database by accident or intent. The buffer is always empty when a terminal comes into service.

## 2.7.4 Special Characters

The characters '#' and '^' are used for line editing control. The '#' character indicates that a retrieval process is to commence. The '^' indicates that a string follows. The string may be null.

## 2.7.5 Input Message Retrieval Procedure

A input message can be retrieved by one of the following methods:

| Code | Explanation                                                                                                                         |
|------|-------------------------------------------------------------------------------------------------------------------------------------|
| #n>  | Retrieve by history buffer line number. This retrieves line number 'n' from the history buffer.                                     |
| ##   | Retrieve last input message. This is a shorthand method to retrieve the most recently stored input message from the history buffer. |
| #^a  | Retrieve by string. This retrieves the most recently stored input message that contains the string 'a' from the history buffer.     |

## 2.7.6 Command Modes

The modes associated with the input message edit and history function are:

- command entry mode
- edit mode

### 2.7.6.1 Command Entry mode

Command entry mode is the default mode. Input messages entered in command entry mode are stored in the

history buffer, if history recording is allowed. The prompt for command entry mode is '<'.

Enter '?' to request help information.

### 2.7.6.2 Edit Mode

From command entry mode, edit mode is accessed by entering one of the special character sequences that indicate history buffer retrieval is being requested.

If the indicated buffer line number or string is found in the history buffer, the retrieved input message becomes the "pending" input message and the craftshell switches to edit mode. If an available input message is not identified, a "Command Unavailable" error message is output and the craftshell remains in command entry mode.

The user stays in edit mode until he/she either submits the pending input message for execution or cancels the edit session. After each edit, the latest version of the pending input message is displayed, along with the edit mode prompt (<<). At the edit mode prompt, the user can perform any of the following actions:

- enter '?' to request input message edit help information.
- enter (cr) (carriage return) to execute the pending input message.
- enter (del) (delete) to return to command entry mode, without executing the pending input message.
- retrieve another saved input message by any of the available methods.
- continue editing the pending input message.
- enter an input message.

To stay in edit mode, a pending input message must always be available. If, after an edit cycle is complete, a pending input message is not available, the craftshell returns to command entry mode.

If a carriage return or semi-colon (;) is entered at the edit prompt (<<), the pending input message is submitted to the craftshell for execution and:

- the edit session is terminated
- the craftshell returns to command entry mode
- the command entry mode prompt (<) is displayed.

If the input message entered is incorrect, an appropriate error message is displayed by the craftshell.

### 2.7.7 Help

If a lone question mark (?) is entered at the edit prompt (<<), a brief input message edit help message is displayed, followed by the latest version of the pending input message and the edit mode prompt (<<).

If the user enters an edited input message with invalid syntax, the input message edit help information is displayed after the "Command Not Recognized" error message.

### 2.7.8 Line Editing

Input message editing provides the capability to retrieve saved input messages and re-execute them. Retrieved input messages may be edited using substitutions, appends, or a combination of both before re-execution.

### 2.7.8.1 Editing Definitions

- Append = A string is added to the end of the pending message.
- Substitute = A substitution is performed only at the right-most occurrence of the specified *oldstring* within the pending input message. This permits the user to easily update just the last characters(s) of an input string.
- Nuances = A null *oldstring* causes the replacement string to be appended to the end of the pending input message. A null *newstring* causes the *oldstring* to be deleted from the pending input message.

### 2.7.8.2 Retrieval/Editing Options

| Code                                            | Explanation                                                                                                                                                                                                            |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>^newstring</code>                         | The <i>newstring</i> text is appended to the end of the pending input message or the last input message entered.                                                                                                       |
| <code>^oldstring^newstring</code>               | Substitute the new string for the old string to the pending input message or the last input message entered.                                                                                                           |
| <code>#n^newstring</code>                       | Retrieve line number from the history buffer ( <i>#n</i> ) and append the <i>newstring</i> to it.                                                                                                                      |
| <code>##^newstring</code>                       | Retrieve the most recently stored input message from the history buffer ( <i>##</i> ) and append the <i>newstring</i> to it.                                                                                           |
| <code>^#searchstring^newstring</code>           | Retrieve the most recently stored input message containing the <i>searchstring</i> from the history buffer ( <i>#searchstring</i> ) and append the <i>newstring</i> to it.                                             |
| <code>#n^oldstring^newstring</code>             | Retrieve line number from the history buffer ( <i>#n</i> ) and substitutes the last occurrence of the <i>oldstring</i> with the <i>newstring</i> .                                                                     |
| <code>##^oldstring^newstring</code>             | Retrieve the most recently stored input message from the history buffer ( <i>##</i> ) and substitute the last occurrence of the <i>oldstring</i> with the <i>newstring</i> .                                           |
| <code>#^searchstring^oldstring^newstring</code> | Retrieve the most recently stored input message containing the <i>searchstring</i> from the history buffer ( <i>#searchstring</i> ) and substitute the last occurrence of the <i>oldstring</i> with <i>newstring</i> . |

### 2.7.9 Error Cases

The input message edit and history function provides specific error messages to assist the user when problems are encountered when retrieving or editing an input message and when invalid conditions for an OP:HIST input message exist.

For error conditions that occur during the retrieve or edit procedures, the following results are possible:

| Result                        | Explanation                                                                                                                                                                                                                                                                                             |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remain in command entry mode. | If an attempt to retrieve a input message (and go into edit mode) from command entry mode fails, there is no pending input message available. An error message is output, followed by the command entry mode prompt (<).                                                                                |
| Remain in edit mode.          | If there is a pending input message available, subsequent error conditions generates an error message followed by the pending input message and the edit mode prompt (<<). The pending input message is the result of the last successful retrieve or edit.                                             |
| Go to edit mode.              | If a combined retrieve and edit input message is entered at the command entry mode prompt (<), it may succeed for the retrieve and fail for the edit. An error message is output (for the failed edit), followed by the pending input message (the successful retrieve), and the edit mode prompt (<<). |
| Go to command entry mode.     | If a successful edit results in a null pending input message, the command entry mode prompt (<) is output. No error message is output, since the edit was successful.                                                                                                                                   |

## 2.8 MCC DISPLAY PAGES

Master Control Center (MCC) display pages are used to perform maintenance and administrative functions for the 5ESS<sup>®</sup> switch.

See document 235-105-110 System Maintenance Requirements and Tools for a further explanation of MCC display pages.

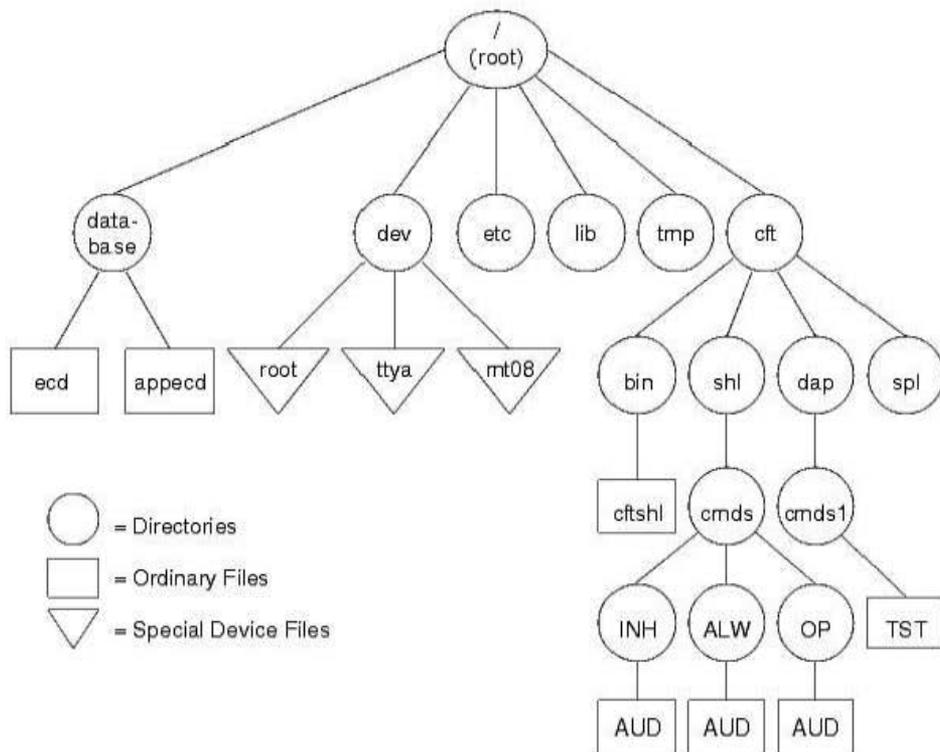
## 2.9 5ESS<sup>®</sup> SWITCH DIRECTORY STRUCTURE AND PATHNAMES

A 5ESS<sup>®</sup> switch file system is a set of directories, ordinary files, and special device files.

- A directory is a collection of names of files and other directories.
- An ordinary file (also called a 'flat file') is a collection of ASCII text. It may consist of ASCII characters, divided into lines demarcated by the new-line character, or it may consist of binary code that will be copied into main memory when a program is executed.
- A special device file supports input/output activity on a physical device, such as a terminal, magnetic tape, or disk partition. A request to read or write a special device file results in activation of the associated device. However, there is not necessarily a one-to-one correspondence between physical devices in the system and special device files. A single device may have more than one special device file. For example, four different special device files are used to read the same magnetic tape with high or low density and with or without rewind. Most special device files are located in a directory named /dev.

The set of directories and files that comprise a file system is organized into a hierarchical tree structure, illustrated in Figure 2-1. In this example:

- the database, dev, etc, lib, tmp, and cft directories all descend from the "root" directory
- the database directory contains a number of ordinary files, including the ecd and appecd databases
- the dev directory contains a number of special device files
- the cft directory contains various subdirectories, which in turn contain ordinary files and additional subdirectories



**Figure 2-1 File System Structure**

In the 5ESS<sup>®</sup> switch system, the database, etc, and tmp directories are themselves the "root" directories of separate file systems that are mounted on the root file system during a system bootstrap. These four file systems (root, database, etc, and tmp) constitute the minimum set of file systems that are required for the 5ESS<sup>®</sup> switch system to function. Backup copies of these file systems may also be provided, in case one of the primary file systems becomes damaged in a way that would prevent the system from operating successfully. If the system is bootstrapped on the backup file systems, the names of the directories where they are mounted remains the same. Other file systems may also be mounted automatically during a bootstrap, or they may be mounted manually by using ALW:FSYS-MOUNT.

Every file and directory in the system is identified by a unique pathname that indicates its location in the hierarchical file system structure. Many 5ESS<sup>®</sup> switch IMs require the specification of a pathname. There are two types of pathnames that may be specified:

- Full pathnames begin with a slash (/). This is the name of the "root" directory of the root file system, and is followed by the name of the directory that is immediately beneath the "root" directory, followed by another slash, then the next directory name, and so forth, until the name of the specified file or directory is reached.

For example: FN="/user/a\*/smo/test"

- Relative pathnames begin with the name of a directory or file at an arbitrary point in the hierarchy, with no preceding slash. Their specification is relative to the immediately preceding directory. This is sometimes referred to as the base directory.

Because they contain lower-case alphabetic characters and slashes, pathnames must always be surrounded by quotation marks (") when entered in an IM.

## 2.10 BINARY-DECIMAL-HEXADECIMAL CONVERSIONS

Both input and output messages use values in hexadecimal (base 16), decimal (base 10), octal (base 8), and binary (base 2). To convert binary numbers to hexadecimal, do the following:

- Separate the binary number into groups of four, starting with the rightmost number.
- Convert each group of four into its hexadecimal equivalent. (See Table 2-5 of the User Guidelines.)
- Example:

|                |                                 |
|----------------|---------------------------------|
| 001000011110   | Binary number                   |
| 0010 0001 1110 | Binary number in groups of four |
| 2 1 E          | Hexadecimal equivalent          |

To convert hexadecimal numbers to binary, perform the above procedure in reverse order.

To convert numbers from hexadecimal to decimal or vice-versa, refer to Table 2-4 of the User Guidelines. The left column contains hexadecimal numbers without the units digits. The units digits are shown in the first row.

**Table 2-1 Craftshell Responses**

| Response                               | Meaning                                                                                                                                                                                                                      |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ?D - incorrect value 'r' - arg #s of t | The craftshell encountered an IM with an incorrect parameter value.<br><br>r = The incorrect parameter value.<br><br>s = The index number of the parameter value.<br><br>t = The corresponding parameter name.               |
| ?D - keyword a typed out of order      | The craftshell encountered an IM with the order of parameter names from two parameter blocks reversed.<br><br>a = The first out-of-order parameter name that the craftshell encountered.                                     |
| ?D - missing keyword                   | The craftshell encountered an IM with a missing parameter name.                                                                                                                                                              |
| ?D - unexpected keyword b              | The craftshell encountered an IM with a parameter name that it does not recognize.<br><br>b = The parameter name that the craftshell does not recognize.                                                                     |
| ?E BAD IM CATALOG                      | The craftshell detected a problem with the IM catalog. The input request may or may not succeed. The catalog may be missing or corrupted, or UPD:IMCAT may not have been entered after a new catalog was installed. Refer to |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | REPT:CFTSHL output message and UPD:IMCAT IM for further information.                                                                                                                                                                                                                                                                                                                                                                                    |
| ?E CFTSHL HANGUP RECEIVED                 | The craftshell terminated because it received a hang-up signal.                                                                                                                                                                                                                                                                                                                                                                                         |
| ?E CFTSHL TERMINAL READING ERROR, ERRNO=c | The craftshell encountered an error while reading input from a terminal.<br><br>c = System error code (refer to the System Error Codes Appendix, APP:SYSERR, in the Output Messages manual).                                                                                                                                                                                                                                                            |
| ?E CFTSHL UNABLE TO FORK PROCESS d        | The craftshell can not fork a new process to execute a command.<br><br>d = Full pathname of the process that was not executed because of the fork failure.                                                                                                                                                                                                                                                                                              |
| ?E COMMAND NOT RECOGNIZED                 | This Line Edit and History error can occur when a string (recall, append or substitute string) was not prepended with a caret (^), a recall command was entered that did not properly specify which stored command was being recalled or there were too many 'caret' characters in an edit command.                                                                                                                                                     |
| ?E - input matches multiple messages      | The typed input request matches more than one input message in the IM catalog and the craftshell can not determine which message to execute. To obtain further information enter the help facility by terminating the input request with a question mark (?). If the desired input request can not be satisfied after accessing the help facility, refer to the TECHNICAL ASSISTANCE portion of the INTRODUCTION section of the Output Messages manual. |
| ?E NO COMMANDS ARE STORED                 | A Line Edit and History recall command was entered when there are no commands in the history buffer to recall. The No Commands Are Stored error takes precedence over the other Line Edit error messages.                                                                                                                                                                                                                                               |
| ?E STRING NOT FOUND                       | This Line Edit and History error can occur for two reasons:<br><br>A substitute command was entered where the 'OLD' string is not present in the pending command.<br><br>A recall by string command was entered where the recall string is not present in any of the commands stored in the command history buffer.                                                                                                                                     |
| ?E STRING TOO LONG                        | This Line Edit and History error occurs when an append or substitute command is entered that would result in a command longer than the legal limit of 256 characters. The append or substitute is rejected.                                                                                                                                                                                                                                             |
| ?E - syntax error; invalid e              | The craftshell encountered an IM syntax error.<br><br>e = The part of the IM that the craftshell identified as invalid.                                                                                                                                                                                                                                                                                                                                 |
| ?E - syntax error; unexpected 'F' after g | The craftshell encountered an IM syntax error.<br><br>f = First invalid part of the IM.<br><br>g = Last valid part of the IM.                                                                                                                                                                                                                                                                                                                           |
| ?E - terminator must be 'q'               | The craftshell encountered an improper IM terminator.<br><br>q = Proper IM terminator character.                                                                                                                                                                                                                                                                                                                                                        |
| ?E UNABLE TO INITIATE COMMAND h           | The craftshell is unable to execute an input request because it                                                                                                                                                                                                                                                                                                                                                                                         |

|                                       |                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | <p>encountered a zero-length file.</p> <p>h = Full pathname of the command that cannot be initiated.</p>                                                                                                                                                                                                                                         |
| ?E UNABLE TO MATCH COMMAND i          | <p>An input command was entered that does not exist in the craftshell search directories.</p> <p>i = Full pathname of the non-existent command code</p>                                                                                                                                                                                          |
| ?E UNAVAILABLE COMMAND, CMD = j TO k  | <p>A Line Edit and History recall command was entered that identified a command that is out of the available range. To assist the user, the available range is printed as part of the error message.</p> <p>j = Lowest command number of available range</p> <p>k = Highest command number of available range</p>                                |
| ?E INVALID COMMAND                    | <p>The craftshell is unable to execute an input request because it encountered a non-executable file or because it located a command directory but no executable file.</p>                                                                                                                                                                       |
| ?V - invalid command code l           | <p>The craftshell encountered an IM with an invalid command code.</p> <p>l = The command code that the craftshell identified as invalid.</p>                                                                                                                                                                                                     |
| NG - FEATURE NOT AVAILABLE            | <p>The requested action failed because the feature required to process the request is not present in the switch or the given module.</p>                                                                                                                                                                                                         |
| NG - FILE OPEN FAILURE                | <p>An OP:HIST input command was entered but the output file could not be opened to print the information.</p>                                                                                                                                                                                                                                    |
| NG - NO COMMANDS ARE STORED           | <p>An OP:HIST input command was entered when there are no commands in the history buffer to output.</p>                                                                                                                                                                                                                                          |
| NG - RANGE UNAVAILABLE, CMD = m TO n  | <p>An OP:HIST input command was entered that specified a range (either explicitly or implicitly) that does not match any available stored command. To assist the user, the available range is printed as part of the error message.</p> <p>m = Lowest command number of available range</p> <p>n = Highest command number of available range</p> |
| NG - SM o is isolated                 | <p>The craftshell encountered an input request targeted for a switching module (SM) that is in the isolated state.</p> <p>o = Processor number of the isolated SM.</p>                                                                                                                                                                           |
| NG - SM p is not equipped             | <p>The craftshell encountered an input request targeted for an SM that is not equipped.</p> <p>p = Processor number of the unequipped SM.</p>                                                                                                                                                                                                    |
| NG - SYNTAX ERROR IN PREVIOUS MESSAGE | <p>The EXC:PREV command was entered to execute a command that has a syntax error.</p>                                                                                                                                                                                                                                                            |
| RL - UNABLE TO EXECUTE COMMAND        | <p>The craftshell is unable to communicate with another process to execute an input request. Retry request later.</p>                                                                                                                                                                                                                            |
| RL - UNABLE TO SERVICE REQUEST        | <p>The craftshell is unable to execute an input request due to unavailable system resources such as system overload, excessive queue lengths, or a busy process. Retry request</p>                                                                                                                                                               |

later.

**Table 2-2 Summary of Parts of a Message Format**

| <b>Term or Item</b> | <b>Definition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Block of Parameters | Any field but first field of message. Contains parameter names and parameter values.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Braces { }          | Enclose two or more entries, separated by OR bars, of which the user must input one, but only one. Not input as part of the message.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Brackets [ ]        | Enclose optional entries. Not input as part of the message.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Command Code        | First field of message. Contains command code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Data Field          | Optional blocks of parameters in messages.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Equal Sign =        | Separates parameter name and parameter value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Exclamation Point ! | <p>Message terminating character that does one of the following:</p> <ul style="list-style-type: none"> <li>• In certain messages, causes the command to be executed at an appropriate break point.</li> <li>• Causes the system to expect more data field parameters to follow on the next line of input.</li> <li>• Causes the entered portion of the command to be executed as an immediate action (any ordinary message).</li> </ul> <p>Also causes a special colon (: ) prompt to be issued. The terminal will not print output messages until the normal semicolon (; ) terminating character is entered.</p> |
| Field               | <p>Basic structural unit of message. Variable length. Separated by colons.</p> <p>There are at least two fields per message: command code and parameter block(s), in that order.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Keyword             | The term keyword is often used in error messages to refer to a parameter name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Message Length      | Number of characters including spaces within the message (up to 255 characters). This may exceed one line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Number Base         | Default is decimal. Otherwise, numbers input must be preceded by B' (binary), O' (octal), or H' (hexadecimal).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| OR bar              | Separates entries within braces or brackets. One entry, but only one, must be selected. If selections are enclosed by braces, one entry must be input; if enclosed by brackets, the entry is optional. Not input as part of the message.                                                                                                                                                                                                                                                                                                                                                                            |
| Parameter           | Parameter name and its associated parameter values, if any. Two or more parameters within a block of parameters are separated by commas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameter Name      | Mnemonic identifier of a unit, function, or condition. May have parameter values associated with it. Error messages often refer to parameter names as keywords. Input as shown.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Parameter Value     | Separated from parameter name by equal sign (=). Often represented by a variable in message format. Can be input as a single entry, as multiple entries in the form a-b-c, or as a range in the form x&y.                                                                                                                                                                                                                                                                                                                                                                                                           |
| Pathname            | Starts with a slash (/), with every file and directory name separated by a slash. When entered, must be immediately preceded and followed by quotation marks (").                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Question Mark ?     | Help request character. A question mark may follow a partial message or previously entered message that was erroneous. Typing ? after a help guidance message will cause it to enter prompting mode.                                                                                                                                                                                                                                                                                                                                                                                                                |
| Quotation Marks ""  | Enclose pathname of file, directory, or device. Also enclose any text strings entered. Input as shown.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Semicolon ;         | Message terminating character that causes the command to be executed as an immediate action.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| &&                  | Indicates a range in messages.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Variable            | Shown as a lowercase letter in manual pages. Replace with user-supplied information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Verb                | Known as the command code. Shows what type of action is to be taken. May be an abbreviation of the command code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**Table 2-3 Summary of Pathnames**

| Pathname              | Meaning                                                                                                                                                                                    |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| /                     | Full pathname of the "root" directory of the <i>root</i> file system.                                                                                                                      |
| /data base            | Full pathname of the <i>data base</i> directory which is located directly under <i>/</i> .                                                                                                 |
| /cft/shl/cmds         | Full pathname of the <i>cmds</i> directory, which is located under the <i>shl</i> directory, which is located under the <i>cft</i> directory, which is located directly under <i>/</i> .   |
| /cft/shl/cmds/INH/AUD | Full pathname of the <i>AUD</i> program which is executed by the INH:AUD message.                                                                                                          |
| INH/AUD               | Relative pathname of the same <i>AUD</i> program, relative to the <i>/cft/shl/cmds</i> base directory.                                                                                     |
| OP/AUD                | Relative pathname of the <i>AUD</i> program which is executed by the OP:AUD message, relative to the <i>/cft/shl/cmds</i> base directory.                                                  |
| /dev/root             | Full pathname of the special device file for the disk partition that contains the <i>root</i> file system (mounted as <i>/</i> ).                                                          |
| /dev/broot            | Full pathname of the special device file for the disk partition that contains the backup copy of the <i>root</i> file system (also mounted as <i>/</i> ).                                  |
| /dev/db               | Full pathname of the special device file for the disk partition that contains the <i>db</i> file system (mounted as <i>/data base</i> ).                                                   |
| /dev/bdb              | Full pathname of the special device file for the disk partition that contains the backup copy of the <i>db</i> file system (also mounted as <i>/data base</i> ).                           |
| /dev/mt00             | Full pathname of the high density magnetic tape device that is attached to input/output processor (IOP) number 0 with an option 0 (rewinds a tape after reading from it or writing to it). |
| /dev/mt04             | Full pathname of the high density magnetic tape device that is attached to IOP number 0 with an option 4 (does not rewind a tape after reading from it or writing to it).                  |
| /dev/mt08             | Full pathname of the low density magnetic tape device that is attached to IOP number 0 with an option 8 (rewinds a tape after reading from it or writing to it).                           |
| /dev/mt0c             | Full pathname of the low density magnetic tape device that is attached to IOP number 0 with an option c (does not rewind a tape after reading from it or writing to it).                   |
| /dev/mt10             | Full pathname of the high density magnetic tape device that is attached to IOP number 1 with an option 0 (rewinds a tape after reading from it or writing to it).                          |
| /dev/mt14             | Full pathname of the high density magnetic tape device that is attached to IOP number 1 with an option 4 (does not rewind a tape after reading from it or writing to it).                  |
| /dev/mt18             | Full pathname of the low density magnetic tape device that is attached to IOP number 1 with an option 9 (rewinds a tape after reading from it or writing to it).                           |
| /dev/mt1c             | Full pathname of the low density magnetic tape device that is attached to IOP number 1 with an option c (does not rewind a tape after reading from it or writing to it).                   |

**Table 2-4 Binary-Octal-Decimal-Hexadecimal Conversions**

| Binary | Octal | Decimal | Hexadecimal |
|--------|-------|---------|-------------|
| 0000   | 00    | 00      | 0           |
| 0001   | 01    | 01      | 1           |
| 0010   | 02    | 02      | 2           |
| 0011   | 03    | 03      | 3           |
| 0100   | 04    | 04      | 4           |
| 0101   | 05    | 05      | 5           |
| 0110   | 06    | 06      | 6           |
| 0111   | 07    | 07      | 7           |
| 1000   | 10    | 08      | 8           |
| 1001   | 11    | 09      | 9           |
| 1010   | 12    | 10      | A           |
| 1011   | 13    | 11      | B           |
| 1100   | 14    | 12      | C           |
| 1101   | 15    | 13      | D           |
| 1110   | 16    | 14      | E           |
| 1111   | 17    | 15      | F           |

**Table 2-5 Hexadecimal-Decimal Conversion**

|   | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | A   | B   | C   | D   | E   | F   |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 000 | 001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 011 | 012 | 013 | 014 | 015 |
| 1 | 016 | 017 | 018 | 019 | 020 | 021 | 022 | 023 | 024 | 025 | 026 | 027 | 028 | 029 | 030 | 031 |
| 2 | 032 | 033 | 034 | 035 | 036 | 037 | 038 | 039 | 040 | 041 | 042 | 043 | 044 | 045 | 046 | 047 |
| 3 | 048 | 049 | 050 | 051 | 052 | 053 | 054 | 055 | 056 | 057 | 058 | 059 | 060 | 061 | 062 | 063 |
| 4 | 064 | 065 | 066 | 067 | 068 | 069 | 070 | 071 | 072 | 073 | 074 | 075 | 076 | 077 | 078 | 079 |
| 5 | 080 | 081 | 082 | 083 | 084 | 085 | 086 | 087 | 088 | 089 | 090 | 091 | 092 | 093 | 094 | 095 |
| 6 | 096 | 097 | 098 | 099 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 |
| 7 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 |

|   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 8 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 |
| 9 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 |
| A | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 |
| B | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 |
| C | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 |
| D | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 |
| E | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 |
| F | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 |

**ACRONYM**

Software Release: 5E10 and later

**1. ACRONYM LIST**

| ACRONYM | DEFINITION                                             |
|---------|--------------------------------------------------------|
| AATLSOS | alternate access to language specific operator service |
| AATOS   | alternate access to operator service                   |
| ABT     | abort                                                  |
| AC      | alternating current                                    |
| AC      | automatic callback                                     |
| ACC     | automatic congestion control                           |
| ACCDICT | access dictionary                                      |
| ACCS    | automatic calling card service                         |
| ACCSDB  | ACCS data block                                        |
| ACD     | automatic call distributor                             |
| ACG     | automatic call gap                                     |
| ACH     | attempts per circuit per hour                          |
| ACKDB   | acknowledgement database                               |
| ACL     | audit control library                                  |
| ACM     | address complete message                               |
| ACP     | action control point                                   |
| ACQS    | automatic charge quotation system                      |
| ACS     | alert control status                                   |
| ACSR    | automatic customer station rearrangement               |
| ACT     | active                                                 |
| ACT     | alternate code treatment                               |
| ACTS    | automated coin toll service                            |
| ACTSR   | active circuit status register                         |
| ADC     | address complete                                       |
| ADDR    | address                                                |
| ADP     | automatic diagnostic process                           |
| ADPTR   | address pointer register                               |
| AEOC    | alternate embedded operations channel                  |
| AERM    | alignment error rate monitor                           |
| AIBNS   | automated inward billed number screening               |
| AIS     | automated inward line screening                        |
| AIM     | application integrity monitor                          |
| AIOD    | automatic identified outward dialing                   |
| AIOD    | automatic input/output dialing                         |
| AIS     | alarm indication signal                                |
| AIS-L   | AIS for line                                           |
| AIS-P   | AIS for path                                           |
| AIU     | access interface unit                                  |
| AIU     | application interface unit                             |
| AIUEN   | access interface unit equipment number                 |
| AIULC   | access interface unit line circuit                     |
| ALCB    | access line control block                              |
| ALE     | automatic line evaluation                              |
| ALINK   | A-link                                                 |
| ALIT    | automatic line insulation test                         |
| ALMMDE  | alarm retire mode                                      |
| ALT     | automatic link transfer                                |
| ALW     | allow                                                  |
| AM      | administrative module                                  |
| AMA     | automatic message accounting                           |
| AMAI RR | AMA irregularity                                       |
| AMAT    | AMA teleprocessing                                     |
| AMEX    | asynchronous transfer mode media transfer              |
| AMI     | administrative module intervention                     |
| AMI     | alternate mark inversion                               |
| AML     | automatic maintenance limit                            |
| AMLOOS  | automatic maintenance limit out-of-service             |
| ANCB    | analog channel bank                                    |
| ANI     | automatic number identification                        |
| ANN     | announcement                                           |
| ANS     | answer                                                 |
| ANSI    | American National Standards Institute                  |
| AOC     | announcement only channel                              |
| AP      | application processor                                  |

|          |                                                    |
|----------|----------------------------------------------------|
| AP       | automated position                                 |
| APB      | associated process block                           |
| APC      | adjacent point code                                |
| APC      | application specific controller                    |
| APDL     | application processor data link                    |
| APDU     | application processor data unit                    |
| APESM    | application processor control error source mask    |
| APID     | applications processor identifier                  |
| APPLHOOK | application hook                                   |
| APPRC    | application recent change                          |
| APS      | automated position system                          |
| APS      | automatic protection switch                        |
| APT      | automatic progression testing                      |
| AQ       | associated autoquote                               |
| AQEST    | autoquote establishment                            |
| AQM      | autoquote mate analog                              |
| AR       | automatic recall                                   |
| ARC      | alternate route cancellation                       |
| ARR      | automatic ring recovery                            |
| ARS      | automatic route selection                          |
| ARU      | audio response unit                                |
| ASC      | alarm and status circuit                           |
| ASCII    | American standard code for information interchange |
| ASP      | advanced services platform                         |
| ASPLG    | advanced service platform large                    |
| ASPTF    | advanced services platform toll free               |
| ASU      | alarm and status unit                              |
| ATA      | automatic task administrator                       |
| ATCO     | automation of TCS/CPS override                     |
| ATF      | ASCII translation file                             |
| ATF      | Announcement test function                         |
| ATM      | asynchronous transfer mode                         |
| ATP      | all test pass                                      |
| ATS      | automatic terminal setup                           |
| ATTG     | attendant group                                    |
| ATTS     | automatic trunk test scheduler                     |
| AUD      | audit                                              |
| AUTISS   | automatic time slot switching                      |
| AUTOVON  | automatic voice network                            |
| AVL      | available                                          |
| AWS      | administrative work station                        |
| BCI      | blocked call indication                            |
| BCLID    | bulk calling line identification                   |
| BCST     | broadcast pump                                     |
| BE       | block errors                                       |
| BER      | bit error rate                                     |
| BERR     | buss error                                         |
| BES      | bursty errored seconds                             |
| BG       | background                                         |
| BGD      | bi-directional gating bus direction                |
| BGE      | business group element                             |
| BISO     | beginning of isolation                             |
| BIST     | built in self test                                 |
| BITS     | building integrated timing supply                  |
| BLCTR    | B data link parity counter register                |
| BLK      | block                                              |
| BLKD     | blocked                                            |
| BLO      | blocking                                           |
| BNP      | basic number portability                           |
| BNS      | billed number screening                            |
| BOLO     | back-out-last-official                             |
| BPUMP    | backup pump                                        |
| BPV      | bi-polar violations                                |
| BRCF     | business residential customer feature              |
| BRCS     | business and residential customer service          |
| BRI      | basic rate interface                               |
| BRITE    | basic rate interface transmission extension        |
| BSN      | backward sequence number                           |
| BST      | basic services terminal                            |
| BST      | bitmap salvage technique                           |
| BTSR     | bootstrapper                                       |
| BUD      | backup update database                             |

|        |                                                              |
|--------|--------------------------------------------------------------|
| BUSCR  | bus control register                                         |
| BVA    | billing validation application                               |
| BWM    | broadcast warning message                                    |
| CA     | call appearance                                              |
| CA     | community address                                            |
| CACTL  | cache control register                                       |
| CADN   | circuit administration                                       |
| CAMA   | centralized automated message accounting                     |
| CAMPON | camp-on                                                      |
| CANC   | cancel                                                       |
| CAR    | computer access restriction                                  |
| CAS    | customer account services                                    |
| CATL   | code answer test line                                        |
| CATP   | conditional all tests passed                                 |
| CAXEM  | core auxiliary error source mask                             |
| CAXES  | core auxiliary error source                                  |
| CC     | common control                                               |
| CC     | common controller                                            |
| CCB    | channel control block                                        |
| CCB    | communication control buffer                                 |
| CCB    | control communication buffer                                 |
| CCC    | commercial credit card                                       |
| CCID   | carrier issuer identification                                |
| CCIS   | common channel interoffice signaling                         |
| CCP    | common control processor                                     |
| CCQS   | centralized charge quotation system                          |
| CCR    | continuity check request                                     |
| CCRD   | calling card                                                 |
| CCS    | common channel signaling                                     |
| CCS    | hundred-call-seconds                                         |
| CCS7   | common channel signaling number 7                            |
| CCSLK  | CCS links                                                    |
| CD     | common data                                                  |
| CDAL   | control and diagnostic access link                           |
| CDAL   | control diagnostic access link                               |
| CDB    | circuit data blocks                                          |
| CDBC0M | circuit data block common                                    |
| CDBS   | customer defined billing segmentation                        |
| CDC    | call duration and charge                                     |
| CDFI   | cluster digital facility interface                           |
| CDFI   | communication link digital facility interface                |
| CDI    | control data interface                                       |
| CDM    | call disposition messages                                    |
| CDMA   | code division multiple access                                |
| CDN    | customer directory number                                    |
| CE     | critical event                                               |
| CF     | call forwarding                                              |
| CF     | control fanout                                               |
| CFAC   | cluster facility                                             |
| CFT    | craft                                                        |
| CGA    | carrier group alarm                                          |
| CGAP   | call gapping                                                 |
| CGC    | circuit group carrier                                        |
| CH     | channel                                                      |
| CHG    | charge                                                       |
| CHNG   | channel group                                                |
| CI     | carrier interconnect                                         |
| CI     | control interface                                            |
| CI     | critical information                                         |
| CIB    | control interconnect bus                                     |
| CIC    | circuit identification code                                  |
| CICADA | completion of interLATA calls accessing directory assistance |
| CICEXP | carrier identification code expansion                        |
| CIF    | corruption indication flag                                   |
| CKT    | circuit                                                      |
| CKTLIM | circuit limit                                                |
| CL     | card limit                                                   |
| CLCT   | collect                                                      |
| CLD    | called                                                       |
| CLF    | communications line fault                                    |
| CLI    | change level indicator                                       |
| CLID   | calling line identification                                  |

|        |                                                 |
|--------|-------------------------------------------------|
| CLLI   | common language location identifier             |
| CLNK   | communication link                              |
| CLNORM | communication link normalization                |
| CLR    | clear                                           |
| CLS    | combined linkset                                |
| CM     | communication module                            |
| CMCU   | communication module control unit               |
| CMISE  | common management information service element   |
| CMP    | communication module processor                  |
| CMPMSG | communication module processor message handler  |
| CNAM   | calling name                                    |
| CNC    | central node control                            |
| CND    | calling number delivery                         |
| CND    | calling number display                          |
| CNI    | common network interface                        |
| CNR    | critical node restoration                       |
| CNTL   | control                                         |
| CO     | cutover                                         |
| COCTL  | core control                                    |
| COFA   | change-of-frame alignments                      |
| COFF   | common object file format                       |
| COINOT | coin service terminal process                   |
| COM    | common controller                               |
| COMDAC | common data and control                         |
| COMGR  | command group                                   |
| COND   | conditional                                     |
| CONFIG | configuration                                   |
| CONT   | continuity                                      |
| CORC   | customer originated recent change               |
| CORES  | core error source                               |
| COT    | central office terminal                         |
| COT    | customer originated trace                       |
| CP     | Central processor                               |
| CPDL   | call processing data link                       |
| CPE    | customer premises equipment                     |
| CPI    | central processor intervention                  |
| CPISR  | CPI status register                             |
| CPN    | calling party number                            |
| CPS    | country pair screening                          |
| CPU    | call pick up                                    |
| CPU    | central processing unit                         |
| CPUT   | call pickup group                               |
| CQ     | circuit query                                   |
| CQDB   | call queue data blocks                          |
| CR     | call record                                     |
| CRA    | circuit reservation acknowledgment              |
| CRAM   | control random access memory                    |
| CRC    | cyclical redundancy checks                      |
| CRM    | circuit reservation message                     |
| CRS    | circuit reset signaling                         |
| CS     | circuit-switched                                |
| CSC    | clock synchronization circuit                   |
| CSCANS | Customer Service Computer Access Network System |
| CSD    | circuit-switched data                           |
| CSI    | Carrier selection information                   |
| CSOP   | coordinator of spooler output process           |
| CSS    | controlled slip seconds                         |
| CSU    | cache store unit's                              |
| CSV    | circuit-switched voice                          |
| CTC    | country-to-country                              |
| CTS    | clear to send                                   |
| CTS    | common time slot                                |
| CTS    | control time slot                               |
| CTTU   | centralized trunk test units                    |
| CU     | channel unit                                    |
| CU     | control unit                                    |
| CUD    | central update database                         |
| CUD    | current update database                         |
| CUMEM  | control unit memory                             |
| CURR   | current                                         |
| CVR    | circuit validation response                     |
| CVT    | circuit validation test                         |

|           |                                                          |
|-----------|----------------------------------------------------------|
| CV STATE  | call vectoring state                                     |
| DA        | digit analysis                                           |
| DA        | directory assistance                                     |
| DACC      | directory assistance call completion                     |
| DACT      | deactivating                                             |
| DAM       | dual access memory                                       |
| DAOPER    | directory assistance operator                            |
| DAP       | Display administration process                           |
| DARAM     | dual access random access memory                         |
| DAS       | digit analysis selector                                  |
| DAS/C     | directory assistance services/computer                   |
| DASC      | directory assistance system computer                     |
| DAT       | digital audio tape                                       |
| DBM       | Database manager                                         |
| DC        | Direct current                                           |
| DCBU      | D-channel backup                                         |
| DCC       | destination code cancellation                            |
| DCCB      | D-channel control block                                  |
| DCHN      | D-channel node                                           |
| DCHOOS    | D-channel out-of-service                                 |
| DCI       | dual channel/computer interconnect                       |
| DCLU      | digital carrier line unit                                |
| DCR       | device control register                                  |
| DCTU      | directly connected test unit                             |
| DCTUCOM   | directly connected test unit common                      |
| DCTUPOINT | directly connected test unit port                        |
| DD        | data delivery                                            |
| DDD       | direct distance dialed                                   |
| DDL       | derived data link                                        |
| DDMA      | diagnostic direct memory access                          |
| DEN       | digital equipment number                                 |
| DESTSM    | destination switching module                             |
| DF        | data fanout                                              |
| DF        | distribution frame                                       |
| DFC       | device file controller's                                 |
| DFC       | disk file controller                                     |
| DFI       | digital facility interface                               |
| DFIH      | host digital facilities interface                        |
| DFIH      | host/remote digital facility interface                   |
| DFIMP     | digital facility interface module processor              |
| DFSA      | data file system access                                  |
| DFTAC     | distributing frame test access circuit                   |
| DG        | Data group                                               |
| DGN       | diagnostic                                               |
| DGR       | degraded                                                 |
| DI        | data interface                                           |
| DIAG      | diagnostic                                               |
| DIAMON    | diagnostic monitor                                       |
| DID       | direct inward dialing                                    |
| DIDNC     | DI diagnostic control                                    |
| DIEMR     | DI error mask register                                   |
| DIESR     | DI error source register                                 |
| DIOP      | disk independent operation                               |
| DIOR      | direct international origination                         |
| DIP       | dual in-line package                                     |
| DIS       | disassembly                                              |
| DIST      | distribute                                               |
| DKDRV     | disk driver                                              |
| DL        | duration limit                                           |
| DLEMR     | DLI-MP interface error mask register                     |
| DLESR     | DLI-MP interface error source register                   |
| DLGSHL    | dialogue shell                                           |
| DLI       | dual link interface                                      |
| DLI-MP    | dual link interface-module processor/module controller ^ |
| DLIT      | demand LIT                                               |
| DLN       | direct link node                                         |
| DLP       | data link processor                                      |
| DLT       | data link terminal                                       |
| DLTU      | digital line and trunk unit                              |
| DLTURH    | digital line and trunk unit host                         |
| DMA       | direct memory access                                     |
| DMAC      | direct memory access controller                          |

|          |                                                               |
|----------|---------------------------------------------------------------|
| DMCH     | direct memory access channel                                  |
| DMI      | dual message interface                                        |
| DMQ      | deferred maintenance queue                                    |
| DN       | directory number                                              |
| DNS      | directory numbers                                             |
| DNU-S    | digital networking unit - SONET                               |
| DNU-S    | digital networking unit - synchronous optical network         |
| DNUSCC   | DNU-S common controller                                       |
| DNUSCD   | DNU-S common data                                             |
| DOC      | dynamic overload control                                      |
| DOTTO    | direct international origination offered transfer to operator |
| DPA      | dump all                                                      |
| DPC      | destination point code                                        |
| DPIDB    | direct PIDB                                                   |
| DPIDB    | directly-connected peripheral interface data bus              |
| DPT      | diagnostic phase table                                        |
| DRHR     | Division of revenue hourly report                             |
| DS1      | digital signal level one                                      |
| DS1SFAC  | digital signal level 1 facility                               |
| DSC      | DSU subtending circuit                                        |
| DSC      | digital service circuit                                       |
| DSC      | double seizing control                                        |
| DSCH     | dual serial channel                                           |
| DSE      | direct signaling event                                        |
| DSL      | digital service line                                          |
| DSL      | digital subscriber line                                       |
| DSLGM    | digital subscriber line group                                 |
| DSLGM    | digital subscriber line group and member                      |
| DSN      | defense switched network                                      |
| DSP      | digital signal processing                                     |
| DSU      | digital service unit                                          |
| DSU2-RAF | digital service unit 2 - recorded announcement function       |
| DTA      | dial through announcement                                     |
| DTCB     | Digital channel bank                                          |
| DTF      | dial tone first                                               |
| DTLU     | Digital line trunk unit                                       |
| DTMF     | dual tone multi-frequency                                     |
| DTR      | data terminal ready                                           |
| DUFR     | Dynamic update function replacer                              |
| DUI      | direct user interface                                         |
| DUIC     | direct user interface controller                              |
| DUR      | duration                                                      |
| EA       | equal access                                                  |
| EADAS    | engineering and administrative data acquisition system        |
| EAI      | emergency action interface                                    |
| EAIU     | expansion access interface unit                               |
| EAN      | equipment access network                                      |
| EBD      | enhanced buffer dump                                          |
| EBU      | E bus unit                                                    |
| ECD      | equipment configuration database                              |
| ECDMAN   | equipment configuration database manager                      |
| ECDN     | expanded customer directory number                            |
| ECMA     | European computer manufacturers                               |
| ECP      | executive cellular processor                                  |
| EDP-R    | event detection point request                                 |
| EDSC     | electronic directory service customers                        |
| EDSL     | extended digital subscriber line                              |
| EI       | emergency interrupt                                           |
| EIB      | Ethernet interface board                                      |
| EIH      | by the error interrupt handler                                |
| EIR      | enhanced information report                                   |
| EIS      | external information system                                   |
| EISO     | end of isolation                                              |
| EL       | enhanced limit                                                |
| ELI      | electrical line interface                                     |
| ELI      | electrical loop interface                                     |
| ELS      | electronic loop segregation                                   |
| EMA      | extended memory addressing                                    |
| EN       | equipment number                                              |
| ENAC     | Engineering Network Administration Center                     |
| EO       | end office                                                    |
| EOC      | embedded operations channel                                   |

|         |                                                  |
|---------|--------------------------------------------------|
| EOC     | extended operations channel                      |
| EOF     | end-of-file                                      |
| EOT     | end-of-transmission                              |
| EPCS    | expanded personal communications services        |
| EOCU    | equipped CUs                                     |
| EQL     | equipment location                               |
| EQUIP   | Equipment                                        |
| ERAM    | early RAM                                        |
| ERR     | Error                                            |
| ES      | errored seconds                                  |
| ESA     | enhanced 911 service adjunct                     |
| ESN     | emergency service number                         |
| ESP     | enhanced service provider                        |
| ESP     | essential service protection                     |
| ESR     | error source register                            |
| ET      | elapsed time                                     |
| ETE     | end-to-end                                       |
| EVRC    | enhanced variable rate coding                    |
| EXT     | external                                         |
| FAC     | facility                                         |
| FACIL   | facility                                         |
| FACR    | feature activation counting and reconciliation   |
| FCG     | false cross or ground                            |
| FE      | family of equipment                              |
| FE      | far end                                          |
| FELP    | far end loop                                     |
| FG      | foreground                                       |
| FGD     | feature group D                                  |
| FI      | facility interface                               |
| FI      | full initialization                              |
| FIB     | forward indicator bit                            |
| FID     | feature identification                           |
| FIDB    | facility interface data bus                      |
| FIFO    | first in, first out                              |
| FIP     | fully initializing protocol                      |
| FIW     | frame information word                           |
| FMC     | forced management center                         |
| FMGR    | file manager                                     |
| FMS     | flat and measured services                       |
| FN      | file name                                        |
| FNC     | forward number check                             |
| FPI     | feature package one                              |
| FPC     | foundation peripheral controller                 |
| FPCR    | full point code routing                          |
| FPI     | full process init                                |
| FR      | fault recovery                                   |
| FRC     | forced                                           |
| FRL     | facility restriction level                       |
| FRPH    | frame relay protocol handler                     |
| FS      | failed seconds                                   |
| FS      | forced switch                                    |
| FSCMPT  | file system compaction                           |
| FSLINK  | file system link                                 |
| FTON    | far to near                                      |
| FTS     | Field test set                                   |
| FTS     | federal telecommunication system                 |
| FUNCL   | function code latch                              |
| FX      | foreign exchange                                 |
| GAC     | group alerting circuit                           |
| GDG     | guard data guard                                 |
| GDSF    | global digital services function                 |
| GDSUCOM | global digital service unit common               |
| GDX     | gated diode crosspoint                           |
| GDXACC  | gated diode crosspoint access                    |
| GDXC    | gated diode crosspoint compensator               |
| GDXCON  | gated diode crosspoint control                   |
| GDXCON  | gated diode crosspoint controller                |
| GDXCTRL | gated diode crosspoint control                   |
| GKCCR   | generated key collection and compression routine |
| GRASP   | generic access package                           |
| GRC     | global recent change                             |
| GRID    | gated diode crosspoint grid                      |

|           |                                                       |
|-----------|-------------------------------------------------------|
| GRIDBD    | GRID board                                            |
| GROW      | growth                                                |
| GRS       | group reset                                           |
| GSM       | global switching module                               |
| GTT       | global title translation                              |
| GVAR      | global variable                                       |
| HA        | host adapter                                          |
| HDFI      | host digital facilities interface                     |
| HDR       | header                                                |
| HDSU      | hardware digital service unit                         |
| HDWCHK    | hardware check                                        |
| HFAC      | host facility                                         |
| HISRC     | high interrupt source                                 |
| HIST      | history                                               |
| HLR       | home location register                                |
| HLSC      | high level service circuit                            |
| HOBIC     | hotel billing information center                      |
| HOBIS     | hotel billing information system                      |
| HOC       | host collector                                        |
| HPQ       | high priority queue                                   |
| HRSMR     | hardware reset source mask register                   |
| HRSRC     | hardware reset source                                 |
| HSD       | high-speed synchronous datalink                       |
| HSDC      | high-speed synchronous datalink controller            |
| HSM       | host switching module                                 |
| HSR       | hardware status register                              |
| HV        | hardware version                                      |
| HW        | high-and-wet                                          |
| IAM       | initial address message                               |
| IBNS      | international billed number screening                 |
| IC        | interLATA carrier                                     |
| IC        | interexchange carrier                                 |
| ICCV      | international credit card validation                  |
| ICL       | inter-RSM communication link                          |
| ICL       | inter-cluster link                                    |
| ICL       | intra-cluster link                                    |
| ICS       | inmate calling services                               |
| ICVC      | international card verification center                |
| ID        | identifier                                            |
| IDCU      | integrated digital carrier unit                       |
| IDENT     | identity                                              |
| IDLC      | integrated digital loop carrier                       |
| IDP       | individual dialing plan                               |
| IE        | information element                                   |
| IECSST    | inter-exchange carrier start signal timeout           |
| IFAC      | integrated digital carrier unit facility              |
| IFAC      | IDCU facility                                         |
| IFB       | interframe buffer                                     |
| ILA       | Idle link assurance                                   |
| ILEN      | IDCU line equipment number                            |
| ILEN      | integrated digital carrier unit line equipment number |
| ILHB      | incoming line history block                           |
| IM        | input message                                         |
| IM        | interface module                                      |
| IMS       | interface module system                               |
| IMS       | Interprocess message switch                           |
| IMSRMVRST | interprocess message switch remove/restore            |
| IMT       | intermodule trunk                                     |
| IMTTASK   | inter-module trunk task                               |
| INCBLK    | INC block                                             |
| INCR      | Incremental                                           |
| INDN      | incoming directory number                             |
| INEN      | IDLC network equipment number                         |
| INH       | inhibit                                               |
| INH       | inhibited                                             |
| INIT      | initialization                                        |
| INT       | interval                                              |
| INWATS    | inward wide area telecommunications service           |
| IO        | input-output                                          |
| IODRV     | input/output driver                                   |
| IOMI      | input and output message interface                    |
| IOP       | input/output processor                                |

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| IP       | interface processor                                                              |
| IP       | internal protocol                                                                |
| IPCT     | in-progress call trace                                                           |
| IPM      | interruptions per minute                                                         |
| IREX     | installation routine exercise                                                    |
| IRN      | integrated ring node                                                             |
| IS       | in-service                                                                       |
| ISAT     | ISDN attendant                                                                   |
| ISC      | intelligent serial controller                                                    |
| ISDN     | integrated services digital network                                              |
| ISDNPKT  | Integrated services digital network packet                                       |
| ISGEN    | Incremental system generation                                                    |
| ISLC     | integrated subscriber loop carrier                                               |
| ISLU     | integrated services line unit                                                    |
| ISLU     | integrated switching line unit                                                   |
| ISLUCC   | integrated services line unit common controller                                  |
| ISLUCD   | integrated services line unit common data                                        |
| ISLUHLS  | integrated services line unit high level service circuit                         |
| ISLULC   | integrated services line unit line card                                          |
| ISLULCKT | integrated services line unit line circuit                                       |
| ISLULGC  | integrated services line unit line group controller                              |
| ISLUMAN  | integrated services line unit metallic access network                            |
| ISLUPIDB | integrated services line unit peripheral interface data bus                      |
| ISLURG   | integrated services line unit ringing generators                                 |
| ISM      | inter-switching module                                                           |
| ISMNAIL  | inter-SM nailup                                                                  |
| ISMQLNK  | inter-switching module communication link                                        |
| ISP      | Intermediate switching point                                                     |
| ISTF     | integrated services test function                                                |
| ISTF     | integrated services transmission function                                        |
| ITAP     | incoming test access port                                                        |
| ITNA     | improved third number acceptance                                                 |
| ITU-TS   | International Telecommunication Union - Telecommunication Standardization Sector |
| IUN      | IMS user node                                                                    |
| IUN      | interprocessor message switch user node                                          |
| JIP      | jurisdiction information parameter                                               |
| KP       | kernel process                                                                   |
| KP       | key pulse                                                                        |
| LAC      | line applications for consumers                                                  |
| LALT     | LIDB alternate                                                                   |
| LASS     | local area signaling services                                                    |
| LASS     | local area switching services                                                    |
| LATA     | local access and transport area                                                  |
| LATA     | local access transport area                                                      |
| LAU      | link adapter unit                                                                |
| LB       | line board                                                                       |
| LB       | little boot                                                                      |
| LC       | line card                                                                        |
| LC       | line circuit                                                                     |
| LCA      | local alarm                                                                      |
| LCCB     | logical channel control block                                                    |
| LCEN     | line card equipment number                                                       |
| LCKEN    | line circuit equipment number                                                    |
| LCN      | logical channel number                                                           |
| LDFT     | load disk from tape                                                              |
| LDSCUCOM | local digital service circuit unit common                                        |
| LDSF     | local digital services function                                                  |
| LDSU2    | local digital service unit - model 2 common                                      |
| LDSUCOM  | local digital service unit common                                                |
| LE       | link establishment                                                               |
| LEC      | local exchange carrier                                                           |
| LEN      | line equipment number                                                            |
| LG       | line group                                                                       |
| LGC      | line group controller                                                            |
| LI       | link interface                                                                   |
| LIA      | link inhibit acknowledgement                                                     |
| LIDB     | line information database                                                        |
| LIT      | line insulation testing                                                          |
| LLCB     | logical link control block                                                       |
| LN       | leased network                                                                   |
| LN       | link node                                                                        |
| LNP      | local number portability                                                         |

|          |                                                   |
|----------|---------------------------------------------------|
| LOFA     | loss of frame alignment                           |
| LOP      | language override parameter                       |
| LP       | line pack                                         |
| LP       | local processor                                   |
| LP       | lock out protection                               |
| LPA      | loop-back acknowledgement                         |
| LPBK     | loop-back                                         |
| LPS      | log/print status                                  |
| LRAM     | late RAM                                          |
| LRN      | location routing number                           |
| LRT      | Local RT                                          |
| LS       | linkset                                           |
| LSF      | LASS selective features                           |
| LSI      | loop side interface                               |
| LSM      | local switching modules                           |
| LT       | line termination                                  |
| LTD      | local test desk                                   |
| LTD      | long term denial                                  |
| LTE      | line terminating equipment                        |
| LTP      | logical test ports                                |
| LTSB     | line time slot bridging                           |
| LTSBDB   | LTSB data block                                   |
| LTTYPE   | LT hardware type                                  |
| LU       | line unit                                         |
| LU2      | line unit - model two                             |
| LU3      | line unit - model three                           |
| LUA      | link uninhibit acknowledgement                    |
| LUCHAN   | line unit channel                                 |
| LUCHBD   | line unit channel board                           |
| LUCOMC   | line unit common control                          |
| LUCOMC   | line unit common data and control                 |
| LUHLS    | line unit high level service circuit              |
| LUPEX    | line unit path exerciser                          |
| MA       | metallic access                                   |
| MAB      | metallic access bus                               |
| MAC      | memory administration center                      |
| MACTL    | memory auxiliary control                          |
| MAN      | metallic access network                           |
| MASC     | main store controller                             |
| MBD      | message buffer dump                               |
| MBESM0   | memory board 0 error source mask                  |
| MBESM1   | memory board 1 error source mask                  |
| MBESM2   | memory board 2 error source mask                  |
| MBESM3   | memory board 3 error source mask                  |
| MBTP     | monitoring bridge terminal process                |
| MC       | microcode                                         |
| MC       | modular constructed                               |
| MCA      | multiple call appearance                          |
| MCC      | Master Control Center                             |
| MCH      | Maintenance channel                               |
| MCRT     | maintenance terminal                              |
| MCTRL    | memory control                                    |
| MCTSI    | module control time slot interchange              |
| MCTSI    | module control/time slot interchange              |
| MCTSI    | module controller time slot interchange           |
| MCTSI    | module controller/time slot interchange           |
| MCTSI    | slot interchange                                  |
| MCTU2    | module controller and time slot interchanger unit |
| MCU      | module controller unit                            |
| MD       | message delivery                                  |
| MDCT     | major device chain table                          |
| MDCT     | minor device chain table                          |
| MDCT     | minor device configuration table                  |
| MDCT     | monitor device chain table                        |
| MDCT-RID | Minor device chain table record ID                |
| MDII     | machine-detected interoffice irregularity         |
| MECH     | more efficient call handling                      |
| MELNK    | MCTSI-based ethernet links                        |
| MEMES    | memory error source                               |
| MESMR    | memory error source mask register                 |
| MF       | multi-frequency                                   |
| MGDSC    | message discard                                   |

|        |                                          |
|--------|------------------------------------------|
| MGSC   | message service customer                 |
| MH     | message handler                          |
| MHD    | moving head disk                         |
| MI     | message interface                        |
| MIB    | message interface bus                    |
| MICU   | message interface/clock unit             |
| MIM    | maintenance information message          |
| MIN    | minimum                                  |
| MINT   | multifarious Intra-Network Trunk         |
| MIRA   | maintenance input request administrator  |
| MISC   | Miscellaneous                            |
| MISLNK | management information system data link  |
| MLHG   | multi-line hunt group                    |
| MLI    | message link interface                   |
| MLNC   | matching loss and no circuit             |
| MLPP   | multi-level precedence and preemption    |
| MLTS   | micro level test set                     |
| MMP    | module message processor                 |
| MMRSM  | multi-module remote switching module     |
| MMSU   | modular metallic service unit            |
| MMU    | memory management unit                   |
| MOC    | measurement output control               |
| MON    | monitor                                  |
| MOP    | mount off-line partition                 |
| MP     | micro processor                          |
| MP     | modem pool                               |
| MP     | module processor                         |
| MP     | multi-point                              |
| MPG    | modem pool group                         |
| MPR    | machine performance report               |
| MRA    | maintenance request administrator        |
| MRVA   | MTP routing verification acknowledgement |
| MRVT   | MTP routing verification test            |
| MS     | manual switch                            |
| MSCU   | message switch control unit              |
| MSGH   | message handler                          |
| MSGH   | message switch                           |
| MSGH   | messages                                 |
| MSKP   | message switch kernel process            |
| MSMTCH | mismatch                                 |
| MSPU   | message switch peripheral unit           |
| MSS    | Message Service System                   |
| MSU    | metallic service unit                    |
| MSUCOM | MSU common                               |
| MSUCOM | metallic service unit common             |
| MT     | magnetic tape                            |
| MTB    | metallic test bus                        |
| MTC    | magnetic tape controller                 |
| MTCE   | maintenance                              |
| MTIB   | metallic test interconnect bus           |
| MTIBAX | metallic test interconnect bus access    |
| MTP    | message transfer part                    |
| MTTY   | maintenance teletypewriter               |
| MTTYC  | maintenance teletypewriter controller    |
| MUPH   | multiple position hunt                   |
| MWI    | message waiting indicator                |
| NA     | not applicable                           |
| NAI    | network access interrupt                 |
| NAI    | number of address indication             |
| NANP   | North American numbering plan            |
| NAP    | name privacy                             |
| NC     | network clock                            |
| NCAS   | non-call associated services             |
| NCD    | network call denial                      |
| NCLK   | network clock                            |
| NCOSC  | network clock oscillator                 |
| NCP    | network control point                    |
| NCREF  | network clock reference                  |
| NCT    | network control and timing               |
| NE     | near-end                                 |
| NEN    | network equipment number                 |
| NESS   | network element services signaling       |

|          |                                            |
|----------|--------------------------------------------|
| NEXMEM   | next member                                |
| NI       | national ISDN                              |
| NID      | network ID                                 |
| NLBIST   | NLI built in self test                     |
| NLEMR    | NLI error mask register                    |
| NLESR    | NLI error source register                  |
| NLI      | network link interface                     |
| NLLCR    | NLI link control register                  |
| NM       | network management                         |
| NMI      | non-maskable interrupt                     |
| NMNODES  | network management node schedule           |
| NMTHD    | Network management threshold               |
| NNDA     | name/number display allowed                |
| NNP      | name/number privacy                        |
| NOC      | Network Operations Center                  |
| NOP      | no-operation message                       |
| NP       | node processor                             |
| NPA      | numbering plan area                        |
| NRA      | network remote access                      |
| NREL     | new release                                |
| NRODD    | non-redundant office dependent data        |
| NRT      | no response test                           |
| NS       | number services                            |
| NSD      | network services division                  |
| NSEP     | national security emergency preparedness   |
| NSN      | network switch number                      |
| NT       | network termination                        |
| NTE      | network termination equipment              |
| NTR      | no test run                                |
| OAP      | OSPS administrative processor              |
| OC       | office code                                |
| OCU      | office channel unit                        |
| ODB      | on-demand B-channel                        |
| ODBE     | office database editor                     |
| ODD      | office dependent data                      |
| ODMA     | operational direct memory access           |
| ODP      | on-demand packet                           |
| ODPS     | on-demand packet-switched                  |
| ODR      | optional data region                       |
| OE       | office equipment                           |
| OFC      | official                                   |
| OFFN     | off-normal                                 |
| OFLBOOT  | offline boot                               |
| OFR      | office records                             |
| OGEN     | overwrite generator                        |
| OILD     | Overwrite incremental loader               |
| OIOP     | operational input/output processor         |
| OKP      | operational kernel process                 |
| OLAC     | OSPS line applications for consumers       |
| OLHB     | outgoing line history block                |
| OLI      | originating line information               |
| OLS      | originating line screening                 |
| OMDB     | output message database                    |
| ONAC     | Operations Network Administration Center   |
| ONI      | operator number identification             |
| ONTC     | office network and timing complex          |
| ONTCCOM  | office network and timing complex common   |
| OOF      | out-of-frame                               |
| OOS      | out-of-service                             |
| OOST     | out-of-service test                        |
| OP       | output                                     |
| OPC      | origination point code                     |
| OPT      | operator position terminal                 |
| ORIG     | originating                                |
| ORM      | optical remote module                      |
| OSC      | Operator Service Center                    |
| OSXC     | network clock 2 oscillator cross-couple    |
| OSDS     | Operating System for Distributed Switching |
| OSPS     | Operator Services Position System          |
| OSPSPORT | OSPS port                                  |
| OSR      | operational software restart               |
| OSS      | Operational Support System                 |

|         |                                                   |
|---------|---------------------------------------------------|
| OST     | originating station type                          |
| OST     | operating system trap                             |
| OT      | originating treatment                             |
| OT      | outpulse timing                                   |
| OTA     | OSPS toll and assistance                          |
| OTAP    | outgoing test access port                         |
| OTGBLK  | OTG block                                         |
| OTO     | office-to-office                                  |
| OTR     | operator trouble report                           |
| OUTDN   | outgoing DN                                       |
| OVOEQ   | OTA call volume and equipment usage               |
| OVRWT   | overwrite                                         |
| PAFFR   | pre-active flip-flop register                     |
| PAS     | protected application segment                     |
| PAUTH   | person authority                                  |
| PB      | Packet business                                   |
| PB      | position busy                                     |
| PBX     | private branch exchange                           |
| PC      | peripheral controller                             |
| PC      | point code                                        |
| PCB     | process control block                             |
| PCBLA   | process control block link area                   |
| PCGRP   | person-command group                              |
| PCN     | privacy of calling name                           |
| PCPAUD  | processor control process audit                   |
| PCS     | personal communications services                  |
| PCSD    | and peripheral controller subdevice               |
| PCSDN   | personal communications services directory number |
| PCTF    | per-call test failure                             |
| PCUSD   | Packet switching uniform call distribution        |
| PD      | previous day                                      |
| PDT     | partial dial time-out                             |
| PDU     | protocol data unit                                |
| PEC     | protocol error code                               |
| PER     | protocol error record                             |
| PERPH   | peripheral                                        |
| PF      | packet fanout                                     |
| PF      | printout follows                                  |
| PFA     | private facilities access                         |
| PFR     | peripheral fault recovery                         |
| PH      | protocol handler                                  |
| PHA     | packet handler for ATM                            |
| PHDB    | protocol handler data bus                         |
| PHV     | packet handler voice                              |
| PI      | packet interface                                  |
| PI      | peripheral interface                              |
| PIB     | power interlock board                             |
| PIC     | peripheral interface controller                   |
| PIC     | pre-subscribed inter-exchange carrier             |
| PICB    | peripheral interface control bus                  |
| PID     | process ID                                        |
| PIDB    | peripheral interface data bus                     |
| PIN     | personal identification number                    |
| PIO     | processor input/output                            |
| PIO     | program input/output                              |
| PIT     | programmable interval timer                       |
| PKG     | package                                           |
| PKTDN   | packet directory number                           |
| PKTPIPE | packet pipe                                       |
| PL      | purchase limit                                    |
| PLBIST  | PLI built in self test register                   |
| PLEMR   | PLI error mask register                           |
| PLESR   | PLI error source register                         |
| PLI     | peripheral link interface                         |
| PLLCR   | PLI link control register                         |
| PM      | performance monitoring                            |
| PM      | protocol monitoring                               |
| PMCFE   | protocol monitoring common format file            |
| PMCR    | the plant measurements common report              |
| PMDB    | process message data block                        |
| PMGR    | process-manager                                   |
| PMS     | plant measurements system                         |

|           |                                                  |
|-----------|--------------------------------------------------|
| PMU       | precision measurement unit                       |
| PNI       | private network interface                        |
| POC       | peripheral object file converter                 |
| POH       | path overhead                                    |
| POTS      | plain old telephone service                      |
| PP        | packet pipe                                      |
| PPB       | permanent packet B-channel                       |
| PPC       | pump peripheral controller                       |
| PPM       | packet pipe member                               |
| PPMTC     | periodic pulse metering circuit                  |
| PPOCC     | pre-paid overtime coin calls                     |
| PPSRV     | Pre-port service                                 |
| PR        | packet routing                                   |
| PRERCR    | pre-software release recent change reapplication |
| PREV      | previous                                         |
| PRI       | primary rate interface                           |
| PLR       | population rule language                         |
| PRM       | process recovery message                         |
| PROC      | processor                                        |
| PROC1     | processor status 1 register                      |
| PROC2     | processor status 2 register                      |
| PROC3     | processor status 3 register                      |
| PROFL     | profile                                          |
| PROT      | protection                                       |
| PROT      | protocol                                         |
| PROTO     | protocol circuit                                 |
| PRTBN     | scan port B                                      |
| PS        | packet switching                                 |
| PSAP      | public safety answering point                    |
| PSD       | packet-switched data                             |
| PSGRP     | packet switching group                           |
| PSLNK     | link                                             |
| PSLT      | periodic signaling link test                     |
| PSML      | packet switch maintenance limit                  |
| PSSWD     | Password                                         |
| PSU       | packet switch unit                               |
| PSUCOM    | packet switch unit common                        |
| PSUEN     | Packet switching unit equipment number           |
| PSUPH     | packet switch unit protocol handler              |
| PSW       | process status word                              |
| PTC       | path terminating equipment                       |
| PTRACE    | program trace                                    |
| PTS       | peripheral time-slot                             |
| PTSB      | packet switching unit time slot block            |
| PU        | peripheral units                                 |
| PU        | program update                                   |
| PURGE-CNT | purge count                                      |
| PUT       | port under test                                  |
| PUTBRG    | port under test bridge                           |
| PVN       | private virtual network                          |
| PWRUP     | power-up                                         |
| PX        | power cross                                      |
| QGL       | QLPS gateway processor link                      |
| QGP       | QLPS gateway processor                           |
| QLFR      | QLPS fault recovery                              |
| QLFR CON  | QLPS fault recovery configuration                |
| QLI       | QLPS interface                                   |
| QLPS      | quat-link packet switch                          |
| QTG       | queuing for trunk group                          |
| QTMSLNK   | QLPS time multiplex switch links                 |
| QTS       | quarter time-slot                                |
| QUICC     | quad integrated communications controller        |
| RAF       | recorded announcement function                   |
| RAM       | random access memory                             |
| RAO       | regional accounting office                       |
| RAO       | revenue accounting office                        |
| RAP       | recorded announcement ports                      |
| RAS       | remote alarm section                             |
| RAU       | remote switching module alarm unit               |
| RBPSC     | Remote BLDG/PWR MSU scan points                  |
| RBPSC     | Remote building/power MSU scan point             |
| RBPSC     | remote BLDG/PWR MSU scan points                  |

|         |                                                      |
|---------|------------------------------------------------------|
| RC      | receive control                                      |
| RC      | recent change                                        |
| RCV     | recent change/verify                                 |
| RCF     | ring continuity failure                              |
| RCIW    | receive cell information word                        |
| RCL     | remote communication link                            |
| RCLK    | remote clock                                         |
| RCOSC   | remote clock oscillator                              |
| RCOXC   | remote clock oscillator cross couple                 |
| RCREF   | remote clock reference                               |
| RCV     | recent change and verify                             |
| RCXC    | remote clock cross couple                            |
| RDFI    | remote switching module digital facilities interface |
| RDI     | remote defect indication                             |
| RDI-L   | RDI for line                                         |
| RDI-P   | RDI for path                                         |
| RDT     | remote digital terminal                              |
| RDTA    | remote digital test access                           |
| REFERR  | reference error                                      |
| REG     | register                                             |
| REMACS  | remote access subsystem                              |
| REPT    | report                                               |
| REX     | routine exercise                                     |
| RFD     | receive frame descriptor                             |
| RFIW    | receive frame information word                       |
| RG      | ringing generator                                    |
| RGRASP  | ring generic access package                          |
| RI      | ring interface                                       |
| RID     | record identification number                         |
| RISLU   | remote integrated services line unit                 |
| RISLUCC | remote ISLU common control                           |
| RIUSBL  | ring interface usable                                |
| RLG     | release guard                                        |
| RLI     | remote link interface                                |
| RMF     | recovery message formatter                           |
| RMV     | remove                                               |
| RN      | redirecting number                                   |
| RN      | ring node                                            |
| RNA     | ring node address                                    |
| RNMS    | remote network management system                     |
| RODD    | redundant office dependent data                      |
| ROM     | read only memory                                     |
| ROP     | receive-only printer                                 |
| ROS     | request out-of-service                               |
| RPC     | ring peripheral controller                           |
| RPCN    | ring peripheral controller node                      |
| RPCU    | radio port controller unit                           |
| RPI     | return-to-the-point-of-interrupt                     |
| RPT     | repeat                                               |
| RR      | reroute                                              |
| RRCLK   | remote clock                                         |
| RSC     | reset circuit                                        |
| RSM     | remote switching module                              |
| RSMASK  | reset mask                                           |
| RST     | reset                                                |
| RST     | restore                                              |
| RSTSR   | reset error source register                          |
| RT      | remote terminal                                      |
| RTAG    | return tag                                           |
| RTBM    | real time billing memory                             |
| RTC     | real time clock                                      |
| RTCD    | real time call detail                                |
| RTI     | routing index                                        |
| RTN     | routine                                              |
| RTRS    | Real Time Rating System                              |
| RTRS    | real-time rating service                             |
| RTS     | real time status                                     |
| RTT     | reply to translation test                            |
| RVF     | restore verify test                                  |
| RVPT    | revertive pulsing transceiver                        |
| SA      | sub-address                                          |
| SAB     | stand-alone billing                                  |

|         |                                                        |
|---------|--------------------------------------------------------|
| SAB     | subaccount billing                                     |
| SAC     | service access code                                    |
| SAD     | System access delay                                    |
| SAMEM   | stand-alone billing memory                             |
| SAPI    | service access point identifier                        |
| SAS     | service announcement system                            |
| SAS     | sender attached signal                                 |
| SBUS    | SCSI bus                                               |
| SCA     | selective call acceptance                              |
| SCAN    | scan point board                                       |
| SCANS   | software change administration and notification system |
| SCC     | Switching Control Center                               |
| SCCP    | signaling connection control part                      |
| SCF     | selective call forwarding                              |
| SCMDB   | shared call model data block                           |
| SCP     | service control point                                  |
| SCR     | selective call rejection                               |
| SCSD    | scanner and signal distributor                         |
| SCSDC   | scanner and signal distributor controller              |
| SCSI    | small computer system interface                        |
| SD      | signal degrade                                         |
| SDA     | selective distinctive alert                            |
| SDAP    | speed dialing auto-provisioning                        |
| SDC     | speed dial code                                        |
| SDF     | special device file                                    |
| SDFI    | SLC <sup>®</sup> digital facility interface            |
| SDFN    | speed dial forward number                              |
| SDH     | synchronous digital hierarchy                          |
| SDH-TE  | synchronous digital hierarchy - transport equipment    |
| SDL     | signaling data link                                    |
| SDL     | speed dial list                                        |
| SDL     | synchronous data link                                  |
| SDLCL   | synchronous data link controller                       |
| SDN     | software defined network                               |
| SDP     | software demand paging                                 |
| SDS     | shared data segment                                    |
| SES     | session                                                |
| SES     | severely errored seconds                               |
| SESMR   | summary error source mask register                     |
| SESR    | summary error source register                          |
| SF      | signal failure                                         |
| SFG     | simulated facilities group                             |
| SFI     | signal facility interface                              |
| SG      | service group                                          |
| SG      | system generation                                      |
| SGEN    | system generation                                      |
| SGRO    | special growth                                         |
| SH      | speech handler                                         |
| SH TRK  | speech handler trunk                                   |
| SHADDR  | shadow address register                                |
| SHBCR   | shadowed bus control register                          |
| SHDN    | shared directory number                                |
| SHOPR   | shadowed operations register                           |
| SI      | system integrity                                       |
| SID     | site identification                                    |
| SID     | station identification                                 |
| SILC    | selective incoming load control                        |
| SIM     | system integrity monitor                               |
| SIMCNTL | SIM monitor control                                    |
| SIO     | service information octet                              |
| SIOF    | system integrity output formatter                      |
| SL      | single limit                                           |
| SLE     | screen list editing                                    |
| SLIM    | subscriber line instrument measurement                 |
| SLK     | signaling links                                        |
| SLMK    | signaling link maintenance kernel                      |
| SLS     | signaling link selection                               |
| SM      | switching module                                       |
| SMD     | storage module drive                                   |
| SME     | signaling message encryption                           |
| SMP     | switching module processor                             |

|        |                                                   |
|--------|---------------------------------------------------|
| SMS    | Service Management System                         |
| SMST   | Switching Module System test                      |
| SNAT   | signaling network administration time             |
| SNKNCT | sink network, control, and timing                 |
| SNM    | signaling network management                      |
| SNTM   | signaling network traffic management              |
| SODD   | static office-dependent data                      |
| SOF    | spooler output function                           |
| SOH    | section overhead                                  |
| SONET  | synchronous optical network                       |
| SOP    | service order profile                             |
| SOP    | spooler output process                            |
| SOST   | special operator services traffic                 |
| SP     | scan point                                        |
| SP     | signal processor                                  |
| SPCTL  | SP control                                        |
| SPESR  | SP error source register                          |
| SPID   | service profile ID                                |
| SPP    | single process purge                              |
| SQA    | simulated facility group queuing announcement     |
| SRA    | switching resource allocator                      |
| SRCNCT | Source network, control, and timing               |
| SRSMR  | software reset source mask register               |
| SRSRC  | software reset source register                    |
| SRST   | signaling route set test                          |
| SRVT   | SCCP routing verification test                    |
| SSC    | Special services code                             |
| SSD    | secondary start dial                              |
| SSD    | shared secret data                                |
| SSI    | small scale integration                           |
| SSN    | subsystem number                                  |
| SSP    | service switching point                           |
| SSR    | system status register                            |
| SSTR   | service selective trunk reservation               |
| STBY   | standby                                           |
| STD    | short term denial                                 |
| STDBY  | standby                                           |
| STE    | switch terminating equipment                      |
| STE    | section terminating equipment                     |
| STF    | some test fail                                    |
| STKWD  | stack window                                      |
| STLWS  | supplemental trunk and line workstation           |
| STP    | service transfer point                            |
| STP    | signaling transfer point                          |
| STP    | stop                                              |
| STRM   | signaling traffic route and management            |
| STS    | synchronous transport signal                      |
| STSFAC | synchronous transport signal facility             |
| STSX   | synchronous transport signal electrical interface |
| SU     | signal unit                                       |
| SU     | software update                                   |
| SUBRR  | subunit ready register                            |
| SUERM  | signaling unit error rate monitor                 |
| SVC    | service circuit                                   |
| SWPCT  | subunit write-protect control                     |
| SYS    | system                                            |
| T&A    | toll and assistance                               |
| TAC    | Technical Assistance Center                       |
| TAC    | test access circuit                               |
| TAOPER | toll assistance operator                          |
| TAU    | trunk access unit                                 |
| TAUTH  | terminal authority                                |
| TBCU   | test bus control unit                             |
| TBCU   | trunk bus control unit                            |
| TC     | transaction capability                            |
| TCA    | threshold crossing alert                          |
| TCAP   | transaction capability application part           |
| TCGRP  | terminal-command group                            |
| TCIW   | transmit cell information word                    |
| TCN    | T1FA control node                                 |
| TCS    | terminating code screening                        |
| TDB    | task data block                                   |

|         |                                             |
|---------|---------------------------------------------|
| TDM     | time division multiplexing                  |
| TDP-R   | trigger detection point request             |
| TDTP    | traffic diversion terminal process          |
| TEC     | test execution control                      |
| TEI     | terminal endpoint identifier                |
| TEN     | trunk equipment number                      |
| TERA    | trunk error analysis                        |
| TERM    | terminal                                    |
| TERM    | termination                                 |
| TFD     | transmit frame descriptor                   |
| TG      | trunk group                                 |
| TGC     | trunk group controls                        |
| TGMNCNT | trunk group member threshold count          |
| TGSR    | terminal group station restrictions         |
| TKG     | trunk group                                 |
| TKGMN   | trunk group member number                   |
| TLP     | trouble locating procedure                  |
| TLWS    | trunk and line workstation                  |
| TM      | terminal management                         |
| TM      | timer                                       |
| TMC     | timeslot management channel                 |
| TMS     | time-multiplexed switch                     |
| TMSLNK  | time multiplexed switch link                |
| TMSU    | TMS switch unit                             |
| TMUX    | transmission multiplexer                    |
| TNS     | transit network selection                   |
| TO      | time-out                                    |
| TOD     | time of day                                 |
| TP      | test position                               |
| TPR     | terminating point restriction               |
| TQ      | trunk query                                 |
| TQA     | trunk group queuing announcement            |
| TR      | trunk reservation                           |
| TRCU    | transmission rate converter unit            |
| TRFC30  | 30-minute traffic report                    |
| TRM     | trunk remoted module                        |
| TRM     | two-mile remote module                      |
| TRM     | two-mile remote switching module            |
| TRUMP   | trunk maintenance package                   |
| TSBEMR  | TSI board error mask register               |
| TSCMCCR | TSI clock control register                  |
| TSCMDNR | TSICOM diagnostic control register          |
| TSCMEMR | TSICOM error mask register                  |
| TSCMESR | TSICOM error source register                |
| TSDB    | time slot data block                        |
| TSGRP   | timeslot group                              |
| TSI     | time slot interchange                       |
| TSICOM  | TSI common                                  |
| TSIFCTL | TSI IF control                              |
| TSIFDGC | TSI IF diagnostic control                   |
| TSIFESR | TSI IF error source register                |
| TSIU    | time slot interchange unit                  |
| TSIUEQP | TSI equipage                                |
| TSIUMR  | TSI interrupt summary error mask register   |
| TSIUISR | TSI interrupt summary error source register |
| TSM     | trunk status mapping                        |
| TSFS    | Traffic Service Position System             |
| TSSR    | time slot select register                   |
| TT      | touch tone                                  |
| TF      | touch tone fraud                            |
| TF      | transmission test facility                  |
| TF      | transmission test function                  |
| TFFCOM  | transmission test facility common           |
| TTY     | teletypewriter                              |
| TU      | trunk unit                                  |
| TUCHBD  | trunk unit channel board                    |
| TUP     | telephone user part                         |
| TUP     | telephone user port                         |
| TV      | transfer vector                             |
| TWS     | trunk work station                          |
| TYPE    | type                                        |
| UA      | unnumbered acknowledgement                  |

|          |                                          |
|----------|------------------------------------------|
| UAS      | unavailable seconds                      |
| UBS      | unsuccessful backward setup              |
| UCB      | unit control block                       |
| UCD      | uniform call distribution                |
| UCI      | unified control interface                |
| UCI      | universal control interface              |
| UCIC     | unequipped circuit identification code   |
| UCL      | unconditional                            |
| UCONF    | universal conference                     |
| UCS      | user control string                      |
| UCT      | utility call trace                       |
| UF       | update file                              |
| UID      | utility identification                   |
| UMB      | umbilical                                |
| UNA      | unassigned                               |
| UNAV     | unavailable                              |
| UNLD     | unloader                                 |
| UNP      | uniform number plan                      |
| UO-CDM   | update-only call disposition messages    |
| UPD      | update                                   |
| UPNM     | update name                              |
| UPPS     | user-provided passed screening           |
| UPT      | universal pointer table                  |
| USPID    | users service profile identification     |
| UT       | utilities                                |
| UTD      | universal tone decoder                   |
| UTD      | universal tone detector                  |
| UTG      | universal tone generator                 |
| UVAR     | utility variable                         |
| VAT      | voice access test                        |
| VCDX     | very compact digital exchange            |
| VCF      | virtual card format                      |
| VCXO     | voltage controlled oscillator            |
| VDT      | video display terminal                   |
| VFL      | voice frequency link                     |
| VFY      | verify                                   |
| VISA     | vocoder interrupt and serial access chip |
| VL       | volume limit                             |
| VLMM     | very large main memory                   |
| VM       | voice message                            |
| VMS      | voice message service                    |
| VPA      | voice path assurance                     |
| VPATH    | virtual path                             |
| VPI      | virtual path identifier                  |
| VT       | virtual tributary                        |
| VT1.5    | virtual tributary 1.5 facility           |
| VT1FAC   | virtual tributary level 1 facility       |
| VTOC     | volume table of contents                 |
| VTOC     | volume table of contents                 |
| WATS     | wide area telephone service              |
| WBTGMEAS | wideband trunk group measurement         |
| WNC      | wireless network controller              |
| XDB      | External database                        |
| XPC      | X.25 protocol controller                 |
| ZBTSI    | zero byte time slot interchange          |
| ZCS      | zero code suppression                    |