FEATURE DOCUMENT

ACD PHASE 2 AGENT LOG-IN FEATURE

2-WIRE NO. 1 AND NO. 1A ELECTRONIC SWITCHING SYSTEMS

CONTENTS PAGE

INTRODUCTION

1. GENERAL INFORMATION

SCOPE

1.01 This document provides interface information for using the Automatic Call Distribution Phase 2 (ACD2) Agent Log-In (AGLI) feature with

the No. 1 and No. 1A Electronic Switching Systems (ESSs).

REASON FOR REISSUE

1.02 When this document is reissued, the reason for reissue will be stated in this paragraph.

FEATURE AVAILABILITY

1.03 The AGLI feature is an optional feature offered to a customer in conjunction with the ACD2 feature. The AGLI feature is available with generic programs 1E7/1AE6 and feature group Agent Log-In. The AGLI feature is dependent upon the ACD2 feature group, the Data Link Input/Output feature group, and the Inquiry and Response System feature group.

2. DEFINITION/BACKGROUND

DEFINITION

2.01 The AGLI feature is an optional feature offered to a customer in conjunction with the ACD2 service [reference A(1) in Part 18]. The AGLI feature allows an agent to dial a unique customer-defined identification code, which is translated by the ACD-ESS Management Information System (AEMIS) into the agent's name and used to report individual performance statistics. The agent identification (ID) codes and the agent/console assignment records are maintained in the ESS call store at all times. The agent IDs and traffic data are generated at the ESS and transmitted via data links to the AEMIS minicomputer. The AEMIS feature uses this data to produce various reports. See reference A(2) in Part 18.

BACKGROUND

2.02 The ACD2 feature offers an improved ACD service coupled with the AEMIS minicomputer. The minicomputer is located on the customer's premises. The AEMIS feature provides the customer with traffic and performance information, as well as summarized history and forecasts to assist in the efficient use of the agents and facilities. The AGLI feature provides a direct means of identifying an individual agent's activity rather than just the console's activity, as is available without AGLI.

DESCRIPTION

3. USER OPERATION

CUSTOMER

3.01 The ACD2 service uses 600-type consoles. The agent depresses the ***extension key*** and plugs in the headset. The ESS will return dial tone. The agent enters a customer-defined, log-in access code using TOUCH-TONE® dialing. The ESS will return dial tone. The agent enters the assigned 4-digit ID, an asterisk (*) is then entered, and the four digits are repeated for a total of nine digits (1234*1234). If the agent's ID is valid, the ESS returns dial tone and the agent depresses the ***in key*** and proceeds with normal ACD2 operations. If the agent's ID is invalid, the agent receives reorder tone and must depress the ***release key*** and ***extension key*** and reenter the log-in access code and agent code.

3.02 When an agent goes off duty or moves to a different console, the agent depresses the ***extension key***. The ESS will return dial tone. The agent enters the customer-defined, logout access code and the ESS returns dial tone. The agent unplugs the headset.

3.03 The log-in and logout access codes are defined in the centrex digit interpreter tables (paragraphs 4.04 and 4.07). These access codes can have as many digits as there are levels of digit interpretation of which there are five. Normally, the log-in and logout access codes have three digits; however, the number of digits in these access codes is subject to the customer's preference.

TELEPHONE COMPANY

3.04 Not applicable.

4. SYSTEM OPERATION

HARDWARE

4.01 Not applicable.

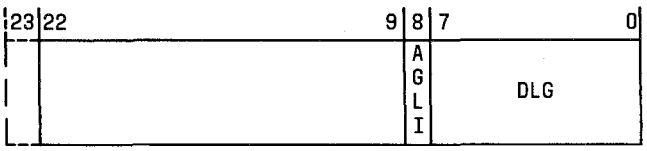
OFFICE DATA STRUCTURES

A. Translations

4.02 No new translation words are required for AGLI. Some information in the centrex multi-

line hunt group (MLHG) translations and in the centrex digit interpreter tables are redefined for AGLI.

4.03 ***MLHG Common Block:*** The MLHG common block contains terminating translation data which is common to all lines within the group. In optional word 16, item AGLI has been added to indicate whether the MLHG has ACD2 agent log-in capability (Fig. 1).



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

AGLI = 1 IF THE AGENT LOG-IN FEATURE IS PRESENT
DLG = DATA LINK GROUP FOR ACD2 MANAGEMENT INFORMATION SYSTEM

Fig. 1—MLHG Common Block

4.04 ***Centrex Prefix and Extension Code Translator:*** A data type 5, subtype 18, sub-subtype 30 is used to interpret an agent log-in (Fig. 2). A data type 5, subtype 18, sub-subtype 31 is used to interpret an agent logout (Fig. 3).

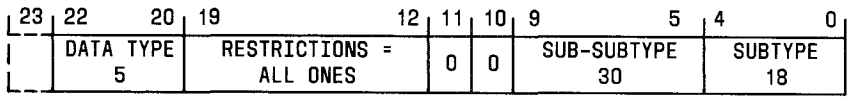
4.05 ***Line Equipment Number Translator:*** The auxiliary block for centrex MLHG (ACD2 only) contains originating translation data which is common to all lines within the group.

B. Parameters/Call Store

4.06 Parameter word F2AGLIB (Fig. 4) contains set card AGLITC and the starting address of a variable call store table. Set card AGLITC specifies the number of ACD2 customers with AGLI for whom call store space is allocated. The call store table contains the individual agent IDs and their console assignments for ACD2 customers with AGLI.

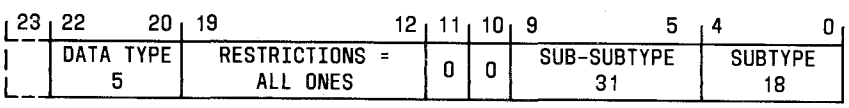
FEATURE OPERATION

4.07 When an ACD2 agent depresses the ***extension key*** and plugs in the headset, the system returns normal dial tone. A line equipment number (LEN) translation is performed which indicates this line is in a MLHG for ACD2. An originating register (OR) is seized and linked to the call. The log-in access code is entered and translated by the centrex prefix and extension code translator through the centrex digit interpreter tables as data type 5, subtype 18, and sub-subtype 30. The agent ID is entered once, an asterisk is entered, and the agent ID is entered for a second time. The system compares the first four digits with the second four digits. If the two IDs are the same, the agent ID is valid and is stored in the OR and the system returns normal dial tone; otherwise, the system returns reorder tone. The agent ID is taken from the OR and used to update the agent/console assignment table. A DOP 3 message is sent via data link to the AEMIS subsystem. The DOP 3 message identifies the agent ID and the associated



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

Fig. 2—Centrex Digit Interpreter Table—Agent Log-In



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

Fig. 3—Centrex Digit Interpreter Table—Agent Logout

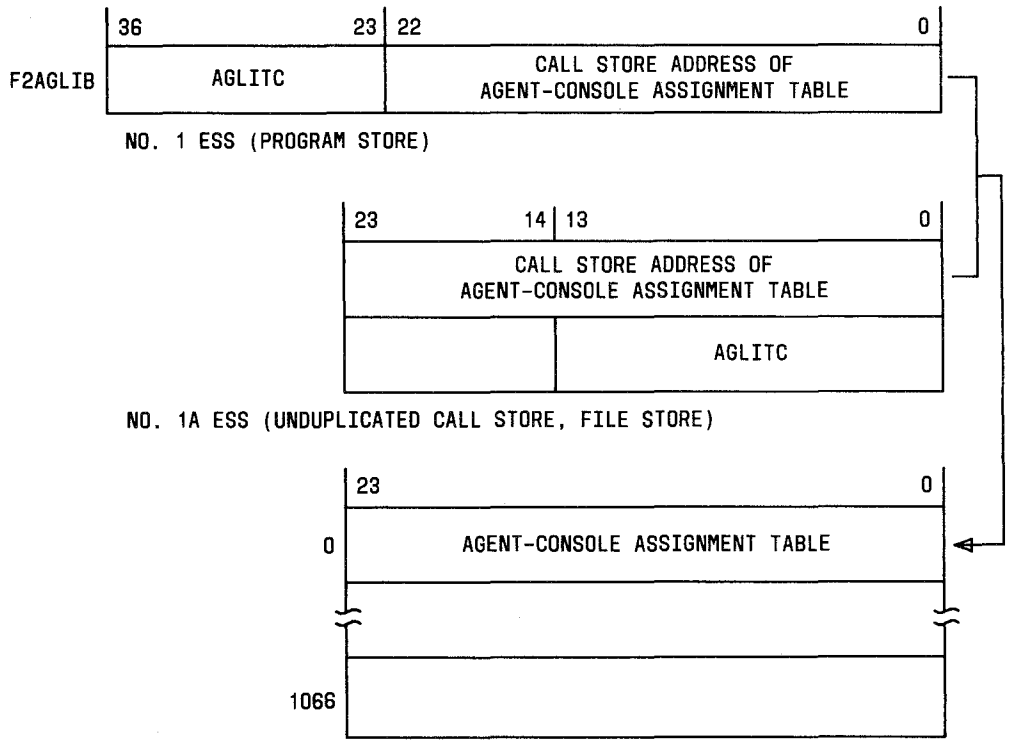


Fig. 4—Parameter Word F2AGLIB

console number. The layout of the DOP 3 message is shown in Fig. 5(a). The agent then proceeds with normal ACD2 operations by depressing the ***in key***.

4.08 When an agent goes off duty or moves to a different console, the agent depresses the ***extension key*** and the system returns normal dial tone. The logout access code is entered and translated by the centrex prefix and extension code translator through the centrex digit interpreter tables as a data type 5, subtype 18, and sub-subtype 31. The agent/console assignment table is updated, and a SOP 13 message is sent to the AEMIS subsystem via data links. A layout of the SOP 13 message is shown in Fig. 5(b).

4.09 An agent's console may be reassigned to the maintenance split (a group of consoles controlled by the operating telephone company [OTC]) via a supervisor's request or automatically by the ESS. If the supervisor requests the reassignment, the agent's ID is zeroed in the agent/console assignment table. When the ESS detects malfunctions in an agent's console, the system will automatically reassign the console to the maintenance split. The address of the agent's ID entry into the agent/console assignment table is computed and the entry is zeroed. A SOP 23 message is sent to the AEMIS subsystem, via data link, to inform the subsystem of the reassignment.

4.10 If the AEMIS subsystem goes out of service and subsequently comes back into service, the ESS will refresh the call store of the AEMIS minicomputer. As part of the call store refresh process, the ESS transmits log-in and logout data to the AEMIS minicomputer. During the call store refresh, the ESS continues to accept agent log-ins and logouts and maintains them in proper temporal order. These log-in and logout data are stored in a high priority buffer associated with the agent/console assignment table in call store. If the buffer becomes full, the ESS will not accept any further agent log-ins or logouts.

4.11 To start the AEMIS call store refresh, the ESS sends a SOP 20, block 13 message to the AEMIS subsystem. The ESS extracts all log-in and logout data from the agent/console assignment table and buffer and sends the information to the AEMIS subsystem as a series of DOP 3 and SOP 13 messages

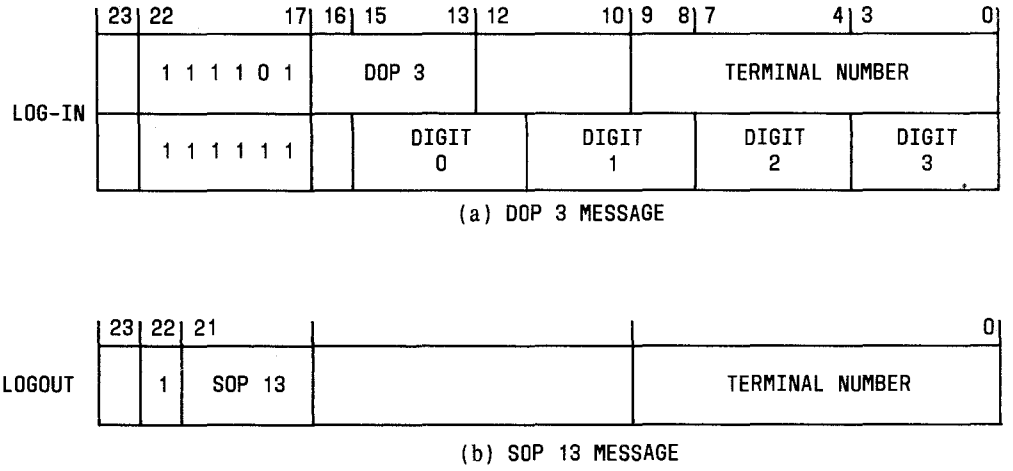


Fig. 5—ESS-to-AEMIS Data Link Messages

(see paragraphs 4.07 and 4.08). At the end of the AEMIS call store refresh, the ESS sends a SOP 21, block 13 message which contains a count of how many DOP 3 and SOP 13 messages were sent.

CHARACTERISTICS

5. FEATURE ASSIGNMENT

5.01 The AGLI feature is assigned on a per ACD2 customer basis.

6. LIMITATIONS

OPERATIONAL

6.01 The ESS performs a validity check on the agent's ID by comparing the first digit dialed with the fifth digit, the second digit with the sixth, etc. The asterisk is used for dialing convenience only; its presence or position is not checked by the ESS. All other validity checks are performed by the AEMIS subsystem.

6.02 The log-in and logout messages are transmitted to AEMIS as they occur. A time sequence is maintained at the ESS so that agent logouts are always preceded by agent log-ins for any ACD2 console.

ASSIGNMENT

6.03 The agent log-in and logout access codes are assigned by the operating telephone company in consultation with the ACD2 customer.

6.04 A No. 1 ESS or No. 1A ESS central office may have a maximum of 63 ACD customers. Although a maximum of 63 ACD2 customers per central office is possible, this limitation depends upon the sum of the total memory usage of all ACD2 customers in that central office. The maximum number of ACD2 agents is 999 per customer.

7. INTERACTIONS

7.01 Not applicable.

8. RESTRICTION CAPABILITY

8.01 The AGLI feature requires the ***extension key*** functions upon origination. If an agent's console is remote from the customer's premises using T-carrier transmission, the functions of the ***extension key*** or ***auto-in key*** are lost. Therefore, in this case, the ***auto-in*** key functions are lost if the AGLI feature is incorporated.

INCORPORATION INTO SYSTEM

9. INSTALLATION/ADDITION/DELETION

9.01 The procedure for the installation of the AGLI feature is given in Fig. 6.

9.02 Set card AGLITC is required for the AGLI feature. Set card AGLITC specifies the number of ACD2 customers which have the AGLI feature. Feature groups 9SAGLI, 9SDLIO, and 9SIRES and

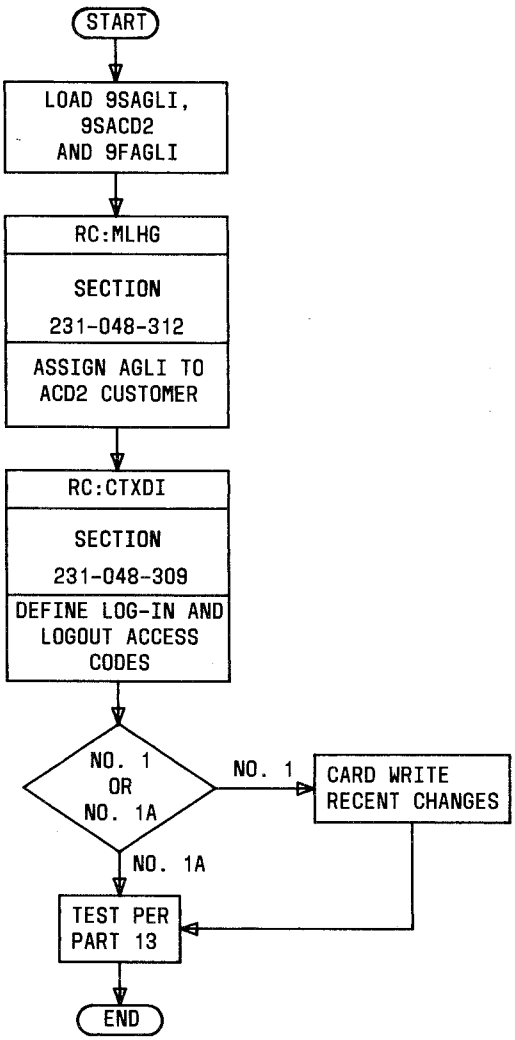


Fig. 6—Procedure for Addition of AGLI

feature package 9FAGLI are required for the AGLI feature.

10. HARDWARE REQUIREMENTS

Note: This part contains cost factors and determination of quantities. Central Office Equipment Engineering Systems (COEES) Planning and Mechanized Ordering Modules are the recommended procedures for developing these requirements. However, for planning purposes or if COEES is not available, the following guidelines may be used.

10.01 The AGLI feature requires no new hardware; however, the engineering for TOUCH-TONE receivers and data links are affected.

10.02 When an agent changes to another console (logout and log-in procedures), the TOUCH-TONE receiver usage increases approximately three times. To account for this usage, increase COEES inputs "ABS CCS/TTMS" and "HD CCS/TTMS" by the following amount:

$$\frac{0.201 * \text{TOT ATT CHGS}}{\text{TOUCH-TONE MS}}$$

Where,

TOT ATT CHGS = Maximum number of agent changes for all AGLI customers during the ESS busy hour.

TOUCH-TONE MS = The number of TOUCH-TONE main stations.

10.03 The number of data links for each ACD2 AGLI customer should be calculated according to the formula:

$$\text{LOAD} = \frac{\text{ATTS} * \text{ATT OCC}}{\text{AVG H T}} + \frac{\text{ATT CHGS}}{14{,}400}$$

Where,

ATTS = Maximum number of agents.

ATT OCC = Maximum agent occupancy.

AVG H T = Average weighted holding time per call in seconds (call connect time plus agent work time after the call).

ATT CHGS = Maximum number of agent reassignments for a particular ACD2 AGLI customer during the ESS busy hour. An agent reassignment is equivalent to one logout plus one log-in. The divisor (14,400) is a constant for all offices.

10.04 For No. 1 ESS, see Table A to convert LOAD into data link quantities. For No. 1A ESS, see Table B to convert LOAD into data link quantities.

11. SOFTWARE REQUIREMENTS

Note: This part contains cost factors and determination of quantities. Central Office Equip-

TABLE A

NO. 1 ESS DATA LINK QUANTITIES

OFFICE TYPE	DATA LINKS	LOAD
Signal Processor ESS-CO	1	0 — 2.030
	2	2.031 — 3.460
	3	3.461 — 5.190
	4	5.191 — 6.920
	5	6.921 — 8.660
	6	8.661 — 10.390
Central ESS-CO	1	0 — 2.340
	2	2.341 — 3.920
	4	5.891 — 7.850
	5	7.851 — 9.820
	6	9.821 — 11.780

TABLE B

NO. 1A ESS DATA LINK QUANTITIES

DATA LINKS	LOAD
1	0 — 1.065
2	1.066 — 1.810
3	1.811 — 2.716
4	2.717 — 3.621
5	3.622 — 4.527
6	4.528 — 5.432

ment Engineering System (COEES) Planning and Mechanized Ordering Modules are the recommended procedures for developing these requirements. However, for planning purposes or if COEES is not available, the following guidelines may be used.

MEMORY

A. No. 1 ESS

Fixed

11.01 The following memory is required whether or not the feature is used.

(a) ***Base Generic Program (Program Store):*** Three words are required.

(b) ***Fixed Parameters (Program Store):*** One word, F2AGLIB, is required.

Conditional

11.02 The following memory is required when the feature is activated.

(a) ***Optionally Loadable Feature Packages (Program Store):*** Feature package 9FAGLI requires 366 loaded words and 448 total words. Feature package 9FACD2 requires 5253 loaded words and 5440 total words (shared cost with other features).

(b) ***Call Store:*** A call store table is required for agent to console assignments. The table is 1066 words in length per ACD2 customer with AGLI. A 64-word head table is required per office with AGLI.

Variable

11.03 The ***translations (program store)*** memory required when the feature is applied is two words per digit interpreter auxiliary block.

B. No. 1A ESS

Fixed

11.04 The following memory is required whether or not the feature is used.

(a) ***Base Generic Program (Program Store, File Store):*** Six words are required.

(b) ***Fixed Parameters (Unduplicated Call Store, File Store):*** Two words, F2AGLIB, are required.

Conditional

11.05 The following memory is required when the feature is activated.

(a) ***Optionally Loadable Feature Packages (Program Store, File Store):*** Feature package 9FAGLI requires 533 words. Feature

package 9FACD2 requires approximately 6800 words (shared cost with other features).

(b) ***Duplicated Call Store:*** A call store table is required for agent to console assignments. The table is 1066 words in length per ACD2 customer with AGLI. A 64-word head table is required per office with AGLI.

Variable

11.06 The ***translations (unduplicated call store, file store)*** memory required when the feature is applied is two words per digit interpreter auxiliary block.

REAL TIME IMPACT

11.07 The following cycle counts are based upon three digit log-in and logout access codes: For No. 1 ESS, an agent log-in requires 7,575 cycles and an agent logout requires 6,700 cycles. For No. 1A ESS, an agent log-in requires approximately 15,000 cycles and an agent logout requires approximately 13,000 cycles. The cycle times for No. 1 ESS are as follows: 5.5 microseconds (0-percent speedup), 5.24 microseconds (5-percent speedup), and 5.0 microseconds (10-percent speedup). Clock speedup is available with 1E7 and base restarts of the 1E6 generic programs. The cycle time for No. 1A ESS is 0.7 microsecond.

12. DATA ASSIGNMENTS AND RECORDS

TRANSLATION FORMS

12.01 The following translation forms are utilized for the AGLI feature. A complete description of the forms is given in reference C(1) in Part 18.

(a) ***ESS 1107B—Centrex Group Supplementary Information Record:*** This form is used to assign the AGLI feature on a per MLHG basis.

(b) ***ESS 1109—Centrex Group Record:*** This form is used to compile the digit interpreter table auxiliary block.

RECENT CHANGES

12.02 The following recent change (RC) messages are affected by the AGLI feature.

RC MESSAGE	FUNCTION
RC:MLHG	Keyword AGLI has been added to assign the feature to MLHGs [reference A(4) in Part 18].
RC:CTXDI	This message is used to define the agent log-in and logout access codes.

13. TESTING

13.01 Before testing the AGLI feature, the test procedures for verifying ACD2 with the AEMIS feature should be successfully executed [reference A(2) in Part 18].

13.02 The operation of the AGLI feature is tested using the following messages:

(a) ***VFY-CSTG Input Message:*** This message verifies information in the multiline hunt group common block. The system will respond with a TR15 output message.

(b) ***SA-AUDIT-04 Audit Request:*** This message checks to see if the call store space allocated for the AGLI feature is sufficient. A SA01 SUCC 04 output message indicates that the audit has successfully been completed. The audit should be repeated a second time to check for errors. If an error message is printed when the audit is run for a second time, the central control (CC) registers need to be scrutinized.. If the X register is nonzero, the call store space for AGLI is insufficient. The Y register contains the data group number (DAG) assigned to the ACD customer. The F register contains the multiline hunt group common block address. If the X register is zero, parameter word F2AGLIB is not initialized.

(c) ***VFY-XDGNT Input Message:*** This message verifies the contents of the centrex digit interpreter tables. The system response is OK followed by a TR18 output message.

(d) ***DL-SZRE-R Diagnostic Request:*** This input message will test the data links between the ESS and the AEMIS subsystem. The system response is ATP (all tests passed). See reference B in Part 18.

13.03 See reference A(5) in Part 18 for details of customer premises equipment testing.

14. OTHER PLANNING TOPICS

14.01 Not applicable.

ADMINISTRATION

15. MEASUREMENTS

15.01 Not applicable.

16. CHARGING

AUTOMATIC MESSAGE ACCOUNTING

16.01 Not applicable.

UNIFORM SERVICE ORDER CODES

16.02 Refer to the AT&T USOC Manual or contact the local telephone company USOC coordinator.

SUPPLEMENTARY INFORMATION

17. GLOSSARY

17.01 Not applicable.

18. REFERENCES

18.01 The following documents contain information pertaining to or affected by the ACD Phase 2 Agent Log-In feature.

A. Bell System Practices

(1) Section 231-090-399—Feature Document—Automatic Call Distribution (ACD) Phase 2 Description—2-Wire No. 1 and No. 1A Electronic Switching Systems

(2) Section 231-090-413—Feature Document—Interface With ACD-ESS Management Information Systems (AEMIS) Feature—2-Wire No. 1 and No. 1A Electronic Switching Systems

(3) Section 533-210-601—ACD-ESS Phase 2 AEMIS Traffic Engineering

(4) Section 231-048-312—Line RC Formats for LINE, TWOPTY, MPTY, SCLIST, MLHG, ACT, CFV, OBS, VSS, SIMFAC, and MOVE (1E6/1AE6 and 1E7/1AE7 Generic Programs) 2-Wire No. 1 and No. 1A Electronic Switching Systems

(5) Section 533-210-000—Task Oriented Practice—AEMIS Installation, Test, and Maintenance

(6) Section 231-048-309—Centrex CO, ESSX-1 Recent Change Formats for CTXCB, CTXDI, CTXEXR, CXDICH, DITABS, DLG, FLXDG, FLXRD, and FLXRS (1E6/1AE6 and 1E7/1AE7 Generic Programs) 2-Wire No. 1 and No. 1A Electronic Switching Systems

(7) Section 231-090-412—Feature Document—Basic Data Link Input/Output Control, 2-Wire No. 1 and No. 1A Electronic Switching Systems.

B. Teletypewriter Input and Output Message Manuals

(1) Input Message Manual IM-1A001 (No. 1 Electronic Switching System)

(2) Output Message Manual OM-1A001 (No. 1 Electronic Switching System)

(3) Input Message Manual IM-6A001 (No. 1A Electronic Switching System)

(4) Output Message Manual OM-6A001 (No. 1A Electronic Switching System).

C. Other Documentation

(1) Translation Guide TG-1A, 2-Wire No. 1 and No. 1A Electronic Switching Systems

(2) Office Parameter Specification PA-591001, 2-Wire No. 1 Electronic Switching System

(3) Parameter Guide PG-1, 2-Wire No. 1 Electronic Switching System

(4) Office Parameter Specification PA-6A001, 2-Wire No. 1A Electronic Switching System

(5) Parameter Guide PG-1A, 2-Wire No. 1A Electronic Switching System

(6) Translation Output Configuration PA-591003, 2-Wire No. 1 Electronic Switching System

(7) Translation Output Configuration PA-6A002, 2-Wire No. 1A Electronic Switching System.