APS INPUT/OUTPUT MESSAGE

INTERFACE WITH SCCS

FEATURE DOCUMENT

TM
1A ESS   SWITCH


## 1. INTRODUCTION

1.01  This appendix describes an additional method of providing a maintenance
     interface between the SCCS (Switching Control Center System) and the
APS (Attached Processor System) used with the 1A ESS switch. This feature
allows a single SCCS unit to receive both 1A ESS switch and APS messages.


DESCRIPTION

1.02  The APS Input/Output Message feature provides another maintenance
     interface to the AT&T 3B20 duplex computer. Specifically, this fea-
ture provides:


 (a) The ability to enter and receive 3B messages from a processor input/
     output terminal

 (b) The MCC (master control center) status lamp monitor of APS equipment
     status

 (c) The storage of APS alarmed maintenance messages.

1 .03  The APS Input/Output Message feature provides monitor and control
      access of the 3B computer through the 1A processor input/output ter-
minals. The standard SCCS interface to the 3B maintenance channel can be
replaced with a dialup arrangement to the 3B maintenance terminal channel.
The ability to send and receive 3B computer messages is normally active.
The APS Input/Output Message feature is enabled any time the 1A ESS switch
input/output subsystem is initialized. The 3B computer is not permitted to
allow or to inhibit the system.

SOFTWARE REQUIREMENTS

1.04  The APS Input/Output Message feature is available with APS generic
     program 1AP <1> 1D.01 release. This feature also requires feature
package AP3BIO (9F210) which contains approximately 2050 words and 189
words of call store memory. Feature group sets cards 9SAPIO and 9SAPS are
required to implement this feature.

BACKGROUND

1.05  The SCCS arrangement described in the parent document for monitoring
     and controlling a 1A processor-based Stored Program Control System
with an APS providing disk storage has separate links to the 1A processor
and 3B computer. The 1A processor link is a 1200-baud asynchronous data link
plus an E2A data telemetry link. The 3B computer link is a 2400-baud BX.25
synchronous protocol link which multiplexes five 3B computer channels. Before
the 3B link can be accepted by the SCC it must be demultiplexed using a
"T cabinet" (J1CO16-T-1).

1.06  This interface method provides APS capability from the l A ESS switch

terminals. It also provides monitor capability via the MCC APS status lamp.

## 2. USER OPERATION

INPUT/OUTPUT MESSAGES

2.01  The APS Input/Output Message feature is normally active but can also
be allowed using the ALW.APMSG! input message. This message initializes system status, tests the status of the APCL (Attached Processor Communications Link) and sends a 3B computer allow message through the APMH (Attached Processor Message Handler) to the

3B computer assuming the link is good. If AMPII returns a successful status, the system returns an "OK" acknowledgement to the data link. If the APHM status was bad, a fail acknowledgement is sent to the data link and the message is retired.

2.02  This feature can be inhibited using the INH.APMSG! input message. This
message sets the inhibit bit in the system status word and lights the MCC PROG CONTROL OFF NORM lamp. The status of the APMSG capability is reflected in the status lamp on the master control con- sole. Depressing the key associated with this lamp produces a REPT PROG CNTL OFF NORM message indicating the APMSG capability is inhibited. After this, any attempts to send an output message will result in the 1A ESS switch returning a message instructing the 3B computer to change its status to inhibited.

2.03  Any channel assigned to the output message class APSMTC can send and
receive 3B computer messages. Channels in the 1A processor are added or deleted by each office using input messages RTE:MSGCLS and INIT.MSGCLS. The system will accept 3B input messages only from channels that have been assigned. Input messages entered from channels not correctly assigned will receive a "?C" acknowledgement and no processing is performed on the message. After the channel screening, checks are made to insure that the system is allowed, the APCL is available, and data is present in the input message data area. Failure of these checks results in the following messages: NG, APMSG INHIBITED, NG, API DUPLEX FAILED, and NG, MSG NOT FOUND.

2.04  Any 3B computer output message is sent to the 1A processor by adding
the APS message device file to the class definition for the 3B computer message. Table A contains a list of the 3B class definition to which the APS message device file has been added. Any office is free to add or delete class definitions from this list.

2.05  The 3B computer message is printed on all channels in message class
APSMTC, using the REPT APMSG: output message. In addition the 3B computer output message OP:OOS is always sent to all 1A ESS switch channels in message class MOCC with the message OP:OOSUNITS. To accommodate SCC

monitoring and alarming functions, the first line of the 3B computer
message is printed on the first line of the message REPT APMSG: and the
priority is kept the same.  This format follows all the standards required
by the SCC single message alerting feature.

2.06  When trouble is encountered in the system, it is reported using the
following output messages: REPT. IOCP - APS O MESSAGE SYSTEM ADDR=a
on the processor and REPT.APSMG ERR a on the 3B computer.

STORAGE AND RETRIEVAL

2.07  All alarmed 3B computer messages are saved by the 1A Processor Error
Analysis Program.  Collection of these messages is manually controlled
through the INH:ERAP and ALW:ERAP messages. A 1A ESS switch maintenance file
number associated with the record is printed at the end of the REPT APMSG:
output message. The 3B computer message is retrieved in maintenance file
number sequence with the maintenance messages or by themselves using the
standard capabilities of ERAP. In addition, searches can be made for speci-
fic 3B computer messages or type of messages.

APS STATUS MONITOR

2.08  An unused status lamp on the MCC panel represents the APS status. This
lamp is provided information to update it every 15 minutes or on any
status changes by a 3B computer process. The lamp has three states which are
listed in Table B. This status lamp is routed to the SCC by standard E2A
telemetry. Associated with the lamp is a key that generates a message to the
channels in message classes APSMTC and MOCC indicating the APS status.  When
the key is depressed, the output message OP.APS O is printed. The message
reports the status of the 3B communication link (APT O and 1), the 1A ESS
switch file access, and whether the 3B computer was requested to send a
report of out of service units. If the report was requested, the 3B computer
OP:OOS output message is sent to all the 1A processor channels in messages
class APSMTC as well as the local maintenance channel.

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TABLE A

3B MESSAGE CCLASS DEFINITIONS

 CCLASS      NO.            DEFINITION

CL-SPERR     0   Output class for improperly formatted spooler messages.
CL-MAINT     1   Output class for general purpose short maintenance
             messages.
CL-MAIPR     2   Output class for low priority general purpose maintenance
             message
CL-PMORT     5   Output class for processor post mortem message
CL-EIH     6   Output class for processor error interrupts
CL-MEMF     7   Output class for memory faults
CL-DGN     9   Output class for DMERT diagnostics
CL-TLP     10   Output class for TLP
CL-AUDT     11   Output class for audit messages to be immediately output

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          to terminal
CL-AUDL    12   Output class for audit message normally routed to log file.
CL-RC      13   Output class for recent change message.
CL-SIM     15   Output class for system integrity message.
CL-XUNIT   16   Output class for outputting a list of units that are
CL-XUNOT        abnormal state such as out of service.
CL-REX     17   Output class for routine exercise messages.
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TABLE B

STATUS CLAMP ON THE MCC PANEL

LAMP        STATE           DEFINITIONS

Primary     Red     No communication exists to the 3B computer
                    or the 1A ESS switch file access duplex failed

Secondary   Amber   One or more 3B units are out of service

Normal      Off     No 3B unit is out of service